



Question 9/2: 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

STUDY GROUP 2

SOURCE: PROPOSED RAPPORTEUR FOR QUESTION 9/2

TITLE: GUIDELINES FOR THE IDENTIFICATION OF THOSE QUESTIONS OF PARTICULAR CONCERN TO THE DEVELOPMENT SECTOR

Introduction

1. In the past Study Group cycle, and for the same Question, Study Group 2 adopted in 1995 the following Guidelines for selecting such Questions:

- (a) questions related to maintenance;
- (b) acquisition of propagation data for tropical zones;
- (c) protection of telecommunication installation and equipment;
- (d) international telephone tariffs and accounting.

2. Based on these general Guidelines, and on fruitful co-operation with the Chairmen and Vice-Chairmen and concerned Counsellors of the Study Groups in the other two sectors, through formal and informal contacts, and in particular also on the useful written contributions of both:

- the Senior Counsellor of the radiocommunication sector, Dr. K. Hughes (reflecting proposals of individual Study Groups in the radio sector) representing officially the Radiocommunication Bureau in the work of Study Group D2; and
- the Counsellor of the standardization sector, Mr. A. Ganguli, (reflecting proposals of individual Study Groups in the standardization sector) representing the Standardization Bureau in the work of Study Group D2.

A list of Questions of particular concern was established. This list was later adjusted to take into consideration the Decisions by the Working Party and the Rapporteurs' Group, dropping any Question already under treatment by the development sector in one way or the other and those addressed to manufacturers, or adding to the list as a result of ITU Conferences (Radio-communication, Development or Standardization), and/or new adoption by the relevant Study Group in the other two sectors.

3. Realizing the importance of Handbooks, Manuals and Supplements issued by the other sectors, it was decided to issue a progress report on all Handbooks, Manuals, Supplements including those under preparation.

4. The final list of such Questions as approved by Study Group 2 is attached at Annex.

Proposal

5.1 Agree at this meeting on a new set of Guidelines using past experience. Propose to adopt the same Guidelines with further refinement by technology array of particular concern to developing countries not covered by any other Study Group 2 Question.

5.2 Create two groups each to take note of the Questions in the standardization sector and the other one in the radiocommunication sector and propose (working by correspondence) the new list of Questions, adding to each question those relevant Recommendations, including if possible the summary of such Recommendations.

5.3 Each group is encouraged to also examine Handbooks, Manuals and Supplements belonging to the sector concerned in order to evaluate the usefulness of the information. Study ways and means of improving the dissemination of the yearly report.

5.4 Based on those Resolutions and Recommendations adopted by the other two sectors to foster collaboration and assistance to the development sector, propose liaison statements to different concerned study groups requesting their assistance in developing necessary material which could assist the development sector in following the work of such Study Groups and make use of its output. This material could be either a handbook or a tutorial, or a guide or a recommendation etc. The Recommendation adopted by Study Group 3/R "Propagation" on how and when to use their Recommendations, as well as the guide prepared by Study Group 5/T "Protection" on how and when to use their Recommendations are good examples.

5.5 Convene a two-day meeting of the two Groups in June next year in order to prepare the Final Draft Report for adoption by the Study Group meeting next year.

Annex: 1

ANNEX

ANNEX 1 - Part 1

ITU-R Questions of particular concern to developing countries

STUDY GROUP 1 (Spectrum management)

a) Questions

- Q.205/1 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

b) Handbooks and/or the equivalent

- b) 1 Issued
b) 1.1 "National spectrum management 1995"
b) 1.2 "Spectrum monitoring" (English 1995; French and Spanish 1996)
b) 2 Under preparation: "Computer-aided techniques for spectrum management" (expected to be issued early 1998)

c) Recommendations (SM-series)

- c) 1 Question Q55-3/1: A new version of the corresponding Recommendation SM.329 was approved as version 7 by the Radio Assembly in October 1997.
c) 2 No Recommendation yet for Question 205.
c) 3 As regards the other three Questions (206/1, 207/1 and 208/1), no Recommendations have been adopted yet. However, a new Report entitled "Economic Aspects of Spectrum Management" was approved by Study Group 1 in its last meeting in July 1997. This Report will assist in the future for developing any Recommendation relevant to those three Questions. A copy of this report was distributed to each Administration.

d) Remarks

- d) 1 The Chairman of Study Group 1 requested that the following three Recommendations should also be brought to the attention of the Development Sector:
- Rec. SM.11311: "Factors to consider in allocating spectrum on a world-wide basis"
 - Rec. SM.1132: "General principles and methods for sharing between radio services"
 - Rec. SM.1133: "Spectrum utilization of broadly defined services"

These are available in ITU-R Recommendations, 1995, SM series.

- d) 2 A special collaboration exists between the Development Sector and Study Group 1 as regards the development of BASMS, where the Chairman and experts of this Study Group helped in developing and updating the system and in providing the necessary training on it.

STUDY GROUP 3 (Radiowave propagation)

a) Questions

- Q.203-1/3 Propagation data and prediction methods for terrestrial broadcasting and terrestrial mobile services at frequencies above 30 MHz
Q.222/3 Measurements and databanks
Q.223/3 Prediction of sky-wave propagation conditions, signal intensity and circuit performance at frequencies between about 1.6 and 30 MHz

b) Handbooks and/or the equivalent

- b) 1 Issued
b) 1.1 "Curves for radiowave propagation over the surface of the earth" (1991)
b) 1.2 "Radiowave propagation information for predictions for earth-to-space path communications" (1997)
b) 1.3 "Radiometeorology" (1996)
b) 2 Under preparation:
b) 2.1 "The ionosphere and its effects on terrestrial and earth-space radiowave propagation" (expected to be published before the end of 1997)
b) 2.2 "Radiowave propagation information for predictions for signal levels likely to cause interference and for evaluation of coordination distances" (expected to be published in 1999)
b) 2.3 "Radiowave propagation information for predictions for terrestrial path communications" (expected to be published in 1998)
b) 2.4 "Operational forecasting and near-real time assessment of ionospheric variability associated with radiocommunications (expected to be published in 1999)

c) Recommendations (P-series)

- c) 1 Among the Recommendations developed by Study Group 3, the following two Recommendations are essential to all ITU members, including the ITU-D members. Although these two Recommendations are not relevant to the Questions identified by Working Party A/2, they are:

- Rec. P.341: "The concept of transmission loss for radio links"
- Rec. P.1144: "Guide to the application of propagation methods of Study Group 3".

