

QUESTION 9/2

Identify Study Group Questions in the ITU-T and ITU-R Sectors which are of particular interest to developing countries



ITU-D STUDY GROUP 2 2nd STUDY PERIOD (1998-2002)

Report

Telecommunication Development Bureau (BDT)

International Telecommunication Union



THE STUDY GROUPS OF THE ITU-D

The ITU-D Study Groups were set up in accordance with Resolution 2 of World Telecommunication Development Conference (WTDC) held in Buenos Aires, Argentina, in 1994. For the period 1998-2002, Study Group 1 is entrusted with the study of eleven Questions in the field of telecommunication development strategies and policies. Study Group 2 is entrusted with the study of seven 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.

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ITU-D

STUDY GROUP 2

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Report on Question 9/2

**Identify Study Group Questions in the ITU-T and ITU-R Sectors
which are of particular interest to developing countries****Introduction**

Question 9/2 as adopted by WTDC-98 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 have been adopted by the Study Group:

- a) Questions relevant to maintenance;
- b) Questions relevant to the acquisition of propagation data;
- c) Questions relevant to spectrum management;
- d) Questions relevant to the protection of telecommunication installation and equipment;
- e) Questions relevant to international telephone tariffs and accounting;
- f) other additional relevant Questions based on requests of the members of the Study Group during the life period of this Question.

Based on these general guidelines, the Study Group 2 meeting in September 1999 adopted the following additional guidelines for finalizing the list of selected Questions of particular interest to developing countries:

- 1) drop the selection of any Question which is under treatment directly by either ITU-D Study Group 1 or 2, or by one of the BDT Focus Groups, for example: Question 11/2 “Examine digital broadcasting technologies and systems, including cost/benefit analyses, assessment of demands on human resources, interoperability of digital systems with existing analogue networks, and methods of migration from analogue to digital technique”; Question 12/2 “Examine broadband communications over traditional copper wires on aspects of technologies, systems and applications” and WTDC-98 Resolution 9 “Participation of countries, especially developing countries, in frequency spectrum management”;
- 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 views of relevant counsellors in the other two ITU Sectors, in particular Dr. K. Hughes (representing the Radiocommunication Bureau) and Mr. P. Rosa, (representing the Telecommunication Standardization Bureau) in the final selection of these Questions.

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.

ANNEX 1

PART 1

ITU-R¹ 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.

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.

¹ For more detailed information, please consult: <http://web.itu.ch/brsg/index.html>

1 Questions

- Question 205-1/1 – Long-term strategies for spectrum utilization
- Question 206/1 – Strategies for economic approaches to national spectrum management and their financing
- Question 207/1 – Assessment, for spectrum planning and strategy development purposes, of the benefits arising from the use of the radio spectrum
- Question 208/1 – Alternative methods of spectrum management
- Question 215/1 – Monitoring of the radio coverage of land mobile networks to verify compliance with a given license
- Question 216/1 – Spectrum redeployment as a method of national spectrum management
- Question 223/1 – “Guidance on the regulatory framework for national spectrum management” was adopted at the Study Group 1 meeting October 2000.

2 Recommendations (SM series)

No Recommendations have been adopted yet for the first four Questions. However, an updated report SM.2012-1 entitled “Economic aspects of spectrum management” was approved by Study Group 1 in August 1999 in response to Questions 206/1, 207/1 and 208/1. Proposals for a further revision were agreed at the meeting. This Report will assist in the future development of any Recommendation relevant to those three Questions.

Recommendation ITU-R SM.1447 “Monitoring of the radio coverage of land mobile networks to verify compliance with a given licence” was approved recently, thus answering Question 215/1.

The following Recommendations were proposed by the Chairman of Study Group 1 in the Radiocommunication Sector to be of interest to the developing countries:

- Rec. SM.1131-1: “Factors to consider in allocating spectrum on a world-wide basis”
- Rec. SM.1132-1: “General principles and methods for sharing between radio services”
- Rec. SM.1133: “Spectrum utilization of broadly defined services”

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.

Rec. SM.1370-1: “Design guidelines for developing advanced automated spectrum management systems” was revised at the SG1 meeting in 2000.

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

Recommendation ITU-R SM.1413, containing 402 pages, entitled “Radiocommunication Data Dictionary (RDD) for coordination and notification purposes” was published in 1999, which will assist administrations in their (paper or electronic) filings with ITU-R.

3 Handbooks and/or the equivalent

3.1 Issued

3.1.1 “National spectrum management 1995”

3.1.2 “Spectrum monitoring” (English 1995; French and Spanish 1996)

3.1.3 “Computer-aided techniques for spectrum management”, 1999

3.2 Under preparation

3.2.1 An updated version of the handbook on “Spectrum Monitoring” (expected to be issued end of 2001)

3.2.2 An updated version of the handbook on “National spectrum management” will be developed in the period 2000-2002.

4 Remarks

Special collaboration exists 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”. Progress reports on this issue will be presented separately by the Joint Rapporteurs Group on Resolution 9. This activity should be considered also as a direct answer to Question 205-1/1 and, partly, Q.216/1.

