International Telecommunication Union

QUESTION 9-1/2

Identification of study topics in the ITU-T and ITU-R study groups which are of particular interest to developing countries

ITU-D STUDY GROUP 2 3rd STUDY PERIOD (2002-2006)

Report on Question 9-1/2

International Telecommunication Union

THE STUDY GROUPS OF ITU-D

The ITU-D Study Groups were set up in accordance with Resolutions 2 of the World Telecommunication Development Conference (WTDC) held in Buenos Aires, Argentina, in 1994. For the period 2002-2006, Study Group 1 is entrusted with the study of seven Questions in the field of telecommunication development strategies and policies. Study Group 2 is entrusted with the study of eleven Questions in the field of development and management of telecommunication services and networks. For this period, in order to respond as quickly as possible to the concerns of developing countries, instead of being approved during the WTDC, the output of each Question is published as and when it is ready.

For further information

Please contact:

Ms Alessandra PILERI
Telecommunication Development Bureau (BDT)
ITU
Place des Nations
CH-1211 GENEVA 20
Switzerland
Telephone: +41 22 730 6698
Fax: +41 22 730 5484
E-mail: alessandra.pileri@itu.int

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DISCLAIMER

This report has been prepared by many volunteers from different Administrations and companies. The mention of specific companies or products does not imply any endorsement or recommendation by ITU.

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Report on Question 9-1/2

Introduction

A. Question 9-1/2 as adopted by WTDC-02 calls for the following: **"Identify Study Group Questions in the ITU-T and ITU-R Sectors which are of particular interest to developing countries and systematically, by way of annual progress reports, inform them of the progress of work on the Questions to facilitate their contributions to the work on those Questions as well as, ultimately, to benefit from their outputs in a timely manner"**. In order to fulfil this task the following **Guidelines** for selecting such Questions (to be called topics as of September 2002) have been revised by the Study Group in its last meeting in September 2002:

a) Study topics relevant to maintenance;

b) Study topics relevant to the acquisition of propagation data;

c) Study topics relevant to spectrum management;

d) Study topics relevant to the protection of telecommunication installation and equipment;

e) Study topics relevant to international telephone tariffs and accounting;

f) Study topics relevant to security of telecommunication networks;

g) Other additional relevant Questions based on requests of the members of the Study Group during the new life period of this Question (2002-2006).

Based on these general guidelines, the Study Group 2 meeting in September 2002 reconfirmed the following additional guidelines for finalizing the list of selected Questions (topics) of particular interest to developing countries:

1) Request the concerned Rapporteur's Groups in Study Group 2, dealing with WTDC-02 Questions, to cover those Questions of particular interest to developing countries and to report on their progress in their reports. This will apply to the following WTDC-02 Questions:

   a) Question 11-1/2: (*Examination of digital broadcasting technologies and systems, including cost/benefit analyses, interoperability of digital terrestrial systems with existing analogue networks, and methods of migration from analogue terrestrial techniques to digital techniques*) will report on all relevant Questions of Study Group 6 in ITU-R and Study Group 9 in ITU-T.

   b) Question 12-1/2 (*Examination of broadband communications over traditional copper wires, taking into account certain aspects of technologies, systems and applications*) and Question 20/2 (*Examination of access technologies for broadband communications*) will report on all relevant Questions of Study Group 15 in ITU-T.

   c) Question 18/2 (*Strategy for migration of mobile networks to IMT-2000 and beyond)* will report on all relevant Questions of Study Group 8 in ITU-R and the Special Study Group in ITU-T as regards IMT-2000 issues.

d) Resolution 9/Joint Group *(Participation of countries, particularly developing countries, in frequency spectrum management*) will continue to update information regarding Study Group 1 Questions in the radio sector. However, their updated information will appear in the report on Question 9-1/2.

2) Drop the selection of any Question for which ultimate result(s) is(are) recommendation(s) addressed to the industry for manufacturing;

3) Continue to seek the proposals of relevant counsellors in the other two ITU Sectors, in the final selection of these Questions (topics).

A list of Questions of particular concern was established and is presented in Annex 1, which is composed of Part 1 "ITU-R Questions of particular concern to developing countries" and Part 2 "ITU-T Questions of particular concern to developing countries". This Annex includes the mission of the Sector, the scope of each Study Group, relevant Questions with their corresponding resulted recommendations, Handbooks and/or equivalent issued or under preparation. The list of relevant Supplements to ITU-T Recommendations is attached as Appendix 1 to Part 2 of Annex 1.

B. In addition to this list of Questions, many topics (formally called technical arrays) were identified by Study Group 2 in the past two cycles to be covered through technical reports; some had been dropped and handled as Questions (e.g. IP telephony, digital broadcasting, broadband communications, etc.). However, three are still to be handled by Question 9-1/2 and covered by such technical reports as follows:

– High-altitude platform stations.

– Frequency-agile systems in the MF/HF band.

– National strategy to secure cyberspace.

– As requested, a list of workshops is attached as Appendix 2 to this report.

ANNEX 1

PART 1

ITU-R[1] Questions, Recommendations and Handbooks of particular concern to developing countries

Mission of the Sector

The role of Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

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[1] For more detailed information, please consult: http://www.itu.int/brsg/index.html

STUDY GROUP 1

Spectrum management

Scope

Spectrum planning, utilization, engineering, sharing and monitoring.

1 Development of principles and techniques for effective spectrum management, sharing criteria and methods, techniques for spectrum monitoring and long-term strategies for spectrum utilization and economic approaches to national spectrum management as well as, in association with the appropriate bodies of the ITU, facilitation of the collection and dissemination of information concerning computer programs prepared for the implementation of relevant Recommendations.

2 To provide assistance in matters within its competence to developing countries in cooperation with the Telecommunication Development Sector.

3 Study a limited number of specific urgent Questions concerning inter-service sharing and compatibility referred to it by the Radiocommunication Assembly or, if the Question arises during the interval between the Assemblies, by the decision of a meeting of the Study Group Chairpersons and Vice-Chairpersons or by the Director after consultation with interested Study Group Chairpersons and Administrations. The Radiocommunication Assembly or the Director, as the case may be, shall establish a time schedule for the completion of this work.

4 Development of Recommendations or of a Report to the Conference Preparatory Meeting in answer to those urgent Questions concerning inter-service sharing and compatibility requiring special attention. This course of action shall be followed if the matter cannot be dealt with more expeditiously through the mechanism of joint working parties, joint task groups or ad hoc rapporteur groups, as assigned by the Radiocommunication Assembly, or if the Question arises during the interval between Radiocommunication Assemblies, by the Director after consultation with interested Study Group Chairpersons and Administrations.

a) Questions

Q.205-1/1 – Long-term strategies for spectrum utilization.

Q.206/1 – Strategies for economic approaches to national spectrum management and their financing.

Q.207/1 – Assessment, for spectrum planning and strategy development purposes, of the benefits arising from the use of the radio spectrum.

Q.208/1 – Alternative methods of spectrum management.

Q.215/1 – Monitoring of the radio coverage of land mobile networks to verify compliance with a given license.

Q.216/1 – Spectrum redeployment as a method of national spectrum management.

Q.223/1 – Guidance on the regulatory framework for national spectrum management.

Q.225/1 – Inspection of radio stations to verify compliance with licence parameters.

b) Reports and Recommendations (SM series)

No recommendations have been adopted yet for the first four Questions. However, Report SM.2012-1 entitled "Economic aspects of spectrum management", developed in response to Questions 206/1, 207/1 and 208/1, has been complemented with an addendum that provides further information in the form of accounts of countries experiences. This Report provides useful information on the theory and practice of economic strategies for spectrum management and will assist in the future development of any recommendation relevant to those three Questions.