This second Recommendation could be considered as a mother Recommendation and a quick and easy way to identify the required Recommendation for each application.

- c) 2 Question 203-1/3
- Rec. P.1145: "Propagation data for the terrestrial land mobile service in the VHF and UHF bands"
 - Rec. P.529: "Prediction methods for the terrestrial land mobile services in the VHF and UHF bands"
 - Rec. P.370: "VHF and UHF propagation curves for the frequency range from 30 MHz to 1 000 MHz"
- c) 3 Question 222/3

- Rec. P.846: "Measurements of ionospheric and related characteristics" (revision)
 - Rec. P.845: "HF field strength measurement" (revision)
 - Rec. P.1148: "Standardized procedure for comparing predictions and observed HF sky-wave signal intensities and the presentation of such comparisons" (new)
- c) 4 Question 223/3
- Rec. P.1239: "ITU-R reference ionospheric characteristics" (revision)
 - Rec. P.1040: "ITU-R methods of basic MUF, operational MUF and Ray-path prediction" (revision)
 - Rec. P.533: "HF propagation prediction method" (revision)

STUDY GROUP 4 (Fixed-satellite service)

a) Questions

The only Question which was selected was 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", and it has been completed by issuing the necessary Recommendation ITU-R S.1001, thus answering this Question. It was deleted by Study Group 4 in 1995.

b) Handbooks and/or the equivalent

b) 1 Issued

b) 1.1 "CCIR Handbook on satellite communications (fixed-satellite service)" (2nd edition 1988).

To this Handbook, we should add the 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)

b) 1.2 "Satellite News Gathering (SNG) user guide" (1996)

b) 2 Under preparation:

b) 2.1 A revision 3 to the "Handbook on Satellite Communications" (1988 issue), taking into consideration all technical and operational development since the last edition. This edition is expected to be ready in 1998.

c) 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" (issued 1994).

STUDY GROUP 7 (Science services)

a) Questions

Q.204-1/7 Sharing of the band 1 675 - 1 710 MHz between the mobile-satellite service and the meteorological aids services

b) Handbooks and/or the equivalent

b) 1 Issued

b) 1.1 "Radio astronomy" (1995). This handbook is intended to be used by the spectrum managers to understand the frequency sharing issues and their implications.

b) 1.2 "Precise frequency and time". Issued recently. This handbook explains the relation between precision frequencies and standard timing for spectrum managers.

b) 2 Under preparation

b) 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 1997 or soon after.

b) 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 1997 or after.

c) Recommendations (SA-series)

c) 1 Question SA.204-1/7

Rec. SA.1158: "Sharing of the 1 675 - 1 710 MHz band between the meteorological satellite service (space-to-earth) and the mobile-satellite service (earth-to-space)" (new).

STUDY GROUP 8 (Mobile, radio determination, amateur and related satellite services)

a) Questions

Q.209/8 Contributions of the mobile and amateur services and associated satellite services to the improvement of disaster communications

Q.48-3/8 Techniques and frequency usage in the amateur service and amateur-satellite service

Q.77-3/8 Adaptation of mobile radiocommunication technology to the needs of developing countries. A revised version No. 3 of this Question was proposed by the relevant Working Party and adopted by the Study Group 8 meeting in June 1997.

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

b) Handbooks and/or the equivalent

b) 1 Issued

"Land mobile" (including wireless access). A very important handbook for the Development Sector. Volume I (Wireless access local loop) of this handbook was issued in 1997. Volume II (Principles and approaches on evolution to IMT-2000/FPLMTS) of this handbook will also be issued in 1997 or early 1998.

- b) 2 Under preparation
"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 1998.

c) Recommendations (M-series)

- c) 1 Question 209/8
– Recommendation 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"
– Recommendation 1042 issued 1994: "Disaster communications in the amateur and amateur satellite services"
- c) 2 Question 48/8
The 1994 M-series - "Amateur service and amateur satellite service":
– Recommendation M.1041: "Future Amateur Radio System (FARS)"
– Recommendation M.1042: See also Question 209
– Recommendation M.1043: "Use of the amateur and amateur satellite services in the developing countries"
– Recommendation M.1044: "Frequency sharing criteria in the amateur and amateur satellite services"
- c) 3 Question 77/8
Rec. M.819-1 "Future Public Land Mobile Telecommunication Systems (FPLMTS) for developing countries".
Revision 2 of Recommendation M.819-2 was adopted by Study Group 8 taking into consideration the editorial amendments proposed by the ITU-D Working Party A/2 meeting in October 1996.
- c) 4 Question 218/8
Rec. M

N.B.

The follow-up of revised Recommendations and/or new Recommendations adopted by the last meeting of Study Group 8 in June 1997 is worth mentioning; they are related to relevant Resolutions and Recommendations adopted at WRCs (e.g. Resolution 716 and Recommendation 717, both adopted at WRC-95):

- a) Recommendation ITU-R IS 1141 (Revision) - "Sharing in the 1-3 GHz Frequency Range between N-GSO space stations operating in the MSS and stations in the FS".
b) Recommendation ITU-R IS 1142 (Revision) - "Sharing in the 1-3 GHz Frequency Range between GSO space stations operating in the MSS and stations in the FS".
c) Recommendation ITU-R IS 1143 (Revision) - "System specific methodology for coordination of N-GSO space stations (space-to-earth) operating in the MSS with the FS".
d) Recommendation ITU-R [Doc. 8/77 (New) - "The basis of a methodology to assess the impact of interference from a TDMA/FDMA N-GSO MSS satellite system operating in the 2 GHz range on the performance of line-of-sight FS receivers".