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 203-2/3 – 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.1144-1: “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 will be updated regularly to reflect the latest revised and new recommendations.

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

- Rec. P.453-7: “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.837-2: “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 203-2/3:

- 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.529-3: “Prediction methods for the terrestrial land mobile service in the VHF and UHF bands”. This recommendation contains propagation curves for certain environments and time percentages that can be used for field strength prediction for the land mobile service operating in the VHF and UHF bands.
- Rec. P.370-7: “VHF and UHF propagation curves for the frequency range from 30 MHz to 1 000 MHz”. This Recommendation contains propagation curves and data for various climate regions and time percentages that can be used for field strength prediction for the broadcasting service operating in the frequency range 30-1 000 MHz.
- Rec. P.1410: “Propagation data and prediction methods required for the design of terrestrial broadband 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.

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

- Rec. P.618-6: “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.679-2: “Propagation data required for the design of broadcasting-satellite systems”. Complementing Recommendation ITU-R P.618, 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 radiowave propagation” (1998)

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” (expected to be published in 2001)

3.2.2 “Radiowave propagation information for predictions for terrestrial path communications” (expected to be published in 2001)

3.2.3 “Terrestrial land mobile radiowave propagation in the VHF/UHF bands” (expected to be published in 2001)

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

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)

3.2 Under preparation

3.2.1 A third edition to the Handbook on Satellite Communications 1988 issue, taking into consideration all technical and operational development since the last edition. The three-language edition is to be published in the first half of 2001, and will include all the relevant materials of the above-mentioned three supplements.

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 newly created Study Group 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.

After merging SG 10 and SG 11 into SG 6, and before revising questions for the new SG 6, all former questions from SG 10 and SG 11 keep the old numbering scheme until further revision.

1 Questions from former SG 10

Question 65-1/10 – Short-distance broadcasting in band 7 (HF) in the tropical zone

Question 217/10 – Digital sound broadcasting at frequencies below 30 MHz

Question 223/10 – Planning parameters for digital broadcasting at frequencies below 30 MHz

2 Recommendations from former SG 10 (BS series)

Draft new Recommendation ITU-R BS “System for digital sound broadcasting in the broadcasting bands below 30 MHz” in respect to Question 217/10 is under approval at the time of preparing this report.

3 Handbooks and/or the equivalent from former SG 10

3.1 Issued

3.1.1 “High-frequency broadcasting schedule”. It is a publication on diskette prepared in accordance with Article 17 of the Radio Regulations (a periodical for a 12 month duration).

3.1.2 “HF broadcasting systems”. A very useful Handbook for the Development Sector. It is an answer to Questions 64/10 and 65/10.

3.1.3 “LF and MF sound broadcasting systems”.

3.2 Under preparation

3.2.1 Handbook on “Digital Sound Broadcasting (DSB)”, expected to be published in 2001.

4 Questions from former SG 11

No Question was identified. However, all relevant Questions of former Working Party 11C, currently WP 6E, on planning of terrestrial digital broadcasting (both sound and television) as well as those Questions of former Working Party 10-11S, currently WP 6S, on satellite broadcasting (both sound and television), are under consideration by Question 11/2 of ITU-D Study Group 2.

5 Recommendations from former SG 11 (BT series)

None.

6 Handbooks and/or the equivalent from former SG 11

6.1 Issued

6.1.1 “Television systems used around the world”. Still a useful reference.

6.1.2 “Digital television signals: coding and interfacing within studios” (1995)

6.1.3 “Subjective assessment methodology in television” (1995)

6.1.4 “Technical specifications of ITU-R teletext systems” (1999). This handbook is intended for developing countries wishing to introduce such a form of data broadcasting.

6.2 Under preparation

6.2.1 Former Study Group 11 responded positively to the request from ITU-D Study Group 2 for the development of a handbook on terrestrial television planning taking into consideration digitization of the television signal. Publication is foreseen in 2001.

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" (1996). 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.

3.2 Under preparation

3.2.1 "Data relay satellite". This Handbook will explain how different radio sensors at different low altitudes could work with their parent receiving fixed satellites at the GSO orbit. It is expected to be ready end 2001.

3.2.2 "Space research". This Handbook will address mainly the sharing issues between frequencies needed for deep research in the space and those used by other services. It is expected to be ready end 2001.

3.2.3 "Use of radio spectrum for meteorological activities". This Handbook will explain how to use the radio spectrum for meteorological measurements. It is expected to be ready end 2001.

