



RADIOCOMMUNICATION ADVISORY GROUP

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Director, Radiocommunication Bureau

1997 OPERATIONAL PLAN OF THE RADIOCOMMUNICATION SECTOR

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1 Introduction

This operational plan, for the ITU-R Sector and in particular the Radiocommunication Bureau, sets out, in an open and transparent way and in some detail, the activities planned to be undertaken during 1997. In the Bureau, the activities fall into two general categories: ongoing work and special projects or studies having a fixed duration. This document is an important tool for the effective management of the Bureau's activities. The progress in the organizational units of the BR in achieving these objectives are assessed by means of their quarterly reports, which are an additional internal management tool. The operational plan flows from the strategic plan as adopted by the Kyoto Plenipotentiary Conference in its Resolution 1.

The year 1997 will again be challenging for the Bureau and for the Sector as a whole. In terms of ongoing activities, the workload placed upon the Bureau, much of which is treaty-based, is still increasing. In addition to these growing demands in the ongoing work, work is also continuing on the special projects and studies requested by the Radiocommunication Assembly and World Radiocommunication Conference. Greater use of computer-based tools is being pursued and further organizational changes are being made in the Bureau to improve efficiency. Additional budgetary resources have been made available by the Council and are being implemented. The priorities set in preparing the first operational plan (for 1996) are still valid and will have an impact, in particular, on the space-related activities. Thus, this plan again sets out areas where activities may have to be curtailed. The Radiocommunication Advisory Group (RAG) is invited to review this plan and the priorities set out in it. The Bureau will do its best to maintain the high level of quality for which it is known but, generally speaking, there is no doubt that the level and quality of service in 1997 will not be as one would wish.

2 Treatment of frequency notifications

2.1 Space notifications

2.1.1 Tasks and objectives

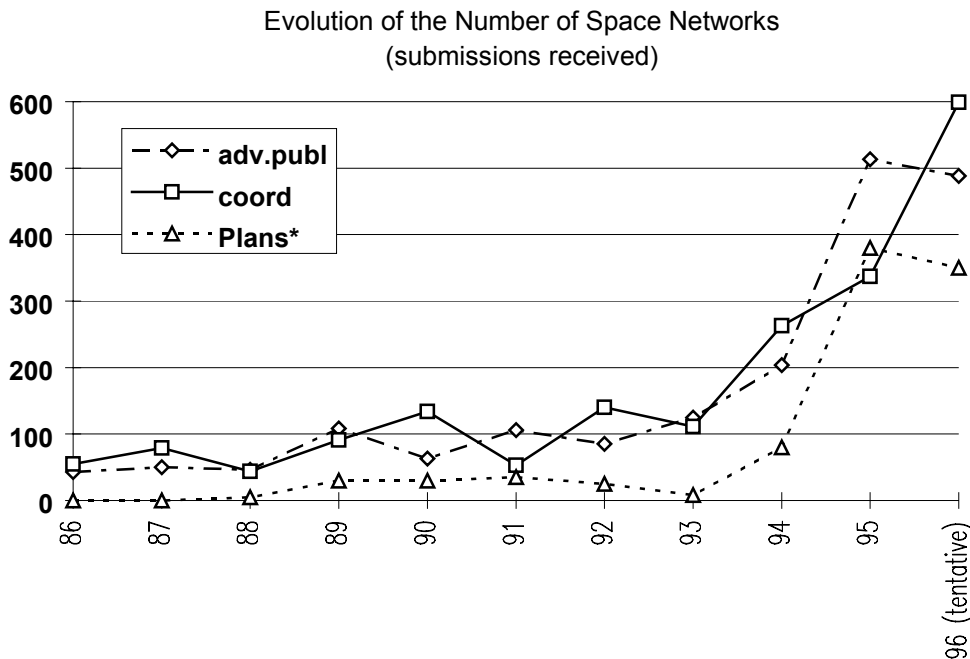
In 1997, the Space Services Department will continue to receive, capture, validate and publish notified data elements through the Space Network System (SNS) containing all space-related data (characteristics of stations in space networks) as well as undertake the regulatory and technical examination of the notices for satellite networks with a view to their inclusion in the Master International Frequency Register (MIFR). This includes publication of advanced information, coordination requests, Plan modifications, etc. The general objective is to process the above information in a timely manner.