STUDY GROUP 9 (Fixed services)

a) Questions

- Q.146/9 Improvements in the performance and efficiency of HF radiotelephone circuits
Q.125-3/9 Point-to-multipoint radio systems
Q.208/9 Necessary planning tools to assist those administrations considering a replanning of their terrestrial fixed network with 2 GHz range

The Rapporteurs' Group proposed the addition of a new Question:

- Q.205/9 Technical and operational implications of using discrete blocks of spectrum by adaptive HF systems

b) Handbooks and/or the equivalent

- b) 1 Issued
b) 1.1 "Digital radio-relay systems". A very important handbook, addressing also the needs of developing countries, issued in 1997.
b) 2 Under preparation
b) 2.1 "HF adaptive systems", requested by the Development Sector. It is expected to be published early 1999.

c) Recommendations (F-series)

- c) 1 Question 125/9
– Recommendation 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)
– Recommendation F.1098-1: "Radio frequency channel arrangements for radio-relay systems in the range 1900-2300 MHz"
– Recommendation F.1242: "Radio frequency channel arrangements for radio-relay systems in the range 1350-1530 MHz"
– Recommendation F.1243: "Radio frequency channel arrangements for radio-relay systems in the range 2290-2670 MHz"
– Recommendation F.755/1: "Point-to-multipoint systems used in the fixed service" (revision)
– Recommendation F.756: "TDMA point-to-multipoint systems used as radio concentrators" (new)
– Recommendation F.1104: "Requirements for point-to-multipoint radio systems used in the local grade portion of an ISDN connection"
c) 2 Question 146/9
– Recommendation F.335/2: "Use of the radio links in the international telephone circuits"
– Recommendation F.455/2: "Improved transmission systems for HF radio-telephone circuits"
– Recommendation F.480: "Semi-automatic operation on HF radio-telephone circuits. Devices for remote connection to an automatic exchange by radio-telephone circuits" (new)
– Recommendation F.1111/1: "Improved Lincompex systems for HF radio-telephone circuits" (revision)

- c) 3 Question 208/9
– Recommendation ITU-R 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"

STUDY GROUP 10 (Broadcasting service - Sound)

a) Questions

- Q.64/10 System design for HF broadcasting
Q.65-1/10 Short-distance broadcasting in band 7 (HF) in the tropical zone
Q.73-1/10 Sound broadcasting in band 8 (VHF) in the tropical zone

NOTE – Digital broadcasting systems: work is currently in progress on the following three issues:

- 1) digital sound broadcasting system standards at frequencies below 30 MHz;
- 2) planning for digital sound broadcasting at various frequency bands;
- 3) spectrum management for digital sound broadcasting.

Any questions in the above three areas will be picked up and any other issues regarding digital broadcasting systems is to be addressed in Part d) of Question 1/2.

b) Handbooks and/or the equivalent

- b) 1 Issued
- b) 1.1 ITU-R special publication on "Digital Sound Broadcasting (DSB)" (1995).
- b) 1.2 "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).
- b) 2 Under preparation
- b) 2.1 "HF broadcasting systems". A very useful handbook for the Development Sector. It is expected to be published by the end of 1997 or beginning 1998.
- b) 2.2 "LF and MF sound broadcasting systems". A very useful handbook for the ITU-D. Its publication is foreseen to be in 1998 by the Radiocommunication Sector.

c) Recommendations (BS-series)

There are no Recommendations relevant to the three Questions since the three of them called for handbooks.

- c) 1 Question 64/10
The handbook mentioned under item b) 2.1 is the answer to this Question.
- c) 2 Question 65-1/10
This Question calls for a handbook also. The handbook mentioned under item b) 2.1 will cover also Question 65-1/10 as regards the sound broadcasting in the tropical zones.
- c) 3 Question 73-1/10
This Question calls for a handbook also. However, in Study Group 10 there is no Group yet responsible for such a handbook. It is proposed that Working Party A/2 will discuss this matter in order to take appropriate action.

d) Conclusion

Proper coordination with the Rapporteurs' Group for Question 8/2 (public broadcasting) of ITU-D Working Party A/2 is maintained.

STUDY GROUP 11 (Broadcasting service - Television)

a) Questions

No Question was identified. However, all relevant Questions of Working Party 11C on planning of terrestrial digital broadcasting (both sound and television) as well as those Questions of Working Party 10-11S on satellite broadcasting (both sound and television), will be considered under part d) of BDT Question 1/2: "Digital, audio and video broadcasting with related interactivity". Also all relevant Recommendations in response to the relevant Questions of WP 11C and Joint WP 10-11S will be taken into consideration.

b) Handbooks and/or the equivalent

- b) 1 Issued
- b) 1.1 "Television systems used around the world". Still a useful reference.
- b) 1.2 "Digital television signals: coding and interfacing within studios" (1995).
- b) 1.3 "Subjective assessment methodology in television" (1995).
- b) 2 Under preparation
- b) 2.1 "Teletext systems". This handbook is intended for developing countries wishing to introduce such a form of data broadcasting. Publication is expected early 1998.

Study Group 11 also responded positively to the request for the possible development of a handbook on terrestrial television planning taking into consideration digitization of the television signal.

c) Recommendations

None.

d) Conclusion

Proper coordination with the Rapporteurs' Group for Question 8/2 (public broadcasting) of ITU-D Working Party A/2 is maintained.

ANNEX 1 - Part 2

ITU-T Questions of particular concern to developing countries

INTRODUCTION

As agreed by the last meeting of ITU-D Working Party A/2, Part 2 is an update of all Questions with their new reference numbers adopted by the Telecommunication Standardization Conference (WTSC), which took place in October 1996. The Rapporteur has also maintained the old numbering for easy reference and follow-up. However, the final document will in future only carry the new numbers adopted by the WTSC-96.

STUDY GROUP 2 - (Network and service definitions)

a) Questions

- Question 1/2 - Applications of numbering and addressing plans for fixed and mobile services (former Question 5/2)
- Question 10/2- Management and development of PSTN-based telecommunication services (former Question 4/1)
- Question 16/2- Human factors issues in telecommunications affecting multiple services or not related to specific services (former Questions 17/1 and 19/1)
- Question 17/2- Human factors aspects of voice and non-voice services using public terminals (former Question 18/1)

Remarks

- a) As a result of the adoption by the WTSC-96 of Resolution 29 relevant to the alternative calling procedures, new Question 3/2 (former Question 8/2, modified to meet the relevant objectives of Resolution 29 as regards the service quality of networks) is proposed to be included in the list.
- b) A joint Rapporteurs' Group representing Study Groups 2, 3 and 11 (all involved in the application of Resolution 29), was created and met for the first time at the end of May 1997 to tackle the important issue of "call back". This joint Rapporteurs' Group was chaired by the Chairman of Study Group 11, Dr. S. Kano.

b) Handbooks and/or the equivalent

- b) 1 Issued
- b) 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.
- b) 1.2 Instructions for the international telephone service (1993).
- b) 2 Under preparation
- None.

