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| **Telecommunication Standardization Bureau** |  |

Geneva, 13 December 2010

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| Ref: | **TSB Circular 153** COM 5/JKK |
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| - To Administrations of Member States  of the Union  **Copy:**  - To ITU-T Sector Members;  - To ITU-T Associates;  To the Chairman and Vice-Chairmen  of Study Group 5;  - To the Director of the Telecommunication Development Bureau;  - To the Director of the Radiocommunication Bureau |

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| Subject: | **Approval of new Questions 22/5 and 23/5** |

Dear Sir/Madam,

1 At the request of the Chairman of Study Group 5, *Environment and climate change,* I have the honour to inform you that, in accordance with the procedure described in Resolution 1, Section 7, § 7.2.2, of WTSA (Johannesburg, 2008), Member States and Sector Members present at the last meeting of this Study Group which was held in Geneva from 23 November to 1 December 2010, agreed by reaching consensus to approve the following new Questions:

*Question 22/5 – Setting up a low cost sustainable telecommunication infrastructure for rural communications in developing countries* (see Annex 1)

*Question 23/5 – Using ICTs to enable countries to adapt to climate change* (see Annex 2)

2 **Questions 22/5 and 23/5 are therefore approved.**

3 The resulting Recommendations are assumed to fall under the Alternative Approval Process (AAP).

Yours faithfully,

Malcolm Johnson  
Director of the Telecommunication  
Standardization Bureau

**Annexes: 2**

ANNEX 1  
(to TSB Circular 153)

Text of new Question 22/5

**Question 22/5:** **Setting up a low cost sustainable telecommunication infrastructure for rural communications in developing countries**

**1 Motivation**

The existing mobile network systems are primarily defined for urban areas where necessary support infrastructure (adequate power, building/shelter, accessibility, skilled manpower to operate etc.) for setting up a telecommunication network is assumed to exist. Hence the current systems do not meet the rural specific requirements and cannot be mass deployed.

Inadequate deployment of telecommunication infrastructure in rural areas in developing nations can be attributed to various challenges. Some of the known challenges are:

Shortage of Power.

Expense of maintaining power backup usually Diesel and environmental hazards thereof.

Difficult terrain.

Difficult access and transportation.

Lack of skilled manpower.

Installation and maintenance of networks is quite challenging and difficult.

Very high operating cost.

Low potential ARPU.

Sparsely populated and scattered population cluster.

These are some of the challenges that developing countries planning to spread ICT to rural areas must be prepared for.

The existing mobile network systems are not defined to meet these challenges and hence have not been mass deployed in rural area. In order to have options of deployment of suitable mobile network systems in rural areas, a suitable set of System Requirements should be evolved addressing the identified rural challenges.

Mobile network systems assist in adaptation to climate change by providing information about short-term extreme weather events and long term trends such as drought and monsoon. This information can help sustain water supplies and optimise irrigation systems to maximise crop yields.

This issue will be studied in close cooperation with the proposed new Question on Adaptation.

Furthermore, for the existing mobile network systems in all countries, it becomes important to develop guidance how to improve their resilience in disaster situations (e.g. hurricane, tropical storm, etc).

**2 Question**

Study items to be considered include, but are not limited to:

This Question will identify, assess and consolidate the challenges faced by developing countries in setting up a low cost sustainable telecommunication infrastructure in rural areas of developing nations. These challenges should further be deliberated to extract various possible technological or engineering interpretations in order to convert these challenges into technical requirement options. This would become a base for system requirements evolution.

Evolution of system requirements for rural mobile network system specifically addressing such identified challenges of rural deployment.

This Question will study the generic system requirements (independent of chosen Radio transmission technology) for rural mobile networks system including aspects related to deployment architecture, power consumption, power source, packaging, operation & maintenance etc.

This Question will also provide guidance on the way to adapt to climate change and to improve the resilience of mobile networks in disaster situations.

**3 Tasks**

The task would be to develop guidance on “Challenges of setting up sustainable telecommunication infrastructure in rural areas of developing nations”. This would become a basis for evolution of system requirements (independent of chosen radio transmission technology). This will include energy efficiency and powering of mobile network systems for deployment of telecommunication infrastructure in areas without access to electricity grid..

This would also be applicable to improve the resilience of mobile networks in all countries in disaster situations (e.g. hurricane, tropical storm, etc).

This will lead to the drafting of Handbook containing best practises on these issues and Recommendations if needed.