STUDY GROUP 8

Mobile, radio determination, amateur and related satellite services

Scope

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

1 Questions

- Question 45-4/8 – Technical and operating considerations for a global land and maritime distress and safety system
- Question 48-4/8 – Techniques and frequency usage in the amateur service and amateur-satellite service
- Question 77-4/8 – Adaptation of mobile radiocommunication technology to the needs of developing countries
- Question 90/8 – Technical and operating characteristics of systems providing radiocommunication using satellite techniques for distress and safety operations (in particular “*decide 3*” relating to “COSPAS-SARSAT”)
- 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 229/8 – Future development of IMT-2000 and systems beyond IMT-2000

2 Recommendations (M series)

2.1 Question 209/8

- Rec. M.830 issued 1994: “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 issued 1994: “Disaster communications in the amateur and amateur satellite services”

2.2 Question 48/8

The 1994 M series – “Amateur service and amateur satellite service”:

- Rec. M.1041: “Future Amateur Radio System (FARS)”
- Rec. M.1042: See also Question 209/8

- Rec. M.1043: “Use of the amateur and amateur satellite services in the developing countries”
- Rec. M.1044: “Frequency sharing criteria in the amateur and amateur satellite services”

2.3 *Question 77/8*

- Rec. M.819-1 “Future Public Land Mobile Telecommunication Systems (FPLMTS) for developing countries”

The Second Revision of Rec. M.819-2 was adopted by Study Group 8 taking into consideration the editorial amendments proposed by the ITU-D Study Group 2 meeting in October 1996.

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

2.5 *Question 228/8*

- Rec. M.1034-1: “Requirements for the radio interface(s) for international mobile telecommunications (IMT-2000)”
- Rec. M.1457: “Detailed specifications of the radio interfaces of IMT-2000”

3 Handbooks and/or the equivalent

3.1 Issued

- 3.1.1 “Land mobile” (including wireless access). Volume I (Wireless access local loop) issued in 1997. Volume II (Principles and approaches on evolution to IMT-2000/FPLMTS) of this Handbook issued in 1998.

3.2 Under preparation

- 3.2.1 “Mobile-satellite communications”. Also a very important Handbook to the Development Sector taking into consideration its relevance also to the rural communications. This handbook is expected to be published in 2001
- 3.2.2 “Land mobile” (including wireless access), Volume 1 (FWA), a revision will be issued in 2001.
- 3.2.3 “Land mobile” (including wireless access), Volume 3 (Dispatch systems), will be issued in 2001.
- 3.2.4 “Land mobile” (including wireless access), Volume 4 (TICS), will be issued in 2001.
- 3.2.5 “Deployment of IMT-2000 Systems”, will be issued in 2002.

STUDY GROUP 9**Fixed services****Scope**

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

1 Questions

Question 125-4/9 – Point-to-multipoint radio systems

Question 140-3/9 – The use of mobile derived technologies in FWA applications

Question 212-1/9 – Fixed service systems utilizing High Altitude Platform Stations (HAPS)

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)” (revision)

Rec. F.1098-1: “Radio frequency channel arrangements for radio-relay systems in the range 1 900-2 300 MHz”

Rec. F.1242: “Radio frequency channel arrangements for radio-relay systems in the range 1 350-1 530 MHz”

Rec. F.1243: “Radio frequency channel arrangements for radio-relay systems in the range 2 290-2 670 MHz”

Rec. F.755-2: “Point-to-multipoint systems used in the fixed service” (revision)

Rec. F.756: “TDMA point-to-multipoint systems used as radio concentrators” (new)

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 Question 140/9

Rec. F.757-2: “Basic system requirements and performance objectives for FWA using mobile-derived technologies offering basic telephone services”

Rec. F.1399: “Vocabulary of terms for wireless access”

Rec. F.1400: “Performance and availability for FWA and PSTN”

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

Rec. F.1402: “Sharing criteria between MWA and FWA systems using the same type of equipment”

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” (revision)

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”

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 1997.

3.2 Under preparation

3.2.1 “HF adaptive systems”, requested by the Development Sector. It is expected to be published early 2001.

ANNEX 1

PART 2

ITU-T² 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.

STUDY GROUP 2**Operational aspects of service provision,
networks and performance**

Study Group 2 is the lead Study Group for service definition (including all types of services) 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.

1 Questions

Question 1/2 – applications of numbering, naming and addressing plans for fixed and mobile services

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”

² For more detailed information, please consult: <http://web.itu.ch/ITU-T/index.html>

- E.164-1: “Criteria and procedures for the reservation, assignment and reclamation”
- 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 freephone numbers for international freephone service” (new)
- 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 numbering and addressing” “E.195: “ITU-T international numbering resource administration”
- E.212: “Network operational principles for future public mobile systems and services”

Question 3/2 – Management and development of voice and non voice-based telecommunication services

Relevant Recommendations:

- F.16: “Global virtual network services” (new)
- E.117: “Terminal devices used in connection with the public telephone service (other than telephone)” (revision)
- E.152: “International free phone service” (revision)
- E.153: “Home country direct” (new)
- E.168: “UPT Numbering” (May 1999)

Question 4/2 – Human factors issues in international telecommunications services

Relevant Recommendations:

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

2 Handbooks and/or the equivalent

2.1 Issued

2.1.1 In the past many useful ITU-D documents were prepared for publication in collaboration with former Study Group 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)

2.2 Under preparation

None.