c) Recommendations

- c) 1 for Question 10/2 (former Question 4)
 - 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)
- c) 2 Proposed new Questions (former 16/2 and 17/2)
 - 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)
- c) 3 Question 1/2 (former Question 5/2)
 - E.162: "Capability of seven digit analysis for international E.164 numbers at time T" (new)
 - E.169: "Application of E.164 numbering plan for universal international freephone numbers for international freephone service" (new)
 - E.165-1: "Use of escape code "o" within the E.164 numbering plan during the transition period to implementation of number plan interworking (NPI) mechanism" (new under approval by balloting)
 - E.191: "B-ISDN numbering and addressing" (new under approval by balloting)
 - E.166 X.122: "Numbering plan interworking for the E.164 and X.121 numbering plans" (revision under approval by balloting)

STUDY GROUP 3 (Tariff and accounting principles including related telecommunications economic and policy issues)

a) Questions

- Question 1/3 - Study of economic issues and of the impact of national policies as they relate to the development of telecommunication services and networks (a new Question supported by all delegates of developing countries to WTSC-96, it inherits part of the responsibilities of former Study Group 1. This Question reflected also the relevant parts of Resolution 29 of the WTSC-96).
- Question 2/3 - Reform and development of charging, accounting and settlement principles for the international telephone services (former Question 5, plus relevant parts of former Questions 8, 9, 10 and 23).
- Question 8/3 - 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).
- Question 9/3 - Terms and definitions of Recommendations dealing with charging and accounting principles.

b) Handbooks and/or the equivalent

- b) 1 Three Supplements to Study Group 3 Recommendations are worth mentioning again here. Also, two of them are issued:
 - Supplement 1: "Cost and tariff study method" (1988)
 - Supplement 2: "Methods for carrying out a cost price study by regional tariff groups" (1988).
- b) 2 Under publication

Supplement 3: "Handbook on the methodology for determining costs and establishing national tariffs".

c) Recommendations

- c) 1 Question 2/3 (former Question 5)
- 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).
- c) 2 Questions 8/3 (all emanated from the Regional Tariff Groups, former Questions 13 and 14)
- D.300R: "Determination of accounting rate shares in telephone relations between countries in Europe and the Mediterranean Basin"
 - D.301R: as 300R but for telex
 - D.302R: as 300R but for telegrams
 - D.303R: as 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.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) Conclusion

- d) 1 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.
- d) 2 Study Group 3 is the lead Study Group for implementing both Resolutions 21 and 22 of the Kyoto Plenipotentiary Conference as regards the Standardization Sector:
- Resolution 21 on "Special measures concerning alternative calling procedures on international telecommunication networks"
 - Resolution 22 on "Apportionment of revenues in providing international telecommunications services".
- d) 3 Study Group 3 is the lead Study Group for implementing Resolution 29 of WTSC-96 on alternative calling methods as well as on all studies of economic issues.
- d) 4 The new proposed Question 1/3 is among the important Questions of special concern to the developing countries.

- d) 5 It is worth mentioning that the activities of the Regional Tariff Group for Europe and the Mediterranean Basin was frozen as of mid-1995, given the new regulatory framework in Europe, it became as an ad hoc group which would meet as and when the need arose, based on the proposed new Question 8/2.

STUDY GROUP 4 (TMN and network maintenance)

a) Questions

- Question 1/4 - Terms and definition (former Question 1 with updated text)
Question 3/4 - Maintenance of switched international networks (former Question 18 with updated text).
Question 10/4- Test and measurement techniques and equipment for use in transmission equipment (former Questions 24 with updated text).
Question 13/4- TMN principles, architecture and methodology.

b) Handbooks and/or the equivalent

- b) 1 Issued
"Quality of service and network performance" (1993)
b) 2 Under publication
None.

c) Recommendations

- c) 1 Question 1/4 (former Question 1/4)
– M.60: "Maintenance terminology and definitions"
c) 2 Question 3/4 (former Question 18/4)
None.
c) 3 Question 10/4 (former Question 24/4)
– 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: "Psophometer 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".
c) 4 Question 13/4
– M.3010: "Principles for a Telecommunications Management Network"

Note

This last Recommendation is being revised, enlarged, split into two separate Recommendations to include additionally: management domains, security control access, TMN/IN and Q-adaptor.

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

- O.151 (10/92) "Error performance measuring equipment operating at the primary rate and above"
- O.152 (10/92) "Error performance measuring equipment for bit rates of 64 kbit/s and N x 64 kbit/s"
- O.153 (10/92) "Basic parameters for the measurement of error performance at bit rates below the primary rate"
- O.162 (10/92) "Equipment to perform in-service monitoring on 2048, 8448, 34 368 and 139 264 kbit/s signals"
- O.171 (04/97) "Timing jitter measuring equipment for digital systems"
- O.191 (04/97) "Equipment to assess ATM layer cell transfer performance"

STUDY GROUP 5 (Protection against electromagnetic environment effects)

a) Questions

Question 12/5- 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)

b) Handbooks and/or the equivalent

- b) 1 Issued
- b) 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).
- b) 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.
- b) 2 Under preparation
- b) 2.1 An update. New Volumes II and V of the Directives will be issued in 1997.
- b) 2.2 An update of Volume VI of the Directives as a result of the adoption of the new annex to Recommendation 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.
- b) 2.3 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).
- b) 2.4 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.
- b) 2.5 Possible additional chapters to the handbook "Protection of telecommunication lines and equipment against lightning discharges". Publishing date is not known yet.

c) Recommendations

Not applicable.

d) Remarks

Taking into consideration the importance of the activities of this Study Group to the majority of developing Administrations, Study Group 2/D requested in a liaison statement, the assistance of Study Group 5 to prepare a recommendation or a guideline on how to use the output of this Study Group citing Recommendations, directives, handbook and in which circumstances. The Study Group 5 responded positively in its last meeting in February 1997 and created an Adhoc Group composed of the Vice-chairman, Chairmen of the three Working Parties and some other experts to respond to this request.

The Adhoc Group met for the first time in Budapest (Hungary) in May 1997, and continued working on the guide until it was approved by the Study Group 5 meeting in September 1997. It is now available. It will be updated whenever new or revised SG5 publications are approved.