The following recommendations have been developed to provide guidance and assistance in national spectrum management and monitoring:

Rec. SM.1047-1: "National spectrum management";

Rec. SM.1048: "Design guidelines for a basic automated spectrum management system (BASMS)" this has resulted in a special collaboration between the Development Sector and Study Group 1 in the development of WinBASMS. The Windows Basic Automated Spectrum Management System (WinBASMS) has been developed according to specifications prepared by the ITU Telecommunication Development Bureau (BDT). WinBASMS is a multilingual, multi-function computer programme providing spectrum managers automated support for:

- Record keeping for all radio services licenses and related technical and administrative information;
- Frequency assignment and interference calculations for fixed, mobile, broadcasting and other similar services;
- Frequency coordination for both national and international applications;
- Recording and notifying national license fee data;
- Generating national frequency licenses.

SG 1, in cooperation with the BDT, is in the process of upgrading WinBASMS to an ITU Spectrum Management System according to Recommendation ITU-R SM.1604;

Rec. SM.1049-1: "A method of spectrum management to be used for aiding frequency assignment for terrestrial services in border areas";

Rec. SM.1370-1: "Design guidelines for developing advanced automated spectrum management systems";

Rec. SM.1392-1: "Essential requirements for a spectrum monitoring station for developing countries";

Rec. ITU-R SM.1413-1: containing 402 pages, entitled "Radiocommunication Data Dictionary (RDD) for coordination and notification purposes" has been developed to assist administrations in their (paper or electronic) filings with ITU-R;

Rec. ITU-R SM.1447: "Monitoring of the radio coverage of land mobile networks to verify compliance with a given licence" (developed from Question 215/1);

Rec. ITU-R SM.1603: "Spectrum redeployment as a method of national spectrum management" (developed from Question 216/1).

c) Handbooks and/or the equivalent

c.1 Issued:

c.1.1 "Spectrum monitoring" (English, French and Spanish 2002).

c.1.2 An update of the Handbook on "Computer-aided techniques for Spectrum Management 1999" was published recently in 2005.

c.1.3 An update of the handbook on "National spectrum management 1995" was also published recently in 2005.

Remarks

Special collaboration existed between the Development Sector's Study Group 2 and ITU-R Study Group 1 on implementing WTDC-98 Resolution 9, "Participation of countries, particularly developing countries, in frequency spectrum management". The first stage of this collaboration resulted with an adopted Report to this aim. The World Telecommunication Development Conference WTDC-02 adopted a revision of Resolution 9 and requested the work to continue on the second stage and to associate the work on ITU-D Q.21/2 "Calculation of frequency fees". This combined activity should be considered also as a direct answer to Question 205-1/1, a part answer to Q.216/1 and to complement Report SM.2012-1.

Study Group 1 is also preparing a report for "the Guidance on the Regulatory framework national spectrum management systems" in response to Question ITU-R 223/1. This report is expected to be finalized in October 2006.

STUDY GROUP 3

Radiowave propagation

Scope

Propagation of radio waves in ionized and non-ionized media and the characteristics of radio noise, for the purpose of improving radiocommunication systems.

The Study Group produces recommendations (in the ITU-R P series) containing (i) information on the basic propagation characteristics of the troposphere and ionosphere that affect radiowave propagation, and (ii) propagation prediction methods for use by the various radiocommunication services.

1 Questions

Question 201-2/3 – Radiometeorological data required for the planning of terrestrial and space communication systems and space research application.

Question 203-3/3 – Propagation data and prediction methods for terrestrial broadcasting, fixed (broadband access) and mobile services at frequencies above 30 MHz.

Question 206-3/3 – Propagation data and prediction methods for fixed- and broadcasting-satellite services.

2 Recommendations (P series)

Rec. P.1144-3: "Guide to the application of the propagation methods of Radiocommunication Study Group 3". This recommendation lists those propagation prediction methods available within the ITU-R P series of recommendations, together with their parameter ranges of applicability. It is a quick and easy way to identify the required recommendation for each application. This recommendation was be updated regularly to reflect the latest revised and new recommendations.

Recommendations associated with Question ITU-R 201-2/3:

– Rec. P.453-9: "The radio refractive index: its formula and refractivity data". This recommendation gives basic formulae relating to the refractivity of the neutral atmosphere and maps indicating the geographical and season variation of surface refractivity and refractivity gradient.

– Rec. P.837-4: "Characteristics of precipitation for propagation modelling". This recommendation contains a rain intensity prediction procedure suitable for providing the information needed for quantifying the effect of rain on radio systems. Also provided for easy reference are maps indicating the rain intensity exceeded for 0.01% of the time.

Recommendations associated with Question ITU-R 203-3/3:

– Rec. P.1406: "Propagation effects relating to terrestrial land mobile service in the VHF and UHF bands". This recommendation provides information on various aspects of propagation, which should be taken into account in the design and planning of terrestrial land mobile services.

– Rec. P.1410-2: "Propagation data and prediction methods required for the design of terrestrial broadband and millimetric radio access systems operating in a frequency range of about 20-50 GHz". This Recommendation addresses aspects of millimetric radiowave propagation related to the delivery of broadband services in an access network. Information is given on the effects of buildings, vegetation and precipitation as they affect area coverage, and also on channel distortion.

– Rec. P.1546-2: "Methods for point-to-point area predications for terrestrial services in the frequency range 30 MHz to 3000 MHz. This Recommendation represents the "main" prediction method for the land-mobile and broadcasting services in the VHF and UHF bands.

Recommendations associated with Question ITU-R 206-3/3:

– Rec. P.618-8: "Propagation data and prediction methods required for the design of earth-space telecommunication systems". This Recommendation contains data and prediction methods for evaluating the propagation effects that can occur on a slant path and which need to be taken into account in the design and planning of earth-space telecommunication systems.

– Rec. P.679-3: "Propagation data required for the design of broadcasting-satellite systems". Complementing Recommendation ITU-R P.618-8, this Recommendation contains data and prediction methods for evaluating the propagation effects that particularly apply in the design and planning of broadcast-satellite systems.

3 Handbooks and/or the equivalent

3.1 Issued:

3.1.1 "Curves for radiowave propagation over the surface of the Earth" (1991).

3.1.2 "Radiometeorology" (1996).

3.1.3 "Radiowave propagation information for predictions for Earth-to-space path communications" (1996).

3.1.4 "The ionosphere and its effects on terrestrial and earth-to-space radiowave propagation from LF to SHF" (1997).

3.1.5 "Terrestrial land mobile radiowave propagation in the VHF/UHF bands"(2002).

3.2 Under preparation:

3.2.1 "Radiowave propagation information for predictions for signal levels likely to cause interference and for evaluation of coordination distances".

3.2.2 "Radiowave propagation information for predictions for terrestrial path communications".

STUDY GROUP 4

Fixed-satellite service

Scope

Systems and networks for the fixed-satellite service and inter-satellite links in the fixed-satellite service, including associated tracking, telemetry and telecommand functions.

1 Questions

Former Question 43/4 "Use of small earth stations in the fixed-satellite service in the event of natural disasters, epidemics, famines and similar emergencies for warning and relief operations" has been completed by issuing Recommendation ITU-R S.1001, thus answering this Question.

Question 252/4 – Criteria for the protection of Appendix 30B plan against interference from N-GSO systems.

Question 269/4 – Spectrum requirements and technical and operational characteristics of user terminals (VSAT) for global broadband satellite systems.

2 Recommendations (S series)

Rec. S.1001: "Use of systems in the fixed-satellite services in the event of natural disasters and similar emergencies for warning and relief operations".

3 Handbooks and/or the equivalent

3.1 Issued:

3.1.1 "Satellite communications" (fixed-satellite service second edition 1988). With this Handbook are also three supplements:

– Supplement 1: "Effect of WARC ORB-88 Decisions" (1991).

– Supplement 2: "Computer programme for satellite communications" (1993).

– Supplement 3: "VSAT systems and earth stations" (1995).

3.1.2 "Satellite News Gathering (SNG) user's guide" (1996).

3.1.3 A third revised edition of the Handbook on Satellite Communications, including all new technical and operational developments, was published in 2002.

3.2 Under preparation:

None.

4 Remark

This Study Group, with Study Group 9 (Fixed Services) created a Joint Working Party to deal with all frequency-sharing issues within the mandate of both Study Groups.