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 shall 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 Minneapolis Plenipotentiary Conference 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 providing international telecommunications services”

1 Questions

Question 1/3 – Development of charging and accounting/settlement mechanisms for network capabilities and services features made available by new technologies

Question 2/3 – 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” (revision)

- D.140: “Accounting rate principles for international telephone services” (addition of an annex)
- D.155: “Guiding principles governing the apportionment of accounting rates in the intercontinental telephone relations” (revision)
- D.170: “Monthly telephone and telex accounts” (revision)
- 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 3/3 – Regional costing 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.307R: “Renumeration of digital systems and channels used in telecommunication relations between the countries of 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.

Question 4/3 – Terms and definitions of Recommendations dealing with charging and accounting principles.

Relevant Recommendation:

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

2 Handbooks and/or the equivalent

- 2.1 Under publication: Supplement 3 – “Handbook on the methodology for determining costs and establishing national tariffs”

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 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 using telecommunication management network (TMN) framework. Additionally responsible for other telecommunication management 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 definition

Relevant Recommendation:

- M.60: “Maintenance terminology and definitions”

Question 7/4 – Fault, Performance and Configuration Management

Relevant Recommendations:

- M.3600: “Principles for the management of ISDNs”
- M.3610: “Principles for applying the TMN concept to the management of B-ISDN”

Question 3/4 – Transport network and service operation proceeding 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”
- M.2120: PDH path, section and transmission system and SDH path and multiplex section fault detection and localization procedures”

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” (revision)
- O.41: “sophometer for use on telephone-type circuits” (revision)
- 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”

Question 7/4 – TMN principles, and architecture

Relevant Recommendations:

- M.3010: “Principles for a Telecommunications Management Network”
- M.3013: “Considerations for Telecommunication Management Network”

Question 10/4 – Framework for unified management of integrated circuit-switched and packet-based networks (with an initial emphasis on IP based networks)

Question 16/4 – TMN Management support for IMT 2000 and IN

2 Handbooks and/or the equivalent

2.1 Issued:

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

2.2 Under publication

None.

In addition to the above-mentioned Recommendations, the Recommendations mentioned below are important to be noted by the Development Sector:

- Rec. O.151 (10/92): “Error performance measuring equipment operating at the primary rate and above”
- Rec. O.152 (10/92): “Error performance measuring equipment for bit rates of 64 kbit/s and $N \times 64$ kbit/s”
- Rec. O.153 (10/92): “Basic parameters for the measurement of error performance at bit rates below the primary rate”
- Rec. O.162 (10/92): “Equipment to perform in-service monitoring on 2048, 8448, 34368 and 139264 kbit/s signals”
- Rec. O.171 (04/97): “Timing jitter measuring equipment for digital systems”

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 19/5 – Interference produced by power lines and electrified railway lines into telecommunication lines (one of the outcome of this Question is the “Updating of Directives”, former Question 13)

No Recommendation applicable.

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)

Volume III: “Capacitive inductive and conductive coupling: physical theory and calculation method” (revision 1990)

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” (revision 1990)

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 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 recently chapters 9 and 10 were issued in 1995.

2.1.3 New Volumes II and V of the Directives were issued in 2000.

2.1.4 A report of the meeting of Study Group 5 and its Working Parties (Geneva, 11-15 May 1998): “Guide to the use of ITU-T publications produced by SG 5 aimed at achieving electromagnetic compatibility and safety” (May 1998).

2.2 Under preparation

2.2.1 An update of Volume VI of the Directives as a result of the adoption of the new annex to Recommendation K.26 “Protection of telecommunication lines against harmful effects from electric power and electrified railway lines” is under consideration for an appropriate form of publication. The same applies also to the updated materials of Volumes VII and VIII.

- 2.2.2 A new handbook on “Earthing of telecommunication installations” is under preparation, publishing date is not known yet (to replace an old Handbook issued in 1976).
- 2.2.3 A new handbook contains descriptions of measuring and testing methods related to electromagnetic compatibility. Work started in the existing cycle, expected to be finished in the next cycle 1996-2000. Publishing date is not known yet.
- 2.2.4 Possible additional chapters to the handbook “Protection of telecommunication lines and equipment against lightning discharges”. Publishing date is not known yet.
- 2.2.5 An update to the report under 2.1.4

STUDY GROUP 6

Outside plant

Responsible for studies relating to outside plant such as construction, installation, jointing, terminating, protection from corrosion and other forms of damage from environment impact, except electromagnetic processes, of all types of cable for public telecommunications and associated structures.