2.1.2 Workload situation

Over the last several years, there has been a regular increase in the workload associated with space services with a very high level of increase in 1995 and 1996 (see **Figure 1** below). The increasing number of submissions is accompanied by a growing complexity of the space networks reflecting, on the one hand, technological evolution and, on the other hand, the requirements of recent ITU conferences for the provision of more detailed data elements used in more complex examinations. The problem of over-filing has been recognized by the Kyoto Plenipotentiary Conference in its Resolution 18 and the need to address this problem is urgent. It is hoped that WRC-97 will implement a much needed reform of the satellite coordination and notification process. In addition, there is also an increasing workload associated with conference decisions. Currently, the most

resource demanding post-Conference activity is the BSS planning exercise requested by Resolution 531 of WRC-95.

FIGURE 1



Due to the above evolution and in spite of the measures taken in the Bureau in 1995/1996 and the resulting higher rate of production, delays in the processing of material received will unfortunately remain a problem in 1997. The most critical areas of delay will concern the satellite network coordination (examination and publication of AR11/C Special Sections) and Plan modification where the publication delay (at the beginning of 1997) will still be about 16 to 18 months. The following table summarizes the expected response times (processing delays between dates of receipt and publication including all necessary technical and regulatory examinations) in the main sectors of space activities:

	Article 11, RS33, RS46		Article 13	AP30/30A	AP30B
	adv. publication	coordination	recording	plan mod.	conversion
response time	4-5 months	18 months	12 months	16 months	12 months

2.1.3 Measures taken and to be taken

Several measures have already been implemented or are to be implemented to deal with the above workload.

The increased productivity in the field of processing notices (coordination, notification and Plan modification procedures, data capture, and regulatory and technical examinations) and the accelerated rate of publications or reduction of the cases treated in many areas of work (Article 13, Appendices 30 and 30A will, however, be counterbalanced by the continuing increase of the

workload. The Bureau, in 1997, will continue to implement other measures to cope with this situation of increasing input notice flow in order to diminish the processing delay by the Bureau. Such measures are: electronic submission of information, direct "read only" access to the MIFR and to satellite network files.

As an important part of the processing of notices concerns data capture and validation of the notice forms received, increased efficiency is expected from the use of the PC-based system for electronic notification, especially with substantial automated validation being effected by the Administration prior to submission of the notice. This system has an additional advantage in that it should also facilitate the exchange of data relating to the coordination between Administrations. This measure has been associated with the development of new notice forms (revised Appendix S4) which reflect changes resulting from conference decisions, database rationalization and experience gained in their use.

The accelerated processing of an increasing number of notices in the area of space plans is closely related to the WRC-97 Conference preparatory activities. The Bureau will endeavour to further reinforce this domain in SSD.

2.1.4 Priorities

Present studies on trends of the volume of satellite coordination submissions (for Resolution 18 and other studies) and the growing number of advance publications already received, indicate that there will be no reduction in the number of coordination requests to be processed by the Bureau in 1997. It also expected that the use of electronic notification and access to the ITU database by administrations will not yield any significant alleviation in the very short term. Nevertheless, in order to absorb the workload in the most critical areas and to have a more balanced situation of the response times in processing notices, the priorities set for 1996 for the space-related activities will have to be continued for 1997. They are as follows:

First level of priority (top priority):

- processing of space coordination requests (AR11/C, RS46/C);
- processing of BSS Plan modifications (AP30/30A and implementation of Resolution 531, paragraph 5.3);
- BSS planning exercises (Resolution 531, paragraph 5.4);
- procedural (regulatory) assistance to administrations of developing countries and those having no or difficult relations with whom coordination is required.