STUDY GROUP 6 (Outside plant)

a) Questions

- Question 3/6 - Amendments and additions to manuals (former Question 5 with updating)
- Question 5/6 - Optical fibre cable installations (former Question 6 with updating)
- Question 6/6 - Optical fibre cable network maintenance (former Question 8 with updating)

b) Handbooks and/or the equivalent

- b) 1 Issued
 - b) 1.1 "Preservation of wooden poles carrying overhead telecommunication lines" (1974)
 - b) 1.2 "Jointing of plastic-sheathed cable" (1978).
 - b) 1.3 "Jointing of telecommunication cable conductors" (published 1982).
 - b) 1.4 "Outside plant technologies for public networks" (published 1991).
 - b) 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).
 - b) 1.6 "Construction, installation, jointing and protection of optical fibre cables" (published in 1994).
 - b) 2 Under preparation
- None.

c) Recommendations

- c) 1 Question 3/6: none
- c) 2 Question 5/6: none
- c) 3 Question 6/6: none

All these Questions are answered mainly by handbooks; recommendations are under preparation.

d) Remarks

A new Question 12/6 "Trenchless techniques for the construction of underground infrastructures for telecommunication cables installation" was adopted by the WTSC-96 as proposed by the Study Group 6. As a result of its adoption, it will be proposed to the final meeting of ITU-D Study Group 2 to be adopted among those Questions of particular concern.

STUDY GROUP 7 (Data networks and open system communications)

a) Questions

- Question 1/7 - Technical characteristics, classes of services, facilities and categories of access for network providing data communication (continuation of former Question 1)
Question 3/7 - Numbering plan for public data networks (continuation of former Question 3)
Question 15/7 - Directory systems (former Question 15 with parts of former Question 18)

b) Handbooks and/or the equivalent

- b) 1 Issued
None.
b) 2 Under preparation
A handbook on security, expected to be published in 1998.

c) Recommendations

- c) 1 Question 1
- X.1: "International user classes of service in, and categories of access to, public data networks and ISDNs" (revision)
 - X.2: "International data transmission services and optional user facilities in public data networks and ISDNs (revision)
 - X.7: "Technical characteristics of data transmission services" (revision)
- c) 2 Question 3
- X.121: "International number 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)
- c) 3 Question 15
- 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".

All these Recommendations are common texts with their equivalent at ISO/IEC.

STUDY GROUP 8 (Characteristics of telematic systems)

a) Questions

Question 1/8 - Facsimile terminals (former Questions 5 and 9)

b) Handbooks and/or the equivalent

b) 1 Issued

"Individual standardized test charts Nos. 2, 3 and 4 for document facsimile transmission (high quality)", to be used in conjunction with the relevant Recommendations of the corresponding facsimile terminal (a manual to use these test charts is also available).

b) 2 Under preparation

None.

c) Recommendations

c) 1 Question 1 (relevant to former Question 9)

- Amendment 1 to 503: "A document application profile for the interchange of Group 4 facsimile documents". Amendment 2 - Annex B: "Extension for continuous tone colour and grey-scale image document" (new)
- Amendment 2 to 503: "A document application profile for the interchange of Group 4 facsimile" (new)
- Amendment 1 to 521: "Communication application profile BTO for document bulk transfer based on the session service" (new)
- T.563: "Terminal characteristics for Group 4 facsimile apparatus" (new)
- Amendment 1 to T.563 modifying it.

STUDY GROUP 9 (Television and sound transmission)

a) Questions

Question 4/9 - Digital networks carrying sound programme signals for contribution and primary distribution (former Question 38 with updating)

Question 12/9- Digital networks carrying television signals for contribution and primary distribution (former Question 39 with updating)

b) Handbooks and/or the equivalent

b) 1 Issued

None.

b) 2 Under preparation

None.

c) Recommendations

c) 1 Question 12/9 (relevant to former Question 39)

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

c) 2 Question 4/9 (relevant to former Question 38)

- 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)".

STUDY GROUP 10 (Languages for telecommunication applications)

a) Questions

No Question was retained.

b) Handbooks and/or the equivalent

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

- b) 1 CHILL formal definition - Volume I
- b) 2 CHILL formal definition - Volume II
- b) 3 Introduction to the CHILL (1993)

STUDY GROUP 11 (Signalling requirements and protocols)

a) Questions

Question 12/11 - Network signaling for the support of narrow-band ISDN services (merger former Questions 21 and 23)

Question 19/11 - Signalling methods used by alternative calling procedures (new Question generated by WTSC-96, as a result of adopting Resolution 29)

b) Handbooks and/or equivalent

- b) 1 Issued
- b) 1.1 "Guidelines for preparing and conducting field trials of digital switching equipments" (1987)
- b) 1.2 "ISDN field trial guidelines" (1991)
- b) 1.3 "Guidelines for implementing a signalling system No. 7 network" (1991).
- b) 2 Under preparation
- None.

c) Recommendations

c) 1 Question 12/11 (relevant to former Question 23)
– Q.696: "Interworking of signalling systems - logic procedures for interworking of Signalling System No. 7 to R3".

c) 2 Question 19/11
A preliminary report was prepared, identifying the issues

STUDY GROUP 12 (End-to-end transmission performance of networks and terminals)

a) Questions

Question 2/12- Definitions in the fields of telephony, speech signal processing, video signal processing, multimedia terminal equipment and of characteristics of international connections and circuits (former Question 3)

Question 4/12- Updating the handbook on telephony (continuation of former Question 4)

b) Handbooks and/or the equivalent

- b) 1 Issued
- b) 1.1 "Telephony" (published 1993)
- b) 2 Under preparation
- b) 2.1 Updating the handbook referred to in b) 1.1 (see Question 4/12).

c) Recommendations

- c) 1 Question 2/12 (relevant to former Question 17)
 - G.115: "Mean active speech level for announcement and speech synthesis system" (new).
- c) 2 Question 4/12 (relevant to former Question 25)
Updating the handbook will be the answer

STUDY GROUP 13 (General network aspects)

a) Questions

- Question 24/13 - Global information infrastructure - GII (new Question)
- Question 25/13 - GII principles and framework (new Question)
- Question 28/13 - Vocabulary for general network aspects (continuation of former Question 24)

b) Handbooks and/or the equivalent

- b) 1 Issued
None
- b) 2 Under preparation
None

c) Recommendations

- c) 1 Question 24/13
Under preparation
- c) 2 Question 25/13
Under preparation
- c) 3 Question 28/13
 - I.113: "Vocabulary of terms for broadband aspects of ISDN" (revision).

STUDY GROUP 15 (Transport networks, systems and equipment)

a) Questions

- Question 1/15 - Access network transport (new Question)
- Question 2/15 - Characteristics of optical systems in local access networks for transport and distribution (continuation of former Question 24)
- Question 15/15 - Characteristics and test methods of optical fibres and cables (continuation of Question 23)

b) Handbooks and/or the equivalent

- b) 1 Issued
- b) 1.1 "Optical fibres for telecommunications" (published 1984).
- b) 1.2 "Optical fibre system planning guide" (published 1989).