1 Questions

Question 2/6 – Fire safety of the installations

Recommendation: None.

Question 5/6 – Optical fibre cable network maintenance (former Question 8 with updating)

Recommendation: None.

Question 6/6 – “Installation of underground telecommunication cables in small trenches”

Rec. L.38 “Use of trenchless techniques for the construction of underground infrastructures for telecommunication cable installation”

Question 8/6 – Optical fiber cable construction

Recommendation: None.

Question 9/6 – Construction of optical networks in the access area

Recommendation: None.

All these Questions are answered mainly by handbooks. Recommendations are under preparation.

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 “Application of computers and micro-processors to the construction, installation and protection of telecommunication cables” (in response to Question 3, published in 1994)
- 2.1.6 “Construction, installation, jointing and protection of optical fibre cables” (published in 1994)
- 2.2 Under preparation
- 2.2.1 “Marinized terrestrial cables” and “Fire protection”

STUDY GROUP 7

Data networks and open system communications

Responsible for studies relating to data communication networks and studies relating to the application of open system communications including networking, directory and security. In addition SG 7 is lead Study Group on frame relay and for communication system security.

1 Questions

Question 3/7 – 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 12/7 – 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”

Question 20/7 – Security services, mechanisms and protocols

Relevant Recommendations:

- X.sio: “Information technology – Security techniques – Security Information Objects”
- X.ttp1: “Information technology – Security techniques – Guidelines for use of Trusted Third Party services”
- X.ttp2: “Information technology – Security techniques – Specification of TTP services to support the application of digital signatures”
- X.xer “Information technology – ASN.1 encoding rules – Specification of XML encoding rules (XER)”

2 Handbooks and/or the equivalent

2.1 Issued

None.

2.2 Under preparation

A Handbook on security, expected to be published in 2001.

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 with on broadcasting

1 Questions

Question 1/9 – Digital networks carrying sound programme signals for broadcasting

Relevant Recommendation:

- J.52: “Digital transmission of high-quality sound programme signals using one, two or three 64 kbit/s channels per mono signal (and up to six per stereo signal)”

Question 2/9 – Digital transmission of conventional television and high-definition television signals for contribution

Relevant Recommendation:

- J.82: “Transport of MPEG-2 constant bit rate television”

Question 13/9 – Voice and Video IP applications over cable television networks

Recommendation: None.

2 Handbooks and/or the equivalent

2.1 Issued

None.

2.2 Under preparation

None.

STUDY GROUP 10

Languages for telecommunication applications

Lead Study Group for language and description techniques. Responsible for technical languages, the methods for their usage and other issues related to the software aspects of telecommunication systems.

1 Questions

No Question was retained.

2 Handbooks and/or the equivalent

Despite the above, handbooks relevant to the CHILL language were retained:

2.1 CHILL formal definition – Volume I

2.2 CHILL formal definition – Volume II

2.3 Introduction to the CHILL (1993)

STUDY GROUP 11

Signalling requirements and protocols

Lead Study Group on intelligent networks. SG 11 is responsible for studies relating to signalling requirements and protocols for Internet Protocol related functions, some mobility related functions, multimedia functions and enhancements to existing Recommendations on access and interworking signalling protocols of ATM, N-ISDN and PSTN.

1 Questions

Question 1/11 – Signalling requirements for signalling support for new, value added, IP based and IN-based services

Relevant Recommendations:

- Q.696: “Interworking of signalling systems – logic procedures for interworking of Signalling System No. 7 to R3”
- Q.761: “Signalling System No. 7 – ISDN User Part functional description Addendum 1 to Recommendation Q.761 – Signalling System No. 7 – ISDN user part functional description Addendum 1”

Question 12/11 – Access and network signalling for advanced narrow-band and broadband services

Relevant Recommendations:

- Q.271: “General”
- Q.272: “Requirements for the signalling data link”
- Q.273: “Data transmission rate”

Question 13/11 – Common transport protocols

Relevant Recommendations:

- I.361: “B-ISDN ATM layer specification”
- I.363: “B-ISDN ATM adaptation layer (AAL) specification”
- I.363.1: “B-ISDN ATM Adaptation Layer specification: Type 1 AAL”
- I.363.5: “B-ISDN ATM Adaptation Layer specification: Type 5 AAL”

2 Handbooks and/or equivalent

2.1 Issued

2.1.1 “Guidelines for preparing and conducting field trials of digital switching equipments” (1987)

2.1.2 “ISDN field trial guidelines” (1991)

2.1.3 “Guidelines for implementing a signalling system No. 7 network” (1991)

2.2 Under preparation

None.