Second level of priority (reduced activities) which may suffer some delays:

- processing of Article 13 notices;
- advance publication (AR11/A, RS46/A);
- Appendix 30B;
- participation in ITU-R Study Groups;
- assistance to administrations in complex technical calculations (with some exceptions for developing countries).

The above levels of priorities will be kept under constant review and, according to the evolution of the workload/resource situation, will be revised as appropriate.

2.2 Terrestrial notifications

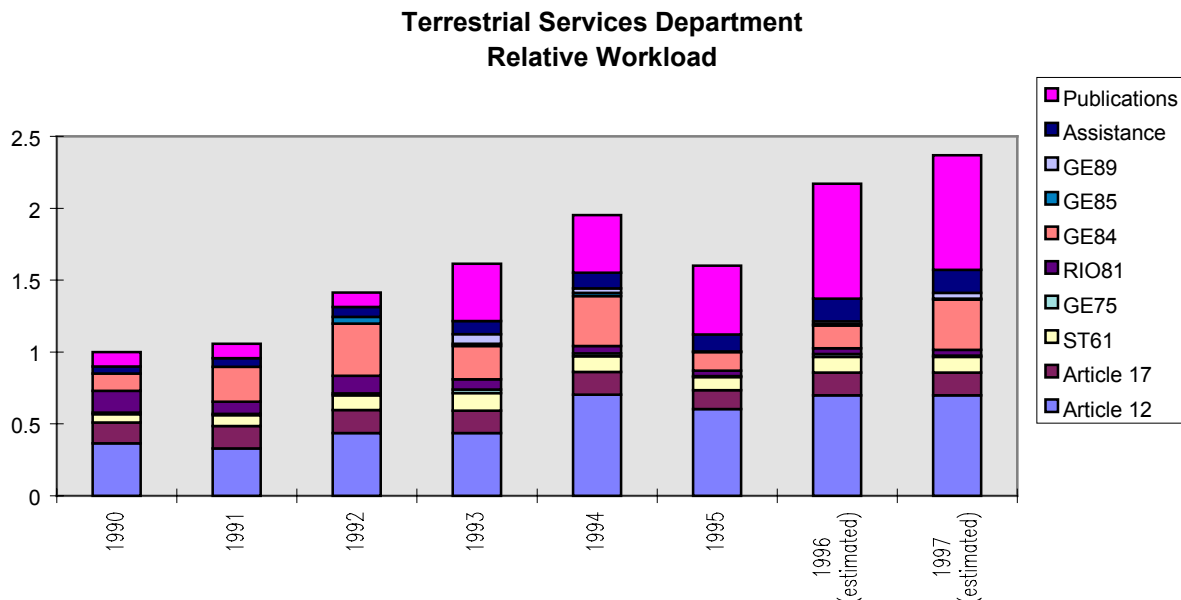
2.2.1 Tasks and objectives

In 1997, the Terrestrial Services Department (TSD) will continue to process notices for terrestrial services, i.e. capture and validate data, apply the regulatory procedures including examination of conformity with the Radio Regulations and various frequency assignment and allotment plans as contained in the Radio Regulations or annexed to Regional Agreements. It also involves, for specific bands, the calculation of probability of harmful interference. These notices cover the terrestrial broadcasting services, the fixed and mobile services as well as other services concerning radionavigation, standard frequency and time signal, and meteorology. As a result of successful regulatory and, where required, technical examinations, the assignments are recorded in the Master International Frequency Register.

The above will be the main objectives for 1997. Apart from these main objectives, other objectives pursued in the Terrestrial Services Department concern assistance to administrations, monitoring, allocation of international means of identification, seminars, editing and publication of service documents and ITU-R Recommendations, Handbooks, etc. These are reported on in the respective sections of this operational plan.