STUDY GROUP 6

Broadcasting services

This is a Study Group created by decision of the Radiocommunication Assembly 2000 to merge the former Study Group 10 (Sound broadcasting) and Study Group 11 (Television broadcasting) into one Study Group.

Scope

Radiocommunication broadcasting (terrestrial and satellite), including vision, sound, multimedia and data services principally intended for delivery to the general public.

Broadcasting makes use of point-to-everywhere information delivery to widely available consumer receivers. When return channel capacity is required (e.g. for access control, interactivity, etc.), broadcasting typically uses an asymmetrical distribution infrastructure that allows high capacity information delivery to the public with lower capacity return link to the service provider. The production and distribution of programs (vision, sound, multimedia, data, etc.) may employ contribution circuits among studios, information gathering circuits (ENG, SNG, etc.), primary distribution to delivery nodes, and secondary distribution to consumers.

The Study Group, recognizing that radiocommunication broadcasting extends from the production of programmes to their delivery to the general public, as detailed above, studies those aspects related to production and radiocommunication, including the international exchange of programs as well as the overall quality of service.

N.B. Question 11-1/2 will cover all Questions of particular interest to the development sector, in particular the activities of Working Party 6E.Former Task Group 6/8 prepared the ITU-R report to RRC-04 (Doc. 3) finishing its work in September 2003.

1 Handbooks and/or the equivalent

1.1 Issued:

1.1.1 Television systems used around the world (Still availed reference for developing countries)*.

1.1.2 Compatibility between the broadcasting service in the band about 87-208 MHz and the aeronautical services in the band 108-137 MHz (1991).

1.1.3 Digital television signals, coding and interfacing within studios (1995).

1.1.4 Subjective assessment methodology in television (1996).

1.1.5 Technical specifications of ITU-R teletext systems (1999).

1.1.6 HF Broadcasting system design (1999).

1.1.7 LF/MF system design (2001).

1.1.8 Terrestrial and satellite digital sound broadcasting to vehicular, portable and fixed receivers in the VHF/UHF bands (2002).

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* Updated information can be found in Recommendation ITU-R BT.470, Conventional Television Systems (1998) and Report ITU-R BT.2043, Analogue television systems currently in use throughout the world (2004).

1.1.9 Digital terrestrial television broadcasting in the VHF/UHF bands (2002).

1.2 Under preparation:

A new report on the transition from analogue to digital broadcasting.

STUDY GROUP 7

Science services

Scope

1 Systems for space operation, space research, earth exploration and meteorology, including the related use of links in the inter-satellite service.

2 Radio astronomy and radar astronomy.

3 Dissemination, reception and coordination of standard-frequency and time-signal services, including the application of satellite techniques, on a worldwide basis.

1 Questions

None was selected due to the particular scope of this Study Group.

2 Recommendations (SA, RA and TF series)

None.

3 Handbooks and/or the equivalent

3.1 Issued:

3.1.1 "Radio astronomy" (2003). This Handbook is intended to be used by the spectrum managers to understand the frequency sharing issues and their implications.

3.1.2 "The selection and use of precise frequency and time systems" (1997). This Handbook explains the relation between precision frequencies and standard timing for spectrum managers.

3.1.3 "Space research communications (2002)". This Handbook addresses the use of radio spectrum by the research service and discusses related aspects of spectrum management necessary for sharing with other radiocommunication services.

3.1.4 "Use of radio spectrum for meteorology (2002)". This Handbook provides technical information on the use of radio spectrum by meteorological systems in the meteorological satellite and meteorological aids services. Such systems include meteorological satellite, radio sources, weather radars, wind profiler radars and space-borne remote sensors.

3.2 Under preparation:

3.2.1 "Use of radio spectrum for meteorology". This is a revision of the 2002 edition; publication is expected for the end 2005 beginning 2006.

3.2.2 "Satellite Time and Frequency Transfer and Dissemination". The handbook will address, inter alia, navigation satellite systems, timescales, international timekeeping and reference systems, geodetic systems, and techniques and receiving equipment for time and frequency transfer. Publication is expected for 2005.

STUDY GROUP 8

Mobile, radiodetermination, amateur and related satellite services

Scope

Systems and networks for the mobile, radiodetermination and amateur services, including related satellite services.

1 Questions

Question 48-5/8 – Techniques and frequency usage in the amateur service and amateur-satellite service.

Question 77-5/8 – Adaptation of mobile radiocommunication technology to the needs of developing countries (Question 18/2 will report on this Question).

Question 209-1/8 – Contributions of the mobile and amateur services and associated satellite services to the improvement of disaster communications.

Question 218/8 – Essential technical requirements of mobile earth stations for global and regional geostationary mobile-satellite service systems in the band 1-3 GHz.

Question 228/8 – Future submission of satellite radio transmission technologies for International Mobile Telecommunications-2000 (IMT-2000) (Question 18/2 will report on this Question).

Question 229/8 – Future development of IMT-2000 and systems beyond IMT-2000 (Question 18/2 will report on this Question).

2 Recommendations (M series)

2.1 Question 48/8

– Rec. M.1041-2: “Future Amateur Radio System (FARS)”.

– Rec. M.1042-2: “Disaster communications in the amateur and amateur – satellite services”.

– Rec. M.1043-2: “Use of the amateur and amateur satellite services in the developing countries”.

– Rec. M.1044-2: “Frequency sharing criteria in the amateur and amateur satellite services”.

2.2 Question 209/8

– Rec. M.830 issued 1992: “Operational procedures in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz which are used for distress and safety purposes as specified for GMDSS”.

– Rec. 1042-2 issued 2003: “Disaster communications in the amateur and amateur satellite services”.

2.3 Question 209/8

– Rec. M.830: "Operational procedures in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz which are used for distress and safety purposes as specified for GMDSS" (1992).

– Rec. 1042-2: Disaster communications in the amateur and amateur satellite services" (2003).

2.4 Question 218/8

– Rec. M.1343: "Essential technical requirements of mobile earth stations for global non-geostationary mobile satellite service systems in the band 1-3 GHz".

– Rec. M.1480: The same as M.1343, but for mobile earth station of geostationary mobile satellite systems which are implementing the GMPCS M.o.U. arrangements in parts of the frequency band 1-3 GHz.

3 Handbooks and/or the equivalent

3.1 Issued:

3.1.1 "Land mobile" (including wireless access). Volume I, (second edition (2001).

3.1.2 Land Mobile (including wireless access). Volume II (Principles and approaches on evolution to IMT-2000/FPLMTS) of this Handbook issued in 1998.

3.1.3 "Mobile-satellite communications". Also a very important Handbook to the Development Sector taking into consideration its relevance also to the rural communications. This handbook was published in 2002.

3.1.4 "Deployment of IMT-2000 Systems", developed as a joint activity between the three ITU Sectors was published by the end of 2003.

3.1.5 Supplement 1 to the Handbook on Deployment of IMT-2000 systems – Migration to IMT-2000 systems (to be published in early 2005).

3.2 Under preparation:

3.2.1 "Land mobile" (including wireless access), Volume IV (Intelligent Transport Systems), under preparation.

3.2.2 "Land mobile" (including wireless access), Volume III (Dispatch systems), under preparation.

STUDY GROUP 9

Fixed services

Scope

Systems and networks of the fixed service operating via terrestrial stations.

1 Questions

Question 125-6/9 – Point-to-multipoint fixed wireless systems used in access or back-haul networks.

Question 236/9 – Fixed wireless systems providing broadband wireless access.

Question 212-2/9 – System characteristics and frequency bands for fixed service systems utilizing "high altitude platform stations".

2 Recommendations (F series)

2.1 Question 125/9

Rec. F.701-2: "Radio frequency channel arrangements for analogue and digital point-to-multipoint radio systems operating in frequency bands in the range 1 350-2 690 GHz (1.5, 1.8, 2.0, 2.2, 2.4 and 2.6 GHz)".