STUDY GROUP 12

End-to-end transmission performance of networks and terminals

Lead Study Group on quality of service and performance. SG 12 is responsible for guidance on the end-to-end transmission performance of networks and terminals and their interaction, in relation to the perceived quality and acceptance by user of text, speech, and image applications. This work includes the related transmission implications of all networks (e.g., those base on PDH, SDH, ATM, and IP) and all telecommunications terminals (e.g., handset, hands-free, headset, mobile, audiovisual and interactive voice response).

1 Questions

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

Relevant Recommendations:

- G.113: “Transmission impairments”
- G.171: “Transmission plan aspects of privately operated networks”
- G.175: “Transmission planning for private/public network interconnection of voice traffic”
- G.177: “Transmission planning for voiceband services over hybrid Internet/PSTN connections” (new)

Question 12/12 – Transmission performance considerations for voiceband services carried on networks that use Internet Protocol (IP)

Relevant Recommendation:

- G.177 – “Transmission planning for voiceband services over hybrid Internet/PSTN connections” (new)

2 Handbooks and/or the equivalent

2.1 Issued

2.1.1 “Telephony” (published 1993) and continuously amended.

2.2 Under preparation

None.

STUDY GROUP 13

Multi-protocol and IP based networks and their interworking

Lead Study Group for IP-related matters, B-ISDN, Global Information Infrastructure and satellite matters. SG 13 is responsible for studies relating to interworking of heterogeneous networks encompassing multiple domens, multiple protocols and innovative technologies with a goal to deliver high quality, reliable networking. Specific aspects are architecture, interworking and adaptation, and-to-end considerations, routing and requirements for transport.

1 Questions

Question 1/13 – Principles, requirements, Frameworks and Architectures for an overall heterogeneous network environment

Relevant Recommendations:

- G.803: “Architecture of transport networks based on the synchronous digital hierarchy (SDH)”
- G.805: “Generic functional architecture of transport networks”
- G.812: “Timing requirements of slave clocks suitable for use as node clocks in synchronization networks”
- G.823: “The control of jitter and wander within digital networks which are based on the 2 048 kbit/s hierarchy”
- I.322: “Generic protocol reference model for telecommunication networks”

Question 14/13 – Access architecture principles and features at the lower levels for IP-based and other systems

Relevant Recommendations:

- G.902: “Framework Recommendation on functional access networks (AN) Architecture and functions, access types, management and service node aspects”
- G.964: “V-Interfaces at the digital local exchange (LE) – V5.1-Interface (based on 2 048 kbit/s) for the support of access network (AN)”

Question 15/13 – General network terminology including IP aspects

Relevant Recommendation:

I.113: “Vocabulary of terms for broadband aspects of ISDN” (revision)

Question 16/13 – Telecommunication Architecture for evolving environment

Relevant Recommendation:

- Y.110: “General overview of the Global Information Infrastructure standards development”
- Y.110: “Global Information Infrastructure principles and framework architecture”
- Y.120: “Global Information Infrastructure scenario methodology”

2 Handbooks and/or the equivalent

2.1 Issued:

None

2.2 Under preparation

None.

STUDY GROUP 15

Optical and other transport networks

Lead Study Group on access network transport and on optical technology SG 15 is the focal point in ITU-T for studies on optical and other transport networks, systems and equipment. This encompasses the development of transmission layer related standards for access, metropolitan and long haul sections of communication networks.

2 Questions

Question 1/15 – Access network transport

Question 2/15 – Optical systems for 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”
- G.992.1: “Asymmetric Digital Subscriber Line (ADSL) transceivers”
- G.992.2: “Splitterless Asymmetric Digital Subscriber Line (ADSL) transceiver”
- G.996.1: “Test procedures for Digital Subscriber Line (DSL) transceivers”

Question 8/15 – 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”

Question 12/15 – Characteristics and test methods of optical fibres and cables

Relevant Recommendations:

- G.650: “Characteristics of a single-mode optical fibre 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”

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”

Question 19/15 – General characteristics of optical transport networks

Relevant Recommendation:

- G.872: “Architecture of optical transport networks”

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 terminals

Lead Study Group on multimedia services, systems and terminals, and on e-business and e-commerce. SG 16 is responsible for studies relating to multimedia service definition and multimedia systems, including associated terminals, modems, protocols and signal processing.

1 Questions

Question C/16 – Multimedia applications and services

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.321: “Adaptation of H.320 visual telephone terminals to B-ISDN environments”

Question 2/16 – Multimedia over packet networks using H.323 systems

Relevant Recommendations:

- H.225.0: “Call signalling protocols and media stream packetization for packet-based multimedia communication systems”
- H.323: “Packet-based multimedia communications systems”

2 Handbooks and/or the equivalent

2.1 Issued

None.

2.2 Under preparation:

None.

Special Study Group on IMT-2000 and beyond

Lead Study Group on IMT-2000 and beyond and for mobility. It is responsible for studies relating to network aspects of International Mobile Telecommunications-2000 (IMT-2000) and beyond, including wireless Internet, convergence of mobile and fixed networks, mobility management, mobile multimedia functions, internetworking, interoperability and enhancements of existing ITU-T Recommendations on IMT-2000.