As reflected in **Figure 2** below, the workload over the last six years has considerably increased (more than 100% between 1990 and 1996). This trend is expected to continue in 1997 with the prospect of, as a result of decisions taken by WRC-95, an increase in the number of terrestrial notifications in the bands shared with the space services.

FIGURE 2



2.2.2 Tasks related to registration and publication of assignment notices

It is estimated that some 50 000 notices (RR Article 12) will be received in 1997. The Bureau expects to process each notice within a maximum regulatory period of six weeks following its receipt.

In addition, some 7 800 notices dealing with the various plans (**AP25, AP26, AP27, ST61, GE75, RJ81, GE84, GE85MM, GE85EMA, GE89, RJ88**) will require treatment in 1997. The Bureau should be able to treat each notice within a maximum regulatory period of four weeks following its receipt. However, owing to the priority given to the development of the new planning system for HFBC, as proposed by TG 10/5, some backlog may arise.

The processing of notices for the High Frequency Broadcasting Service (HFBC) is currently governed by **RR Article 17**. This processing, which deals with 40 000 notices per year, is carried out on a weekly basis resulting in the publication, every month, of the Tentative Schedule on diskette.

The organization of regular **monitoring** reports will be carried out on a yearly basis.

Most of the above procedures are currently under review as part of the development of a new frequency management system for the terrestrial services (**TerRaSys**). More resources will have to be devoted in 1997 for the provision of specific user requirements, review of design concepts and testing of software developed to ensure that the project will be completed as originally foreseen before the end of 1998. The rapid evolution of computer technology over the last 15 years, when the existing system was introduced, facilitates the adoption of new approaches which, however, will necessitate staff training and adaptation.

2.2.3 Tasks related to broadcasting services

The regulatory and technical examination of broadcasting notices to modify the broadcasting **Plans** will continue to be carried out within a period of three months following the receipt of complete notices. **Table 1** shows the estimated number of notices foreseen in 1997.

TABLE 1
Estimated number of notices for broadcasting Plans

Plan	No. of notices
ST61	3600
GE75	100
RJ81	200
GE84	3500
GE89	400

In addition, approximately 6 000 notices will be examined through the application of RR Article 12 for their conformity to the Plan and/or to other provisions of the Agreement before they are recorded in the Master International Frequency Register.

The technical examination of high-frequency broadcasting notices under Article 17 will include the identification of severe incompatibilities, the selection of appropriate bands and frequencies when requested by administrations and the preparation of the Tentative Schedules.

Some 80 notices will require the application of Article 14 for the coordination of broadcasting assignments in the bands shared with broadcasting or other services.

2.2.4 Tasks related to the fixed and mobile services

Notices received under **RR Article 12** for the fixed and mobile services will be examined within the regulatory time-frame established in the Radio Regulations. In 1997, TSD will continue to be

responsible for the examination of terrestrial notices for assignments in the bands shared with the space services. Although WRC-95 decided to suspend the technical examinations in the non-planned bands below 28 000 kHz, this examination is still required for the planned bands.

Other regulatory procedures related to the fixed and mobile services and described in the Radio Regulations as well as in relevant Resolutions and Regional Agreements are expected to generate the workload indicated in **Table 2**.

TABLE 2
Estimated number of notices for fixed and mobile services under Regional Agreements and certain Resolutions

RR Provision	No. of notices
AR14	10
AR16	30
GE85	20
RS300	50
RS339	10
RC402	10

2.2.5 Tasks related to the administrative and operational procedures

The Bureau will continue to provide assistance to administrations in the application of administrative and operational procedures which constitute a significant part of the Radio Regulations. It is expected that, in 1997, the Bureau will receive about 200 requests dealing with the allocation of series of call signs, blocks of selective call numbers and Maritime Identification Digits (MID). This examination is undertaken in accordance with Article 25, Appendix 43 and Resolution 13 (WARC-79) as well as ITU-R and ITU-T Recommendations.