Note: An up-to-date status of work under this Question will be included in SG5 Work Program (<http://www.itu.int/ITU-T/studygroups/com05/index.asp>).

**4 Relationships**

Study Groups:

* ITU-T Study Groups
* ITU-D Study Groups
* ITU-R Study Groups

Standardization bodies, forums and consortia:IEC, ISO

ANNEX 2  
(to TSB Circular 153)

Text of new Question 23/5

**Question 23/5 – Using ICTs to enable countries to adapt to climate change**

**1 Motivation**

ICTs can be effective in enabling countries to better adapt to climate change[[1]](#footnote-1) . Adaptation involves taking action to tolerate the effects of climate change on a local or country level. Examples include remote sensing for monitoring of natural disasters such as earthquakes and tidal waves, and improved communications to help deal with natural disasters more effectively.

ICTs in general, and satellite and surface-based remote sensors in particular, are already the main tools for environmental observation, climate monitoring and provide data for climate change prediction on a global basis. The modern disaster prediction, detection and early warning systems based on the use of ICTs are essential for saving lives and should be proliferated in developing countries. ICTs are making available vital information on the changing environment to the mass population who need *capacity building* i.e. information and education and help to sustain basic needs such as food and water. Ideally this would be achieved through green technologies such as mobile devices and base stations powered by solar energy.

ICTs can be part of the solution to climate change, in particular by helping both developed and developing countries adapt to the negative effects of climate change using ICT based systems monitoring weather and the environment worldwide.

Requirements for appropriate ICT technologies to contribute to climate change mitigation are the subject of new Recommendations and Handbooks.

These publications can be used by manufacturers and operators to produce and implement ICTs which are effective in supporting adaptation to climate change.

ITU-T now needs to consider similar publications in the area of adaptation.

**2 Question**

Study items to be considered include, but are not limited to:

1. What are the standardisation requirements for ICTs to enable adaptation to climate change?
2. How can ICTs, in particular fibre submarine cable networks, be used more effectively to monitor the global environment/ecosystem and what new standards are required?
3. How can ICT standards be used and adapted to more effectively disseminate information on both natural and man-made disasters (early warning) to communities (e.g. supporting GDACS under the UN framework?
4. Identification if new ICT standards are needed to address food security, water transportation and supply in close collaboration with D sector.
5. How can ICT standards better enable water management under accelerating climate change conditions to improve the overall efficiency of water use, leading to a more sustainable use of water resources?
6. What ICT standards need to be used or developed to disseminate information to enable farmers to better forecast crop yields and production?
7. How can ICTs be used to monitor deforestation and forest degradation and what standards are available or need development?
8. How can ICTs be used to reduce CO2e emissions by better waste management through a ‘cradle to cradle’, i.e. ‘closed loop’ approach whereby more efficient recycling means fewer raw materials need to be mined ?
9. What standards are needed for ICTs to be used to increase energy supply efficiency and maximize the use of renewable sources?
10. How can ICTs be used in education and to raise awareness on climate change and what standards development is required?
11. What e-health standards are needed for more effective healthcare, as diseases spread due to changing climatic conditions, and to ensure interoperability?
12. Do NGN standards accommodate the requirements of these technologies? Is additional NGN infrastructure or standardisation needed?

**3 Tasks**

Tasks include, but are not limited to:

* Establish handbooks on practical examples and best practices of ICT standards, and if necessary recommendations, to support adaptation to climate change.
* Produce a ‘roadmap’ to identify the types of ICT technologies and standards available, propose improvements and facilitate more effective use of these
* Coordinate with other SGs, ITU-R, ITU-D and other bodies on a regular basis to collaborate effectively

Note: An up-to-date status of work under this Question will be included in SG5 Work Program (<http://www.itu.int/ITU-T/studygroups/com05/index.asp>).

**4 Relationships**

Study Groups:

* ITU-T SGs 9, 13, 15 and 16
* ITU-D SGs
* ITU-R SGs

Standardization bodies, forums and consortia**:**

ISO, ETSI ,UNFCCC, UNEP, FAO, UN-REDD Programme (avoiding forest degradation), UN-Water and UN-Habitat on sustainable water supplies,

Cooperation with UNFCCC is particularly important for the assessment of the environmental impacts including ICT projects and the assessment of the environmental impacts of ICT in countries or groups of countries.

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1. Using ICTs to Tackle Climate Change, ITU-GeSI joint paper to COP-16, Cancun, Mexico [↑](#footnote-ref-1)