This Study Group was created recently by WTSA-2000; a draft Question No. 5 “Preparation of an ITU Handbook on IMT-2000” was adopted by this Study Group as regards responsibility for the part of this Handbook within the UIT-T. If this Question is approved by the Telecommunication Standardization Advisory Group in its meeting of March 2001, the Handbook will be published early 2002.

APPENDIX 1

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION STANDARDIZATION SECTOR

LIST OF SUPPLEMENTS

10 August 2000

A Series**Organization of the work of the ITU-T****Supplements to the Series A Recommendations**

A Suppl. 1 (09/1998) Guidelines on quality aspects of protocol related Recommendations

A Suppl. 2 (06/2000) Guidelines on interoperability experiments

D Series**General tariff principles****Supplements to the Series D Recommendations**

D Suppl. 1 (11/1988) Cost and tariff study method

D Suppl. 2 (11/1988) Method for carrying out a cost price study by regional tariff groups

D Suppl. 3 (03/1993) Handbook on the methodology for determining costs and establishing national tariffs

E Series**Overall network operation, telephone service, service operation and human factors****Supplements to the Series E Recommendations relating to the operations of the international service**

E.164 Suppl. 1 (03/1998) Alternatives for carrier selection and network identification

E.164 Suppl. 2 (11/1998) Number Portability

E-100 series Suppl. 3 (11/1988) North american precise audible tone plan

E-100 series Suppl. 4 (11/1988) Treatment of calls considered as terminating abnormally

E-300 series Suppl. 1 (11/1988) List of possible supplementary telephone services which may be offered to subscribers

E-300 series Suppl. 2 (01/1994) Various tones used in national networks

E-300 series Suppl. 5 (10/1984) Modelling of an experimental test design for the determination of inexperienced user difficulties in setting up international calls using nationally available instructions, or to compare different sets of instructions

E-300 series Suppl. 6 (11/1988) Preparation of information to customers travelling abroad

E-300 series Suppl. 7 (11/1988) Description of INMARSAT existing and planned systems

Supplements to the Series E Recommendations relating to telephone network management and traffic engineering

E-800 series Suppl. 1 (11/1988) Table of the Erlang formula

E-800 series Suppl. 2 (11/1988) Curves showing the relation between the traffic offered and the number of circuits required

E-800 series Suppl. 5 (11/1988) Teletraffic implications for international switching and operational procedures resulting from a failure of a transmission facility

E-800 series Suppl. 7 (11/1988) Guide for evaluating and implementing alternate routing networks

F Series
Non-telephone telecommunication services

Supplements to the Series F Recommendations

F Suppl. 1 (11/1988) Definitions relating to telegraph, telematic and data transmission services

F Suppl. 2 (11/1988) Terms and definitions for telex

G Series
Transmission systems and media, digital systems and networks

Supplements to Section 1 of the Series G Recommendations

G Suppl. 29 (03/1993) Planning of mixed analogue-digital circuits (chains, connections)

G Suppl. 31 (03/1993) Principles of determining an impedance strategy for the local network

G Suppl. 32 (03/1993) Transmission aspects of digital mobile radio systems

Supplements to Sections 2 to 5 of the Series G Recommendations

G Suppl. 4 (12/1972) Certain methods of avoiding the transmission of excessive noise between interconnected systems

G Suppl. 5 (10/1984) Measurement of the load of telephone circuits under field conditions

G Suppl. 7 (12/1972) Loss-frequency response of channel-translating equipment used in some countries for international circuits

G Suppl. 8 (12/1972) Method proposed by the Belgian telephone administration for interconnection between coaxial and symmetric pair systems

G Suppl. 13 (10/1976) Noise at the terminals of the battery supply

G Suppl. 17 (10/1984) Group-delay distortion performance of terminal equipment

G Suppl. 22 (10/1984) Mathematical models of multiplex signals

G Suppl. 26 (10/1984) Estimating the signal load margin of FDM wideband amplifier equipment and transmission systems

G Suppl. 27 (10/1984) Interference from external sources

This Supplement is published as G.500 series supplement in Red Book fascicle III.2 and as G.900 series supplement in Red Book fascicle III.3

Supplements to Section 6 of the Series G Recommendations

G Suppl. 19 (10/1984) Digital crosstalk measurement (method used by the Administrations of France, the Netherlands and Spain)

Supplements to Section 7 of the Series G Recommendations

G Suppl. 28 (10/1984) Application of transmultiplexers, FDM codecs, data-in-voice (DIV) systems and data-over-voice (DOV) systems during the transition from an analogue to a digital network

G Suppl. 32 (11/1988) Transfer of alarm information on 60-channel transmultiplexing equipment