- b) 1.3 "Transmission planning" (published 1993).
- b) 2 Under preparation
None

c) Recommendations

- c) 1 Question 1/15
None
- c) 2 Question 2/15
 - G. 981: "PDH optical fibre systems for the local network" (new)
- c) 3 Question 15/15
 - G.655: "Characteristics of non-zero dispersion single mode optical fibre cable" (new)
 - G. 982: "Optical access networks to support services up to ISDN primary rate or equivalent bit rates" (new).

STUDY GROUP 16 (Multimedia services and systems)

a) Questions

Question 4/16-3 - Modems for switched telephone network and telephone-type leased circuits (continuation of Question 1 of former Study Group 14)

Remark

Taking into consideration the creation of this new Study Group, its Question 1/16 "Audiovisual/multimedia services" is proposed to be included among those Questions of particular concern.

b) Handbooks and/or the equivalent

- b) 1 Issued
None
- b) 2 Under preparation
None

c) Recommendations

- c) 1 Question 1/16
None
- c) 2 Question 4/16
 - V.34 (v.fast): "A modem operating at data signalling rates of up to 28.800 bit/s for use on the general switched telephone network and on leased point-to-point 2-wire telephone-type circuit" (new)
 - V.8: "Procedure for starting sessions of data transmission over the general switched telephone network" (new)
 - V.8bis: "Procedures for the identification and selection of common modems of operation between DCES and between DTES over the general switched telephone network and on leased point-to-point telephone-type circuits"(new)
 - V.61 (V-asvd): "A simultaneous voice plus data modem, etc." (new)
 - V.70 (V-dsvd-s): "Procedures for simultaneous transmission on data and digitally voice signals" (new)
 - V.75 (V-dsvd-c): "DSVD terminal control procedures" (new)
 - V.76 (V-gmnx): "Generic multiplexer using X.42 LAMP based procedure" (new)
 - V.34 (mod): "A modem operating at data signalling rates of up to 33.600 bit/s (revision)



APPENDIX 1
INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION STANDARDIZATION SECTOR
LIST OF SUPPLEMENTS

09/97

SERIES D GENERAL TARIFF PRINCIPLES

Supplements to the Series D Recommendations

- Suppl. 1** (11/88) Cost and tariff study method
Blue Book Fascicle II.1
- Suppl. 2** (11/88) Method for carrying out a cost price study by regional tariff groups
Blue Book Fascicle II.1
- Suppl. 3** (3/93) Handbook on the methodology for determining costs and establishing national tariffs

**SERIES E OVERALL NETWORK OPERATION, TELEPHONE SERVICE,
SERVICE OPERATION AND HUMAN FACTORS**

Supplements to the Series E Recommendations relating to the operations of the international service

- Suppl. 1** (11/88) List of possible supplementary telephone services which may be offered to subscribers
Blue Book Fascicle II.2
- Suppl. 2** (1/94) Various tones used in national networks
- Suppl. 3** (11/88) North american precise audible tone plan
This Supplement is also included in Q.100 series as Supplement 5
Blue Book Fascicle II.2
- Suppl. 4** (11/88) Treatment of calls considered as terminating abnormally
This Supplement is also included in Q.100 series as Supplement 6
Blue Book Fascicle II.2
- Suppl. 5** (10/84) 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
Red Book Fascicle II.2
- Suppl. 6** (11/88) Preparation of information to customers travelling abroad
Blue Book Fascicle II.2
- Suppl. 7** (11/88) Description of INMARSAT existing and planned systems
Blue Book Fascicle II.2

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

- Suppl. 1** (11/88) Table of the Erlang formula
Blue Book Fascicle II.3
- Suppl. 2** (11/88) Curves showing the relation between the traffic offered and the number of circuits required
Blue Book Fascicle II.3
- Suppl. 3** (10/76) Information on traffic routing in the international network
Orange Book Fascicle II.2 Supplement N° 7
- Suppl. 4** (10/76) Use of computers for network planning and circuit group dimensioning
Orange Book Fascicle II.2 Supplement N° 8

Suppl. 5 (11/88) Teletraffic implications for international switching and operational procedures resulting from a failure of a transmission facility

Blue Book Fascicle II.3

Suppl. 7 (11/88) Guide for evaluating and implementing alternate routing networks

Blue Book Fascicle II.3

SERIES F NON-TELEPHONE TELECOMMUNICATION SERVICES

Supplements to the Series F Recommendations

Suppl. 1 (11/88) Definitions relating to telegraph, telematic and data transmission services

Blue Book Fascicle II.4

Suppl. 2 (11/88) Terms and definitions for telex

Blue Book Fascicle II.4

Suppl. 3 (11/88) Outline description of the INMARSAT standard-c system and the services it may support

Blue Book Fascicle II.4

SERIES G TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Supplements to Section 1 of the Series G Recommendations

Suppl. 21 (10/84) The use of quantizing distortion units in the planning of international connections

Red Book Fascicle III.1 page 326

Suppl. 24 (10/84) Consideration concerning quantizing distortion units of some digital devices that process encoded signals

Red Book Fascicle III.1 page 333

Suppl. 29 (3/93) Planning of mixed analogue-digital circuits (chains, connections)

Suppl. 31 (3/93) Principles of determining an impedance strategy for the local network

Suppl. 32 (3/93) Transmission aspects of digital mobile radio systems

Supplements to Sections 2 to 5 of the Series G Recommendations

Suppl. 4 (12/72) Certain methods of avoiding the transmission of excessive noise between interconnected systems

Green Book Fascicle III.2 page 572

Suppl. 5 (10/84) Measurement of the load of telephone circuits under field conditions

Red Book Fascicle III.2 page 295

Suppl. 6 (12/72) Example showing how the total value of line noise specified for the hypothetical reference circuit on open-wire lines might be broken down into its various components

Green Book Fascicle III.2 page 589

Suppl. 7 (12/72) Loss-frequency response of channel-translating equipment used in some countries for international circuits

Green Book Fascicle III.2 page 590

Suppl. 8 (12/72) Method proposed by the Belgian telephone administration for interconnection between coaxial and symmetric pair systems