Rec. F.1098-1: "Radio frequency channel arrangements for fixed wireless systems in the range 1 900-2 300 MHz".

Rec. F.1242: "Radio frequency channel arrangements for digital radio systems operating in the range 1 350-1 530 MHz".

Rec. F.1243: "Radio frequency channel arrangements for digital radio systems operating in the range 2 290-2 670 MHz".

Rec. F.755-2: "Point-to-multipoint systems used in the fixed service".

Rec. F.756: "TDMA point-to-multipoint systems used as radio concentrators".

Rec. F.1104: "Requirements for point-to-multipoint radio systems used in the local grade portion of an ISDN connection".

Rec. F.1488: "Frequency block arrangements for FWA systems in the range 3 400-3 800 MHz".

2.2 Former Question 140/9

Rec. F.757-3: "Basic system requirements and performance objectives for FWA using mobile-derived technologies offering basic telephone services".

Rec. F.1399-1: "Vocabulary of terms for wireless access".

Rec. F.1400: "Performance and availability requirements and objectives for FWA to PSTN".

Rec. F.1401: “Frequency bands for FWA systems, and the identification methodology”.

Rec. F.1402: “Frequency sharing criteria between a land mobile wireless access system and FWA systems using the same equipment type as the mobile wireless access system”.

Rec. F.1490: “Generic requirements for FWA systems”.

2.3 Question 212-1/9

Rec. F.1500: “Preferred characteristics of systems in the fixed service using HAPS operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz”.

Rec. F.1501: “Coordination distance for systems in the FS involving HAPS sharing the 47/48 GHz bands with other FS systems”.

2.4 Former Question 146/9

Rec. F.1111-1: “Improved Lincompex systems for HF radio-telephone circuits”.

2.5 Former Question 208/9

Rec. F.1335: “Technical and operational considerations in the phased transitional approach for bands shared between the mobile satellite service and the fixed service of 2 GHz”.

Rec. F.1405: “Guidance to facilitate coordination and use of frequency bands shared between the FS and MSS in the frequency range 1-3 GHz”.

3 Handbooks and/or the equivalent

3.1 Issued:

3.1.1 “Digital radio-relay systems”. A very important handbook, addressing also the needs of developing countries, issued in 1996.

3.1.2 “Frequency – adaptive communication system and networks in the MF/HF bands” issued in 2002, at the request of the Development Sector.

3.2 Under preparation:

3.2.1 “Tutorial supplement to the HF Handbook mentioned in § 3.1.2, at the request of the Development Sector.

ANNEX 1

PART 2

ITU-T[2] Questions of particular concern to developing countries

Mission of the Sector

The ITU-T fulfils the purposes of the ITU relating to telecommunications standardization by studying technical, operating and tariff questions and adopting on them with a view to standardizing telecommunications on a worldwide basis.

N.B.

1 In accordance with the ITU Convention, the World Telecommunication Standardization Assembly (WTSA) was convened in Florianópolis, Brazil, in the period 5-14 October 2004. Among its major decisions were the new study group structure (number, mandate and management), as well as the adoption of questions to be studied by the new structure of the study groups.

2 As a result of the decisions adopted by WTSA-04, a corresponding revision of Part 2 of this report was carried.

3 The ITU-T Study Groups complement the adopted Recommendations, normative texts, by supplements, non-normative texts, belonging to each series of Recommendations identified by a number for each Recommendation and a letter prefix. Appendix 1 attached at the end of this Part clarifies the identification and layout of ITU-T Recommendations. Appendix 2 attached at the end of this Part clarifies the understanding of supplements.

4 The ITU-T Sector organizes since 2001 a series of workshops and seminars, which are of great value to developing countries, and since 2005 has initiated a stronger campaign for the promotion of standards by means of a new newsblogs-based information centre called “Lighthouse” and the initiative with discussion forums, called Technology Watch, to investigate new emerging technologies with the aim to provide new studies for standardization. For more information, please consult the following website:

http://www.itu.int/ITU-T/worksem/index.html

http://www.itu.int/ITU-T/lighthouse/index.phtml

http://www.itu.int/ITU-T/techwatch/index.asp

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2 For more detailed information, please consult: http://www.itu.int/ITU-T/index.html.

STUDY GROUP 2

Operational aspects of service provision, networks and performance

Study Group 2 is the lead Study Group for Service definition numbering and routing (including all types of mobile services) and for numbering and routing.

Responsible for studies relating to:

- Principles of service provision, definition and operational requirements of service emulation;
- Numbering, naming, addressing requirements and resource assignment including criteria and procedures for reservation and assignment;
- Routing and interworking requirements;
- Human factors;
- Operational aspects of networks and associated performance requirements including traffic management, quality of service (traffic engineering, operational performance and service measurements);
- Operational aspects of interworking between traditional telecommunication networks and evolving networks;
- Evaluation of feedback from operators, manufacturing companies and users on different aspects of network operation.

Its role and mandate was strengthened in WTSA-04.

1 Questions

Question 1/2 – Applications of numbering, naming and addressing plan telecommunications and services and operational aspects of numbering, including service definition.

Relevant Recommendations:

- E.162: “Capability of seven digit analysis for international E.164 numbers at time T” (new).
- E.164: “The international public telecommunication numbering plan”.
- E.164-1: “Criteria and procedures for the reservation, assignment and reclamation ICS”.
- E.164-2: “Numbering resources for trial”.
- E.164-3: “Principles, criteria and procedures for the assignment and reclamation of E.164 country codes and associated identification codes ICS”.
- E.165-1: “Use of escape code ‘0’ within the E.164 numbering plan during the transition period to implementation of number plan interworking (NPI) mechanism”.
- E.166/X.122: “Numbering plan interworking for the E.164 and X.121 numbering plans”.
- E.169: “Application of E.164 numbering plan for universal international numbers for international telecommunications services using country codes for global service”.

- E.169.1: "Application of Recommendation E.164 numbering plan for universal international freephone numbers for international freephone service".
- E.169.2: "Application of Recommendation E.164 numbering plan for universal international premium rate numbers for the international premium rate service".
- E.169.3: "Application of Recommendation E.164 numbering plan for universal international shared cost numbers for the international shared cost service".
- E.190: "Principles and responsibilities for the management, assignment and reclamation of E-Series international numbering resources".
- E.191: "B-ISDN addressing".
- "E.195: "ITU-T international numbering resource administration".
- E.212: "Network operational principles for future public mobile systems and services".
- F.16: "Global virtual network services".
- E.117: "Terminal devices used in connection with the public telephone service (other than telephone)".
- E.152: "International free phone service" (revision).
- E.153: "Home country direct".
- E.168: "Application of E.164 numbering plan for UPT".

Question 3/2 – Human factors related for improvement of the quality of life through international telecommunications.

Relevant Recommendations:

- F.902: "Interactive services design guidelines".
- E.135: "Human factors aspects of public terminals for people with disabilities".
- F.910: "Procedures for designing, evaluating and selecting symbols, pictograms and icons".
- E.121: "Pictograms, symbols and icons to assist users of the telephone service".

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 In the past many useful ITU-T documents were prepared by the former ITU-T Study Group 1[1], mainly to facilitate the operational activities of the telecommunication services, e.g.: Bureaufax tables, gentex tables, codes and abbreviations for the use of the international telecommunication services, etc. In addition, the Appendix 1, attached to this report, contains a list of valid Supplements to those Recommendations pertinent to former Study Group 1 (i.e. E- and F-series), as well as those for Study Group 2.

2.1.2 "Instructions for the international telephone service" (1993).

2.1.3 A new Handbook for quality of service was published in 2005 in English. Other linguistic versions are under preparation.

2.2 Under preparation:

None.

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[1] Responsible mainly for Service Definition (is now part of the responsibility of this Study Group).

STUDY GROUP 3

Tariff and accounting principles including related telecommunications economic and policy issues

Study Group 3 is responsible for studies related to tariff and accounting principles for international telecommunications services and study of related telecommunication economic and policy issues. To this end, Study Group 3 should in particular foster collaboration among its Members with a view to the establishment of rates at level as low as possible consistent with an efficient service and taking into account the necessity for maintaining independent financial administration of telecommunication a sound basis.