Other requests under Articles 55 and 56 (30 cases), AP43 (30 cases), Resolution 331 (10 cases), and Article 32 (10 cases) are also foreseen.

3 Meetings and conferences

3.1 Study Group Activities

The complete schedule of all 1997 ITU-R meetings is contained in the Corrigendum 1 to BR Administrative Circular CA/27 of 11 July 1996 and can be found on the World Wide Web at:

http://www.itu.int/bredh/calendar/cal97_e.htm.

3.1.1 Activities related to Study Group 1 - Spectrum Management

In 1997, Study Group 1 on spectrum management will organize its work through Task Groups 1/4 and 1/5, and Working Parties 1A, 1B and 1C. The Questions assigned to Study Group 1 are the main basis of its activities in this period.

At its 1997 meeting, the Study Group will consider the executive reports from Task Groups/Working Parties which will meet immediately before Study Group 1. It is expected that the following draft new and revised ITU-R Recommendations are expected to be considered and adopted by Study Group 1:

- Efficient spectrum utilization using probabilistic methods (new Recommendation);
- Frequency and distance separations (revision of Recommendation ITU-R SM. 337-3);
- Definition of spectrum use and efficiency of a radio system (revision of Recommendation ITU-R SM.1046).

Following the development of guidance for the formal and informal exchange of information through electronic means to share spectrum management information, the Task Group 1/4 (Electronic exchange of spectrum management information) will in 1997 provide a comprehensive data dictionary to aid the process of coordination and the development of a Draft Revision of Appendix S4.

Working Party 1A (Engineering principles and techniques, including computer-aided analysis for effective spectrum management) will complete at a special meeting its input to CPM-97 on Appendix 28. Other activities of this Working Party are expected to focus, in 1997, on the development of new Recommendations on long term strategies for spectrum utilization, design guidelines for an Advanced Automated Spectrum Management System (ASMs), main parameters for an adaptive HF system, classification and designation of emissions and alternative allocation methods.

Working Party 1B (Principles and techniques for spectrum planning and sharing) will continue to study spectrum economics and spectrum use above 20 GHz, the latter in collaboration with Study Group 3. A Report on economic and alternative spectrum management issues in response to Questions ITU-R 206/1, 207/1 and 208/1 will be developed by the Rapporteurs' Group before the next meeting of Working Party 1B.

Working Party 1C (Techniques for spectrum monitoring) will finalise a number of ITU-R Recommendations, in particular one on a method and procedure for determining the accuracy of direction finding bearings at monitoring stations. Working Party 1C, jointly with Working Party 1A, will continue to consider the issue of classification and designation of emissions according to Question ITU-R 1-2/1.

3.1.2 Activities related to Study Group 3 - Radiowave propagation

Working Parties 3J (Propagation fundamentals), 3K (Point-to-area propagation), 3L (HF propagation) and 3M (Point-to-point and Earth-space propagation) will each meet during the "block" meetings in January 1997. Working Party 3K will also hold a meeting in September 1997. The Study Group will meet in January 1997, immediately following the block of WPs; its main business will be to adopt 3 new and 11 revised Recommendations in accordance with § 10.3, Resolution ITU-R 1, and to consider the adoption of Recommendations prepared during the WP meetings held immediately prior to the SG, in accordance with § 10.4, Resolution ITU-R 1.

Further to the material produced during 1996 in the context of preparing for WRC-97, the WPs will provide additional information and advice requested by other SGs, WPs and TGs to assist their preparatory work for CPM. Particular emphasis will be placed on propagation issues concerning Appendix S7 (Agenda item 1.3).