Supplements to Section 9 of the Series G Recommendations

G Suppl. 34 (11/1988) Temperature in underground containers for the installation of repeaters

G Suppl. 35 (11/1988) Guidelines concerning the measurement of wander

G Suppl. 36 (11/1988) Jitter and wander accumulation in digital networks

Supplements to the Series G Recommendations

G Suppl. 37 (10/1998) ITU-T Recommendation G.763 digital circuit multiplication equipment (DCME) tutorial and dimensioning

This supplement includes one diskette containing the DCME tutorial and dimensioning methods

G Suppl. 38 (10/1998) Variable bit rate calculations for the ITU-T Recommendation G.767 Digital Circuit Multiplication Equipment (DCME) This supplement includes one diskette explaining how the VBR equations were derived

H Series Audiovisual and multimedia systems

Supplements to the Series H Recommendations

H Suppl. 1 (05/1999) Application profile – Sign language and lip-reading real-time conversation using low bit rate video communication

This Supplement includes one CD-ROM containing the video clip "Irene" to be used as test material for video coding of sign language. Due to the quantity of data, this publication is only available as paper plus CD-ROM

I Series Integrated services digital network

Supplements to the Series I Recommendations

I Suppl. 1 (03/1998) Generic service descriptions for ten supplementary services defined in I.250-Series Recommendations

J Series Transmission of television, sound programme and other multimedia signals

Supplements to the Series J Recommendations

J Suppl. 1 (11/1998) Example of linking options between annexes of ITU-T Recommendation J.112 and annexes of ITU-T Recommendation J.83

J Suppl. 2 (11/1998) Guidelines for the implementation of annex A of Recommendation J.112, "Transmission systems for interactive cable television services" – Example of digital video broadcasting (DVB) interaction channel for cable television distribution

J Suppl. 3 (11/1998) Guidelines for the implementation of Recommendation J.111 "Network independent protocols" – Example of digital video broadcasting (DVB) systems for interactive services

J Suppl. 4 (09/1999) Terminology for new services in television and sound-program transmission

J Suppl. 5 (09/1999) Guidelines on the use of some ITU-T Recommendations in the J series

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

Supplements to the Series P Recommendations

P Suppl. 10 (11/1988) Considerations relating to transmission characteristics for analogue handset telephones

P Suppl. 16 (11/1988) Guidelines for placement of microphones and loudspeakers in telephone conference rooms and for group audio terminals (GATs)

P Suppl. 20 (03/1993) Examples of measurements of handset receive-frequency responses: dependence on earcap leakage losses

P Suppl. 23 (02/1998) ITU-T coded-speech database

This Supplement includes 3 CD-ROM containing the ITU-T coded speech database for 8 kbit/s codec tests. Due to the quantity of data, this publication is only available as paper plus CD-ROM

Q Series Switching and signalling
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Q Suppl. 1 (11/1988) Definition of relative levels, transmission loss and attenuation/frequency distortion for digital exchanges with complex impedances at Z interfaces

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Q Suppl. 3 (05/1998) Number portability – Scope and capability set 1 architecture

Q Suppl. 4 (05/1998) Number portability – Capability set 1 requirements for service provider portability (All call query and Onward routing)

Q Suppl. 5 (03/1999) Number portability – Capability set 2 requirements for service provider portability (Query on release and Dropback)

Q Suppl. 6 (03/1999) Technical report TRQ.2000: Roadmap for the TRQ.2xxx-series technical reports

Q Suppl. 7 (03/1999) Technical report TRQ.2001: General aspects for the development of unified signalling requirements

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Q Suppl. 17 (12/1999) Technical Report TRQ.2200: Call control signalling requirements for party call control

Q Suppl. 18 (12/1999) Technical Report TRQ.2230: Call control signalling requirements for Join Call service

Q Suppl. 19 (12/1999) Technical Report TRQ.2300: Bearer control signalling requirements – Root-party bearer control

Q Suppl. 20 (12/1999) Technical Report TRQ.2310: Bearer control signalling requirements – Leaf-party bearer control

Q Suppl. 21 (12/1999) Technical Report TRQ.2320: Bearer control signalling requirements – Third-party bearer control

Q Suppl. 22 (12/1999) Technical Report
TRQ.3000: Operation of the bearer independent call control (BICC) protocol with digital subscriber signalling system No. 2 (DSS2)

Q Suppl. 23 (12/1999) Supplement to ITU-T Q.1901 Recommendation – Technical Report TRQ.3000: Operation of the bearer independent call control (BICC) protocol with AAL type 2 signalling protocol (CS1)

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Q Suppl. 25 (12/1999) Supplement to ITU-T Q.2900 series Recommendations: Broadband integrated services digital network (B-ISDN) – Digital subscriber signalling system No. 2 (DSS2) – User-network interface layer 3 – Overview of B-ISDN DSS2 signalling capabilities

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