Study Group 3 is the lead Study Group for implementing both revised Resolution 21 and 22 of the ITU Plenipotentiary Conference (Marrakech, 2002) as regards the Standardization Sector:

Res. 21 on "Special measures concerning alternative calling procedures on international telecommunication networks"; and

Res. 22 on "Apportionment of revenues in proving international telecommunications services".

1 Questions

Question 1/3 – Development of charging and accounting/settlement mechanisms for telecommunications services, including adaptation of the D-series Recommendations to the evolving market environment.

Relevant Recommendations:

- D.50: "International Internet connection".
- D.120: "Charging and accounting principles for the automated telephone credit card service".
- D.140: "Accounting rate principles for international telephone services" with five annexes (A, B, C, D and E).
- D.155: "Guiding principles governing the apportionment of accounting rates in the intercontinental telephone relations".
- D.170: "Monthly telephone and telex accounts".
- D.190: "Exchange of international traffic accounting data between Administrations using electronic data interchange (EDD) techniques" (revision).
- D.201: "General principles regarding call-back practices".

Question 2/3 – Study of economic and policy factors relevant to the efficient provision of international telecommunication services.

Relevant Recommendations:

None.

Question 3/3 – Regional studies for the development of cost models together with related economic and policy issues (former Questions 13 and 14 and the basis for the work of the regional tariff groups TAF, TAL, TAS and TEUREM).

Relevant Recommendations:

- D.300R: "Determination of accounting rate shares in telephone relations between countries in Europe and the Mediterranean Basin".
- D.301R: as D.300R, but for telex.
- D.302R: as D.300R, but for telegrams.
- D.303R: as D.300R, but for circuits of sound and television programme transmission.
- D.306R: as D.300R, but for public-switched data transmission network.
- D.307R: "Renumeration of digital systems and channels used in telecommunication relations between the countries of Europe and the Mediterranean Basin".
- D.310R: "Determination of rentals for the lease of international programme (sound and television) circuits and associated control circuits for the private service in relation between countries in Europe and the Mediterranean basin".
- D.400R: "Accounting rates applicable to direct traffic relations in voice telephony between countries in Latin America and the Caribbean".
- D.500R: "Accounting rates applicable to telephone relations between countries in Asia and Oceania" (also a Supplement was issued to this Recommendation on method of carrying out the cost price study in Asia and Oceania).
- D.501R: The same as D.500R, but for telex.
- D.600R: "Determination of accounting rate shares and collection charges in telephone relations between countries in Africa" (revision).
- D.601R: The same as D.600R but for telex relations.
- D.602R: The same as D.600R but for application of "sender pays transit" principle in transit relations.
- D.603R: Minimizing collection charges on inter African calls.
- D.604R: Preferential rates in telecommunication relations between countries in Africa Question 4/3 – Terms and definitions of Recommendations dealing with tariff and accounting principles.

Relevant Recommendation:

- D.000: "Terms and definitions for the Series D Recommendations" (revision).

2 Handbooks and/or the equivalent

Three supplements (see attached supplement in Appendix 1) and a handbook on costing methodologies.

3 Conclusion

It is worth mentioning that a sufficient number of delegations from developing countries participate actively in the work of this Study Group, which is not the case for the rest of the ITU-T Study Groups, where the participation of delegations from developing countries is minimal, if non-existent in some cases.

STUDY GROUP 4

TMN and network maintenance

Responsible for studies regarding the management of telecommunication services, networks, and equipment, including support for next-generation networks (NGN) and the application and evolution of the telecommunication management network (TMN) framework. Additionally, it is responsible for other telecommunication management studies relating to designations, transport-related operations procedures, and test and measurement techniques and instrumentations. The SG 4 is the lead Study Group on TMN.

1 Questions

Question 1/4 – Terms and definitions.

Relevant Recommendation:

- M.60: "Maintenance terminology and definitions".

Question 3/4 – Transport network and service operations procedures for performance and fault management.

Relevant Recommendations:

- M.2100: "Performance limits for bringing-into-service and maintenance of international PDH paths, sections and transmission systems".
- M.2101.1: "Performance limits for bringing-into-service and maintenance of international SDH paths and multiplex sections".
- M.2110: "Bringing-into-service of international PDH paths, sections and transmission systems and SDH paths and multiplex sections".

Question 4/4 – Test and measurement techniques and instrumentation for use on transmission systems and their constituent parts.

Relevant Recommendations:

- O.1: "Scope and application of measurement equipment specifications covered in the O-series Recommendations" (revision).
- O.33: "Automatic equipment for rapidly measuring stereophonic pairs and monophonic sound programme circuits, links and connections".
- O.41: "sophometer for use on telephone-type circuits".
- O.133: "Equipment for measuring the performance of PCM encoders and decoders".
- O.150: "General requirements for performance measurements on digital transmission equipment" (revision).
- O.181: "Equipment to assess performance on STM-N interfaces".
- O.191: "Equipment to assess ATM layer cell transfer performance".
- Q.201: Q-factor test equipment to estimate the transmission performance of optical channels.

Question 6/4 – Management principles, and architecture.

Relevant Recommendations:

- M.3000: “Overview of TMN Recommendations”.
- M.3010: “Principles for a Telecommunications Management Network”.
- M.3013: “Considerations for Telecommuniaction Management Network”.
- M.3600: “Principles for the management of ISDNs”.
- M.3610: “Principles for applying the TMN concept to the management of B-ISDN”.

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 “Quality of service and network performance” (1993).

2.2 Under publication:

None.

STUDY GROUP 5

Protection against electromagnetic environment effects

Responsible for studies relating to protection of telecommunication networks and equipment from interference and lightning. Also responsible for studies to electromagnetic compatibility (EMC), to safety and to health effects connected with electromagnetic fields produced by telecommunication installations and devices, including cellular phones.

1 Questions

Question 5/5 – Lighting protection of fixed, mobile and wireless systems.

Relevant Recommendations:

- K.25: "Protection of optical fibre cables".
- K.39: "Risk assessment of damages to telecommunication sites due to lightning discharges".
- K.40: "Protection against LEMP in telecommunication centres".
- K.46: "Protection of telecommunication lines using metallic symmetric conductors against lightning induced surges".
- K.47: "Protection of telecommunication lines using metallic conductors against direct lightning discharges".
- K.56: "Protection of radio base stations against lightning discharges".

Question 9/5 – Interference produced by power lines and electrified railway lintes into telecommunication networks.

Relevant Recommendations:

- K.54: "Conducted immunity test method and level at fundamental power frequencies".
- K.57: "Protection measures for radio base stations sited on power line towers".

Question 11/5 – Safety in the telecommunications networks.

Relevant Recommendations:

- K.50: "Safe limits of operating voltages and currents for telecommunication systems powered over the network".
- K.51: "Safety criteria for telecommunication equipment".
- K. 64: "Safe working practices for outside equipment installed in particular environments".

Question 13/5 – Protective components and assemblies.

Relevant Recommendations:

- K.11: "Principles of protection against over voltages and over currents".
- K.36: "Selection of protective devices".

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 "CCITT Directives concerning the protection of telecommunication lines against harmful effects from electrical power and electrified railway lines:

Volume I: "Design construction and operational principles of telecommunications, power and electrified railway facilities" (revision 1990).

Volume II: "Calculating induced voltages and currents in practical cases" (revision 1999).

Volume III: "Capacitive inductive and conductive coupling: physical theory and calculation method" (revision 1999).

Volume IV: "Inducing currents and voltages in electrified railway systems" (revision 1990).

Volume V: "Inducing currents and voltages in power transmission and distribution systems" (revision 1990).

Volume VI: "Danger and disturbance" (revision2004, not yet published).

Volume VII: "Protective measures and safety precautions" (revision 1990).

Volume VIII: "Protective devices" (revision 1990).

Volume IX: "Testing methods and measuring apparatus" (revision 1990).