Green Book Fascicle III.2 page 591

Suppl. 9 (12/72) Roll effect in coaxial pair systems

Green Book Fascicle III.2 page 592

Suppl. 13 (10/76) Noise at the terminals of the battery supply

Orange Book Fascicle III.3 page 664

Suppl. 17 (10/84) Group-delay distortion performance of terminal equipment

Red Book Fascicle III.2 page 311

Suppl. 22 (10/84) Mathematical models of multiplex signals

Red Book Fascicle III.2 page 326

Suppl. 26 (10/84) Estimating the signal load margin of FDM wideband amplifier equipment and transmission systems

Red Book Fascicle III.2 page 344

Suppl. 27 (10/84) Interference from external sources

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

Red Book Fascicle III.2 page 346

Supplements to Section 6 of the Series G Recommendations

Suppl. 11 (11/88) Data on cable ships and submersible equipments of various countries

Blue Book Fascicle III.3

Suppl. 18 (10/84) Information on submarine cables used in deep water

Red Book Fascicle III.2 page 313

Suppl. 19 (10/84) Digital crosstalk measurement (method used by the Administrations of France, the Netherlands and Spain)

Red Book Fascicle III.2 page 326

Suppl. 33 (11/88) Examples of fibre design guidelines (diagrams used in Japan and in the United Kingdom)

Blue Book Fascicle III.3

Supplements to Section 7 of the Series G Recommendations

Suppl. 28 (10/84) 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

Red Book Fascicle III.3 page 397

Suppl. 31 (11/88) Status of work of presently considered digital circuit multiplication equipment (DCME) documents

Blue Book Fascicle III.4

Suppl. 32 (11/88) Transfer of alarm information on 60-channel transmultiplexing equipment

Blue Book Fascicle III.4

Supplements to Sections 8 and 9 of the Series G Recommendations

Suppl. 15 (10/76) Almost-differential quasi-ternary code (ADQ code)

Orange Book Fascicle III.3 page 673

Suppl. 34 (11/88) Temperature in underground containers for the installation of repeaters

Blue Book Fascicle III.5

Suppl. 35 (11/88) Guidelines concerning the measurement of wander

Blue Book Fascicle III.5

Suppl. 36 (11/88) Jitter and wander accumulation in digital networks

Blue Book Fascicle III.5

SERIES H AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Supplements to the Series H Recommendations

Suppl. 5 (10/84) Measurement of the load of telephone circuits under field conditions

Red Book Fascicle III.2 page 295

Suppl. 16 (10/84) Out-of-band characteristics of signals applied to leased telephone-type circuits

Red Book Fascicle III.4 page 191

SERIES M TMN AND NETWORK MAINTENANCE: INTERNATIONAL TRANSMISSION SYSTEMS, TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE AND LEASED CIRCUITS

Supplements to the Series M Recommendations

Technical information

- Suppl. 1.1** (12/72) Prefixes used in the decimal system
Green Book Fascicle IV.2 page 409
- Suppl. 1.2** (12/72) Transmission measurement conversion tables
Green Book Fascicle IV.2 page 409
- Suppl. 1.3** (12/72) The normal (or Laplace-Gauss) distribution
Green Book Fascicle IV.2 page 416
- Suppl. 1.4** (12/72) Methods of quality control
Green Book Fascicle IV.2 page 422
- Suppl. 1.5** (12/72) Mathematical processing of the measurement results of the variations of the overall loss of telephone circuits
Green Book Fascicle IV.2 page 451
- Suppl. 1.6** (12/72) Statistical theory requirements
Green Book Fascicle IV.2 page 459

Measuring techniques

- Suppl. 2.1** (12/72) Some general observations concerning measuring instruments and measuring techniques
Green Book Fascicle IV.2 page 463
- Suppl. 2.2** (12/72) Measurements of loss
Green Book Fascicle IV.2 page 471
- Suppl. 2.3** (12/72) Level measurements
Green Book Fascicle IV.2 page 475
- Suppl. 2.4** (12/72) Measurement of crosstalk
Green Book Fascicle IV.2 page 480
- Suppl. 2.5** (12/72) Measuring errors and differences due to impedance inaccuracies of instruments and apparatus. Use of decoupled measuring points
Green Book Fascicle IV.2 page 482
- Suppl. 2.6** (12/72) Errors in the indications given by level-measuring instruments due to interfering signals
Green Book Fascicle IV.2 page 489
- Suppl. 2.7** (12/72) Measurement of group delay and group-delay distortion
Green Book Fascicle IV.2 page 492
- Suppl. 2.8** (12/72) Measurement of sudden phase changes on circuits
Green Book Fascicle IV.2 page 508
- Suppl. 2.9** (12/72) Vibration testing
Green Book Fascicle IV.2 page 511
- Suppl. 2.10** (12/72) Method for measuring the frequency shift introduced by a carrier channel
Green Book Fascicle IV.2 page 522
- Suppl. 2.11** (11/88) Rapid verification test for echo control devices
Blue Book Fascicle IV.3
- Suppl. 2.12** (12/72) An automatic data acquisition and effective processing procedure for group and supergroup pilot levels
Green Book Fascicle IV.2 page 524
- Suppl. 2.13** (10/76) Loop method for the maintenance of 4-wire telephone-type leased circuits

Orange Book Fascicle IV.1 page 267

Suppl. 2.14 (10/76) Automatic measuring device for carrier systems with a large number of channels

Orange Book Fascicle IV.1 page 268

Suppl. 2.15 (10/76) detection of circuit faults

Orange Book Fascicle IV.1 page 275

Suppl. 2.16 (11/88) Receiving relative levels at renters' premises for international leased circuits used for data transmission

Blue Book Fascicle IV.3

Suppl. 2.17 (11/88) Results of an investigation of the service availability performance of international leased circuits made in 1982

Blue Book Fascicle IV.3

Transmission performance of the international network

Suppl. 4.1 (11/80) Stability of overall loss and psophometric noise: results of routine maintenance measurements made on the international network during the first half of 1978

Yellow Book Fascicle IV.3 page 68

Suppl. 4.2 (11/80) Results and analysis of the 10th series of tests of short breaks in transmission

Yellow Book Fascicle IV.3 page 80

Suppl. 4.3 (12/72) Characteristics of leased international telephone-type circuits

Green Book Fascicle IV.2 page 564

Suppl. 4.5 (12/72) Instructions for making future measurements of the transmission quality of complete connections for recording the results of the measurements

Green Book Fascicle IV.2 page 569

Suppl. 4.6 (12/72) Instructions for making future measurements of the transmission quality of national extensions (excluding subscriber's local lines) and for recording the results of the measurements