2.1.2 The lightning Handbook composed of 10 Chapters "The protection of telecommunication lines and equipment against lightning discharges". Originally published in 1974, composed of five chapters, then chapters 6, 7 and 8 appeared in 1978, and chapters 9 and 10 were issued in 1994 (for details of these chapters, refer to the Guide 2.1.3).

2.1.3 Handbook, entitled: "Guide to the use of ITU-T publications produced by SG 5 aimed at achieving electromagnetic compatibility and safety" was issued in 2002, which is of great use for developing countries. This Handbook is updated regularly, the last version was updated in the SG5 meeting in June.

2.1.4 A Handbook on interference measuring techniques was issued in 2001.

2.1.5 The new handbook "Earthing and bonding" was approved in June 2003 (to replace the old handbook "Earthing of telecommunication installations" issued in 1976).

2.1.6 The "Handbook of mitigation measures for telecommunications installations" was approved in December 2004 and is under publication.

2.2 Under preparation:

2.2.1 Revisions of Volumes V and VIII of the Directives are planned for this study period.

2.2.2 Possible additional chapters to the handbook "Protection of telecommunication lines and equipment against lightning discharges" are under preparation. Publishing date is not known yet.

STUDY GROUP 6

Outside plant and related indoor installations

Responsible for studies on the outside plant and related indoor installations covering:

- construction of all types of terrestrial cable for public telecommunications, including marinized terrestrial cables and the associated hardware (closures, connectors, cabinets, poles, etc.);
- construction and maintenance of the telecommunication infrastructure. This includes interoffice, access and related building and home cable and hardware installations;
- installation, jointing and termination of cables;
- protection of the environment from the deployment of telecommunication related cable, hardware and equipment in the outside plant;
- protection from corrosion and other forms of damage from environment impact, except electromagnetic processes, of cables for public telecommunications and associated structures;
- protection against fire of telecommunication buildings and outside plant;
- procedures for safety of personnel.

1 Questions

Question 2/6 – Infrastructure and installation considerations for cables and equipment.

Relevant Recommendations:

- Rec. L.38: "Use of trenchless techniques for the construction of underground infrastructures for telecommunication cable installation".
- L.56: Installation of optical fibre cable along railways.
- L.57: Air-assisted installation of optical fibre cables.

Question 6/6 – Optical fibre cable network maintenance (former Question 8 with updating).

Relevant Recommendations:

- Rec. L.53: Optical fibre maintenance criteria for access networks".

Question 8/6 – Development of optical networks in the access area.

Relevant Recommendations:

- Rec. L.42: "Extending optical fibre solutions into the access network".
- Rec. L.52: "Deployment of passive optical network (PON)".

Part of these Questions are answered by handbooks.

Question 9/6 – Joint closures, termination and distribution frames, outdoor enclosures and passive components.

Relevant Recommendations:

- L.13: "Sheath joints and organizers of optical fibre cables in the outside plant".
- L.51: "Passive node elements for fibre optic networks – General principles and definitions for characterization and performance evaluation".

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 “Preservation of wooden poles carrying overhead telecommunication lines” (1974).

2.1.2 “Jointing of plastic-sheathed cable” (1978).

2.1.3 “Jointing of telecommunication cable conductors” (published 1982).

2.1.4 “Outside plant technologies for public networks” (published 1991).

2.1.5 “Optical fibre system planning Guide published 1989”.

2.1.6 “Application of computers and micro-processors to the construction, installation and protection of telecommunication cables” (published in 1994).

2.1.7 “Construction, installation, jointing and protection of optical fibre cables” (published in 1994).

2.1.8 “Marinized terrestrial cables” and “Fire protection”.

2.1.9 “Protection of telecommunication buildings from fire”.

2.2 Under preparation:

2.2.1 “Updating of the Handbook”, under 2.1.6.

STUDY GROUP 9

Integrated broadband cable networks and television and sound transmission

Lead Study Group on integrated broadband cable and television networks. Responsible for studies relating to:

- Use of cable and hybrid networks, primarily designed for television and sound programme delivery to the home, as integrated broadband networks to also carry voice or other time critical services, video on demand, interactive services, etc.
- Use of telecommunication systems for contribution primary distribution and secondary distribution of television, sound programmes and similar data services.

Study Group 9 will be responsible for coordination on broadcasting with Study Group 6 in the Radiocommunication Sector.

N.B.: Question 11-1/2 will cover any Question of particular interest to the Development Sector.

STUDY GROUP 11

Signalling requirements and protocols

Responsible for studies relating to signalling requirements and protocols for Internet Protocol (IP) related functions, some mobility related functions, multimedia functions for networks including convergence towards NGN, and enhancements to existing Recommendations on access and internet work signalling protocols of BICC, ATM, N-ISDN and PSTN.

It should be noted that for signalling for support of International Emergency Preference Scheme (IEPS), SG11 also produced (in the Study period 2001-2004) Amendments to existing Q-series Recommendations (Q.761, Q.762, Q.763, Q.764, Q.1902.1, Q.1902.2, Q.1902.3, Q.1902.4, Q.2931, Q.2630.3, and Q.1950). SG11 continues to work on signalling aspects and this important topic of IEPS and a set of further draft Amendments have been produced during the current Study Period (2005-2008); these draft Amendments are under consideration of the Traditional Approval Process (TAP) (TSB Circular 47 of 21 September 2005) as they have regulatory implications.

N.B.: Any proposals to possibly integrate Study Group 11 and SG 19 with SG 13 will be considered by TSAG in two years from WTSA-04 (October 2004).

1 Questions

All the new Questions (8 in total) are addressing mainly signalling requirements and protocols including the support of bearer independent call control (BICC), only one Question (6/11) will assist in the preparation of a handbook on the deployment of packet based networks. All Recommendations resulted from the study of these Questions are relevant to manufacturing.

2 Recommendations

It is worth mentioning some of the still valid valuable Recommendations of the Q series:

- Q.9: Vocabulary of switching and signalling terms.
- Q.13: International telephone routing plan.
- Q.500: Digital local, combined, transitional international exchanges – Introduction and field of application.
- Q.55: Transmission – Characteristics of digital exchanges.
- Q.601: Interworking of signalling systems – General.
- Q.700: Introduction to CCITT signalling No. 7.
- Q.933: Digital subscriber signalling No. 1 (DSSI).
- Q.1000: Structure of the Q.1000 – Series recommendations for public land mobile networks.
- Q.1200-Series – Intelligent Network.
- Q.1900-Series – Bearer Independent Call Control.
- Q.2931: Digital subscriber signalling system No. 2.

NOTE – In addition to about 2000 Recommendations of Study Group 11, many Q-Series supplements represent a valuable source of information to those interested in the work of Study Group 11 (e.g. Q-Series Supplement 51 on Signalling requirements for IP-QoS).

3 Handbooks and/or equivalent

3.1 Issued:

3.1.1 "Guidelines for preparing and conducting field trials of digital switching equipments" (1987).

3.1.2 "ISDN field trial guidelines" (1991).

3.1.3 "Guidelines for implementing a signalling system No. 7 network" (1991).

3.2 Under preparation:

In close collaboration with SG 13, a new handbook on "The deployment of packet based networks".

STUDY GROUP 12

Performance and quality of service

Responsible for Recommendations on the end-to-end transmission performance of terminals and networks, in relation to the perceived quality and acceptance by users of text, data, speech and multimedia applications.

Although this work includes the related transmission implications of all networks and all telecommunication terminals, a special focus is given to IP QoS, interoperability and implications for NGN, and also includes work on performance and resource management.

1 Questions

Question 10/12 – Transmission planning and performance considerations for voiceband, data and multimedia services.

Relevant Recommendations:

- G.113: "Transmission impairments due to speech processing".
- G.175: "Transmission planning for private/public network interconnection of voice traffic".

Relevant Recommendation:

- G.177: "Transmission planning for voiceband services over IP connections".

NOTE:

a) The G100 series of Recommendations are essential Recommendations for the quality of service end-to-end transmission performance of networks and terminals.

b) The complementary P series of Recommendations (60 in total) and corresponding supplements, complement those essential Recommendations mentioned in a. above.

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 "Telephonometry" (published 1993) and continuously amended.

2.2 Under preparation:

A Handbook of subjective testing procedures (STP) is planned for 2004.

STUDY GROUP 13

Next-generation networks

Responsible for studies relating to the architecture, evolution and convergence of next-generation networks including frameworks and functional architectures, signalling requirements for NGN, NGN project management coordination across study groups and release planning, implementation scenarios and deployment models, network and service capabilities, interoperability, impact of IPv6, NGN mobility and network convergence and public data network aspects.

1 Questions

Under its new mandate 14 Questions were adopted by the WTSA -04, and a new Question on NGN security has later been approved. 12 of these Questions are relevant to the NGN, the most important is Question 1/13 "Project Coordination and release planning for NGN, the answer to this Question will set as project description for NGN the basis for the work of all other 11 Questions for NGN. However, Questions 12/13, 13/13 and 14/13 are those which cover the old activities of SG17 in the past cycle.

Study Group 13 is the parent study group for one Focus Group developing standards for NGN, including those for migration from legacy networks to NGN.

N.B.: ITU-D Question 19/2 "Strategy for migration from circuit-switched networks to packet-switched networks" will report regularly on the progress of those Questions on NGN with the relevance to Question 19/2.

2 Handbooks and/or the equivalent

2.1 Issued:

Framework Recommendations on NGN:

Y.2001, General overview of NGN.

Y.2011, General principles and general reference model for next generation networks.

2.2 Under preparation:

None.

STUDY GROUP 15

Optical and other transport network infrastructures

Study Group 15 is the focal point in ITU-T for the development of standards on optical and other transport network infrastructures, systems, equipment, optical fibres and the corresponding control plane technologies to enable the evolution toward intelligent transport networks. This encompasses the development of related standards for the customer premises, access, metropolitan and long haul sections of communication networks.

1 Questions

Question 1/15 – Access network transport.

Question ITU-D 20-1/2 will cover all relevant recommendations on Digital Subscriber Line (DSL) transceivers.

Question 2/15 – Optical systems for fiber access networks.

Relevant Recommendation:

- G. 981: "PDH optical fibre systems for the local network" (new).
- G.983.1: "Broadband optical access systems based on Passive Optical Networks (PON)".
- G.983.2: "ONT management and control interface specification for ATM PON".

Question 6/15 – "Characteristics of optical systems for terrestrial transport networks".

Relevant Recommendations:

- G.957: "Optical interfaces for equipment and systems relating to the SDH".

Question 9/15 – Transport equipment and network protection/restoration.

Relevant Recommendations:

- G. 783: "Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks".
- G. 841: "Types and characteristics of SDH network protection architectures".

Former Question 15/15 – Characteristics and text methods of optical fibres and cables of the last cycle.

Relevant Recommendations:

- G.650.1: "Definitions and test methods for liner, deterministic attributes of single-mode fibre and cable".
- G.650.2: "Definitions and test methods for statistical and non-linear related attributes of single-mode fibre and cable".
- G.653: "Characteristics of a dispersion-shifted single-mode optical fibre cable".
- G.654: "Characteristics of a cut-off shifted single-mode optical fibre cable".

- G.655: “Characteristics of a non-zero dispersion shifted single-mode optical fibre cable”.
- G. 982: “Optical access networks to support services up to ISDN primary rate or equivalent bit rates” (new).
- G.692: “Optical interfaces for multichannel systems with optical amplifiers”.
- G.958: “Digital line systems based on the synchronous digital hierarchy for use on optical fibre cables”.

Former Question 18/15 – Characteristics of optical fibre submarine cable systems.

Relevant Recommendations:

- G.971: “General features of optical fibre submarine cable systems”.
- G.972: “Definition of terms relevant to optical fibre submarine cable systems”.

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 “Optical fibres for telecommunications” (published 1984).

2.1.2 “Optical fibre system planning guide” (published 1989).

2.1.3 “Transmission planning” (published 1993).

2.2 Under preparation:

None.

STUDY GROUP 16

Multimedia services, systems and applications

Responsible for studies relating to multimedia service capabilities, and application capabilities (including those supported for NGN). This encompasses multimedia terminals, systems (e.g. network signal processing equipment, multipoint conference units, gateways, gatekeepers, modems, and facsimile), protocols and signal processing (media coding).

1 Questions

Former Question C/15 – Multimedia applications and services (is now Question 22/16).

Relevant Recommendations:

- F.700: "Framework Recommendation for audiovisual/multimedia services".
- F.721: "Videotelephony teleservice for ISDN".
- F.723: "Videophone service in the Public Switched Telephone Network (PSTN)".

Question 1/16 – Multimedia systems, terminals and data conferencing.

Relevant Recommendations:

- H.222.0: "Information technology – Generic coding of moving pictures and associated audio information: Systems".
- H.310: "Broadband audiovisual communication systems and terminals".
- H.320: "Narrow-band visual telephone systems and terminal equipment" and other related Recommendations that compose the so-called H.320 system: H.320, H.221, H.224, H.230, H.242, H.243).
- H.321: "Adaptation of H.320 visual telephone terminals to B-ISDN environments".
- H.323: "Packet-based multimedia communications systems" (and related Recommendations that compose the so-called H.323 System: H.323, H.225.0, H. 254, H.246, H.283, H. 235, H.341, H.450 Series, H.460 Series and H.500 series).

Question 27/16 – Telecommunication services for emergency and disaster relief operations (TDR). Aspects of multimedia applications and services.

Relevant Recommendations:

ITU-D Question 14-1/2 will continue covering all relevant recommendations, in particular for e-health applications.

2 Handbooks and/or the equivalent

2.1 Issued:

None.

2.2 Under preparation:

None.

STUDY GROUP 17

Security, languages and telecommunication software

Responsible for studies relating to security, the applicaitno of open system communications including networking and directory, and for technical languages, the method for their usage and other issues related to the software aspects of telecommunication systems.

1 Questions

Question 2/17 – Numbering and routing for public data networks.

Relevant Recommendations:

- X.121: "International numbering plan for public data networks" (revision).
- X.122/E.166: "Numbering plan interworking for the E.164 and X.121 numbering plans" (revision joint responsibility with Study Group 2) (new).
- X.123: "Mapping between escape codes and TOA/NPI for E.164/X.121 numbering plan interworking during transition period" (new).

Question 9/17 – Directory services and systems.

Relevant Recommendations:

- X.500: "Information technology (I.T.), O.S.I, The directory: overview of concept models and services" (new).
- X.501: "I.T., OSI, The directory: models" (new).
- X.509: "I.T., OSI, The directory: authentication-framework" (new).
- X.511: "I.T., OSI, The directory: abstract service definition" (new).
- X.518: "I.T., OSI, The directory: procedures for distribution operation" (new).
- X.519: "I.T., OSI, The directory: protocol specifications" (new).
- X.520: "I.T., OSI, The directory: selected attribute types" (new).
- X.521: "I.T., OSI, The directory: selected object classes" (new).
- X.525: "I.T., OSI, The directory: replication".

Former Question 10/7 – Security services, mechanisms and protocols.