Green Book Fascicle IV.2 page 580

Suppl. 4.7 (12/72) Instructions for making future measurements of the transmission quality of international circuits and international centres and for recording the results of the measurements

Green Book Fascicle IV.2 page 582

Suppl. 4.8 (12/72) Results and analysis of tests of impulsive noise

Green Book Fascicle IV.2 page 593

Suppl. 4.9 (10/76) Weighting of measurements relating to the stability of circuits in the international network according to the size of circuit groups

Orange Book Fascicle IV.1 page 283

Suppl. 4.10 (11/80) Transient analogue circuit impairments and their effect on data transmission

Yellow Book Fascicle IV.3 page 86

Miscellaneous

Suppl. 6.1 (12/72) Effect on maintenance of the introduction of new components and of modern equipment design

Green Book Fascicle IV.2 page 620

Suppl. 6.2 (11/88) New operation and maintenance organization in the Milan Italcable intercontinental telecommunications centre

Blue Book Fascicle IV.3

SERIES N MAINTENANCE: INTERNATIONAL SOUND PROGRAMME AND TELEVISION TRANSMISSION CIRCUITS

Supplements to the Series N Recommendations

Suppl. 5.2 (11/88) Setting-up and testing of international videoconference studios

Blue Book Fascicle IV.3

SERIES O SPECIFICATIONS OF MEASURING EQUIPMENT

Supplements to the Series O Recommendations

- Suppl. 3.1** (11/88) Measuring instrument requirements - Sinusoidal signal generators and level-measuring instruments
Blue Book Fascicle IV.4
- Suppl. 3.2** (12/72) Noise measuring instruments for telecommunication circuits
Green Book Fascicle IV.2 page 534
- Suppl. 3.3** (12/72) Principal characteristics of volume indicators
Green Book Fascicle IV.2 page 548
- Suppl. 3.4** (10/76) Consideration of interworking between different designs of apparatus for measuring quantizing distortion
Orange Book Fascicle IV.2 page 85
- Suppl. 3.6** (11/88) Crosstalk test device for carrier-transmission on coaxial systems
Blue Book Fascicle IV.4
- Suppl. 3.7** (11/88) A measuring signal (multitone test signal) for fast measurement of amplitude and phase for telephone type circuits
Blue Book Fascicle IV.4
- Suppl. 3.8** (11/88) Guidelines concerning the measurement of jitter
Blue Book Fascicle IV.4

SERIES P TELEPHONE TRANSMISSION QUALITY, TELEPHONE INSTALLATIONS, LOCAL LINE NETWORKS

Supplements to the Series P Recommendations

- Suppl. 1** (10/76) Precautions to be taken for correct installation and maintenance of an IRS
Orange Book Fascicle V
- Suppl. 10** (11/88) Considerations relating to transmission characteristics for analogue handset telephones
Blue Book Fascicle V
- Suppl. 11** (12/94) Some effects of sidetone
- Suppl. 16** (11/88) Guidelines for placement of microphones and loudspeakers in telephone conference rooms and for group audio terminals (GATs)
Blue Book Fascicle V
- Suppl. 19** (11/88) Information on some loudness loss related ratings
Blue Book Fascicle V
- Suppl. 20** (3/93) Examples of measurements of handset receive-frequency responses: dependence on earcap leakage losses

SERIES Q SWITCHING AND SIGNALLING

Supplements to the Series Q.100 Recommendations

- Suppl. 1** (12/72) Report on the energy transmitted by control signals and tones
Green Book Fascicle VI.4
- Suppl. 2** (11/88) Characteristics of speech interpolation systems affecting signalling
Blue Book Fascicle VI.1
- Suppl. 3** (11/88) Information received on national voice-frequency signalling systems
Blue Book Fascicle VI.1
- Suppl. 7** (12/72) Measurements of impulsive noise in a 4-wire telephone exchange
Green Book Fascicle VI.4

Suppl. 8 (12/72) Signalling for demand assignment satellite systems
Green Book Fascicle VI.4

Supplements to the Series Q.300 and Q.400 Recommendations

Suppl. 1 (11/88) Line signalling for Dc lines with System R2 interregister signalling
Blue Book Fascicle VI.4

Suppl. 2 (11/88) Both-way working of the analogue line signalling version of Signalling System R2
Blue Book Fascicle VI.4

Suppl. 3 (11/88) Use of the analogue line signalling version on 2048 kbit/s PCM transmission systems
Blue Book Fascicle VI.4

Suppl. 4 (11/88) In-band line signalling for 3 kHz spaced channels
Blue Book Fascicle VI.4

Suppl. 5 (11/88) Line signalling (analogue version) with metering
Blue Book Fascicle VI.4

Suppl. 6 (11/88) Line signalling (digital version) with metering
Blue Book Fascicle VI.4

Suppl. 7 (11/88) Semi-compelled and non-compelled multifrequency interregister signalling for national satellite applications based on System R2 interregister signalling
Blue Book Fascicle VI.4

Supplements to the Series Q.500 Recommendations

Suppl. 1 (11/88) Definition of relative levels, transmission loss and attenuation/frequency distortion for digital exchanges with complex impedances at Z interfaces
Blue Book Fascicle VI.5

Suppl. 2 (11/88) Impedance strategy for telephone instruments and digital local exchanges in the British Telecom Network
Blue Book Fascicle VI.5

Supplements to the Series Q.700 Recommendations

Suppl. 1 (10/95) Signalling System No. 7 testing and planning tools

SERIES S TELEGRAPH SERVICES TERMINAL EQUIPMENT

Supplements to the Series S Recommendations

Suppl. 1 (11/88) Minimal specifications for the bilingual (arabic/latin) teleprinter
Blue Book Fascicle VII.1

SERIES U TELEGRAPH SWITCHING

Supplements to the Series U Recommendations

Suppl. 1 (11/88) Signalling characteristics and timing of the MARISAT telex service
Blue Book Fascicle VII.2

Suppl. 2 (11/88) Signalling arrangements in the Maritime Satellite Telex Service via the MARISAT system
Blue Book Fascicle VII.2

Suppl. 3 (11/88) Telex signalling arrangements in the Nordic Maritime Satellite coast Earth Station
Blue Book Fascicle VII.2

**SERIES V DATA COMMUNICATION OVER THE TELEPHONE
NETWORK**

V.25 *ter* Supplement (4/95) Supplement to ITU-T Recommendation V.25 *ter*