Relevant Recommendations:

- X.800: Security architecture for Open Systems Interconnection for CCITT applications.
- X.802: Information technology – Lower layers security model.
- X.803: Information technology – Open Systems Interconnection – Upper layers security model.
- X.810: Information technology – Open Systems Interconnection – Security frameworks for open systems: Overview.
- X.811: Information technology – Open Systems Interconnection – Security frameworks for open systems: Authentication framework.
- X.812: Information technology – Open Systems Interconnection – Security frameworks for open systems: Access control framework.
- X.813: Information technology – Open Systems Interconnection – Security frameworks for open systems: Non-repudiation framework.
- X.814: Information technology – Open Systems Interconnection – Security frameworks for open systems: Confidentiality framework.
- X.815: Information technology – Open Systems Interconnection – Security frameworks for open systems: Integrity framework.
- X.816: Information technology – Open Systems Interconnection – Security frameworks for open systems: Security audit and alarms framework.
- X.830: Information technology – Open Systems Interconnection – Generic upper layers security: Overview, models and notation.
- X.831: Information technology – Open Systems Interconnection – Generic upper layers security: Security Exchange Service Element (SESE) service definition.
- X.832: Information technology – Open Systems Interconnection – Generic upper layers security: Security Exchange Service Element (SESE) protocol specification.
- X.833: Information technology – Open Systems Interconnection – Generic upper layers security: Protecting transfer syntax specification.
- X.834: Information technology – Open Systems Interconnection – Generic Upper Layers Security: Security Exchange Service Element (SESE) Protocol Implementation Conformance Statement (PICS) proforma.
- X.835: Information technology – Open Systems Interconnection – Generic Upper Layers Security: Protecting transfer syntax Protocol Implementation Conformance Statement (PICS) proforma.
- X.841: Information technology – Security techniques – Security information objects for access control.
- X.842: Information technology – Security techniques – Guidelines for the use and management of trusted third party services.
- X.843: Information technology – Security techniques – Specification of TTP services to support the application of digital signatures.

  Information technology – Open Systems Interconnection – Security frameworks for open systems: Overview.

N.B.: In addition to the above, the following publications clarify many issues on security, in particular updating references to relevant Recommendations:

a) The second edition (October 2004) of the ITU-T manual on "Security in Telecommunications and Information Technology", which has been produced by ITU-T SG17 in collaboration with other study groups.

b) The updated ITU-D Report on "National Cyberspace security infrastructure", which has been prepared by ITU-D Question 9/2.

2 Handbooks and/or the equivalent

2.1 Issued:

2.1.1 CHILL found definition – Volume I.

2.1.2 CHILL found definition – Volume II.

2.1.3 Introduction to CHILL (1993).

2.2 Under preparation:

An update of the second edition of the ITU-T Manual on Security in Telecommunications and Information Technology.

STUDY GROUP 19

Mobile telecommunication networks

Responsible for studies relating to network aspects of mobile telecommunications networks, including International Mobile Telecommunications 2000 (IMT-2000) and beyond, wireless Internet, convergence of mobile and fixed networks, mobility management, mobile multimedia functions, internetworking, inter-operability and enhancements to existing ITU-T Recommendations on IMT-2000.

1 Questions

Question 4/19 – "Preparation of handbook on IMT-2000".

ITU-D Question 18/2 will continue covering all relevant activities of this Study Group.

2 Handbook and/or the equivalent

2.1 Issued:

Deployment of IMT-2000 systems (end 2003).

2.1.2 Under preparation:

Future amendments to the above-mentioned Handbook (which was developed by the three ITU Sectors) mainly by ITU-R Working Party 8/F and the former SSG, now becomes SG19.

APPENDIX 1

ITU-T Recommendation A.12

Identification and layout of ITU-T Recommendations

(2000; 2004)

1 Scope

The Telecommunication Standardization Advisory Group (TSAG) periodically reviews the methods of identifying and laying out Recommendations, as well as the Author's Guide for drafting ITU-T Recommendations, prepared and updated by the Telecommunication Standardization Bureau (TSB), providing thus detailed guidelines on format and style. This Recommendation provides principles that are applied in identifying and laying out Recommendations.

2 Identification and layout of Recommendations

2.1 All Recommendations of the ITU Telecommunication Standardization Sector (ITU-T) shall be numbered. The number of each Recommendation shall have a letter prefix referring to the series as well as a number identifying the particular subject in that series. The numbering shall be done in a manner which permits clear, unequivocal identification and facilitates electronic storage of information concerning the Recommendation. The Recommendation number shall be associated on the cover with the date of approval in the format YYYY. The month may be added if required for uniqueness.

2.2 The scope of the series identified by the letter shall be as follows:

A Organization of the work of ITU-T.

B *Not allocated.*

C *Not allocated.*

D General tariff principles.

E Overall network operation, telephone service, service operation and human factors.

F Non-telephone telecommunication services.

G Transmission systems and media, digital systems and networks.

H Audiovisual and multimedia systems.

I Integrated services digital network.

J Cable networks and transmission of television, sound programme and other multimedia signals.

K Protection against interference.

L Construction, installation and protection of cables and other elements of outside plant.

M Telecommunication management, including TMN and network maintenance.

N Maintenance: international sound-programme and television-transmission circuits.

O Specifications of measuring equipment.

P Telephone transmission quality, telephone installations, local line networks.

Q Switching and signalling.

R Telegraph transmission.

S Telegraph services terminal equipment.

T Terminals for telematic services.

U Telegraph switching.

V Data communication over the telephone network.

W *Not allocated.*

X Data networks, open system communications and security.

Y Global information infrastructure, Internet protocol aspects and next-generation networks.

Z Languages and general software aspects for telecommunication systems.

2.3 Recommendations in each series shall be classified in sections according to subject.

2.4 The title of each Recommendation should be concise (preferably no more than one line) but unique, meaningful and unambiguous. The details identifying the precise intent and coverage should be contained in the text where possible (e.g. under scope).

2.5 The date of formal approval of the Recommendation, the study group(s) responsible for its approval and a record of revisions shall be clearly indicated.

2.6 The author of a new or revised Recommendation shall provide, in front of the main body of the Recommendation, a summary as outlined in the "Author's Guide for drafting ITU-T Recommendations" prepared by TSB. The author may also provide other up-front elements such as background information and keywords as provided for in the Author's Guide.

2.7 The "Author's Guide for drafting ITU-T Recommendations" prepared by TSB should be applied in drafting new Recommendations, and, wherever practicable, in revising existing Recommendations.

APPENDIX 2

ITU-T Recommendation A.13

Supplements to ITU-T Recommendations

(2000)

1 Introduction

In the course of its studies, each study group deals with contributions and reports, which are distributed to those organizations that have registered for participation in the study group's work and Recommendations resulting from those studies reach a much wider audience. Normally, any information that is considered as merely illustrative or supplementary to a Recommendation should be included as a (non-integral) Appendix to that Recommendation, where it is useful to the wider audience. However, there are exceptional instances where separate publication of such information is warranted, in the form of Supplements to the Recommendations.

2 Supplements

The following general principles shall be applied by study groups for the development, approval, identification and revision of Supplements:

2.1 Before proposing any new or revised text as a Supplement, a study group or TSAG should ensure, in consultation with the Director, that:

i) the subject matter is within its mandate;

ii) there is a sufficient need for the information on a long-term basis;

iii) the text cannot be reasonably adapted for inclusion in an existing or new Recommendation (e.g. as an appendix);

iv) the text is sufficiently mature and that the text follows, as far as possible, the format of the "Author's Guide for drafting ITU-T Recommendations";

v) the text contains material which is supplementary to and associated with the subject matter of one or more Recommendations but is not essential to their completeness or understanding and implementation.

2.2 Supplements do not require approval according to Resolution 1 or Recommendation A.8 procedures; agreement by the study group or by TSAG (in case of a Supplement developed by TSAG) is sufficient.

2.3 Supplements should be limited in number and volume.

2.4 Supplements are only informative and are therefore not considered to be an integral part of any Recommendation(s). They do not imply any agreement on the part of ITU-T.

2.5 Each Supplement should be unambiguously identified by the series letter to which it is associated followed by a sequential number unique within that series.

2.6 Since Supplements are essentially reference material, no onus is implied on the issuing study group to update or to reissue Supplements. However, should reference to a Supplement be made in a Recommendation, the study group should review the applicability both of that reference and the Supplement at least once every four years, and take any necessary action.

2.7 Supplements should be included in databases along with ITU-T Recommendations, but may be deleted after consultation with the concerned study group if not reviewed or updated after a period of eight years.

2.8 To the extent practicable, Supplements will be published in a similar fashion to Recommendations, but with a lower priority, and taking into account market needs.

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