Work will be undertaken to develop new and revised Recommendations relating to: (WP 3J) vegetation attenuation, obstacle diffraction, worldwide mapping of radiometeorological parameters,

digital terrain maps, risk analysis and variability, refraction on Earth-space paths, radiometric estimation of atmospheric attenuation; (WP 3K) outdoor short-path propagation prediction, propagation factors affecting digitally modulated systems at LF and MF, propagation factors influencing land mobile systems, point-to-area prediction 1-3 GHz; (WP 3L) system performance and reliability for digital modulation techniques at HF, HF signal intensity prediction, MUF and ray-path determination, reliability and compatibility; (WP 3M) land mobile-satellite propagation, aspects concerning the land-mobile satellite service Earth station coordination, Earth-space path prediction, propagation effects on the performance of high capacity digital terrestrial links. In certain cases, material will be submitted to Study Group 3 in January 1997, under the provisions of § 10.4, Resolution ITU-R 1.

The handbook "The ionosphere and its effects on terrestrial and Earth-space radiowave propagation from VLF to SHF" will be completed and published in 1997.

All WPs will continue to collect measurement data, particularly from tropical, low latitude regions, to augment the existing databanks of Study Group 3 used in the development and testing of prediction methods. WP 3L (with the assistance of the Bureau) will continue to support, and aim to augment, the SG 3 "HF field strength measurement campaign". (See also paragraph 4.1.3 below concerning propagation).

3.1.3 Activities related to Study Group 4 - Fixed-satellite service

Working Parties 4A (Efficient orbit/Spectrum utilization), 4B (Systems, Performance, Availability and maintenance), 4 SNG (Satellite news gathering, outside broadcast via satellite) and 4-9S (Frequency sharing between the FSS and the FS) will each meet during the block meetings of Study Group 4 in January 1997. The meeting of SG 4 will be held immediately following the meetings of WPs 4A, 4B and 4 SNG. The joint meeting of SGs 4 and 9 will be held immediately following the meeting of WP 4-9S. The main task of the SG 4 meeting and joint SGs 4 and 9 meeting will be to adopt the draft new and revised Recommendations in accordance with § 10.3, Resolution ITU-R 1 and to consider the adoption of Recommendations prepared during the WP meetings immediately preceding the SG meeting, in accordance with § 10.4, Resolution ITU-R 1.

Working Parties 4A and 4-9S are involved in the preparation of material for WRC-97. The meetings of WPs 4A and 4-9S will finalise the draft text elements for the CPM-97 Report and a number of draft new Recommendations, resulting from 1997 Conference-related Questions, to be referenced in the CPM-97 Report. These draft new Recommendations will be considered by the SG 4 meeting and the joint SGs 4 and 9 meeting in January 1997.

Working Party 4A is also involved in studies on the technical and operational aspects of major issues to be considered in the review of the ITU's frequency coordination and planning framework for satellite networks (Resolution 18, Kyoto, 1994). The SG 4 meeting will adopt the draft new Recommendations on Resolution 18 issues and provide a contribution to the Director's report to WRC-97 on Resolution 18.

New and revised Recommendations will be prepared mainly relating to frequency sharing of NGSO MSS feeder links between themselves, with GSO FSS networks, Aeronautical Radionavigation Satellite Networks and Radioastronomy, sharing between stations in the Inter-Satellite Service and Earth Exploration Satellite Service near 60 GHz and 118 GHz, NGSO interference criteria, performance requirements for satellite systems operating above 15 GHz and for satellites handling ATM traffic. In the context of SNG, Recommendations will be developed for the handling of HDTV and digital signals via satellite. In collaboration with SG 9 (WP 4-9S) Recommendations will be developed on frequency sharing between NGSO MSS feeder links and radio-relay systems,

sharing between NGSO FSS networks and radio-relay systems pfd limits and e.i.r.p. limits to facilitate sharing and on the determination of coordination area for FSS earth stations operating with NGSO satellites and stations in the fixed service. A third edition of the Handbook on satellite communications (Fixed-satellite service) will be prepared to include recent developments in the field of satellite communications. The complete text will be finalised and approved by correspondence later in 1997.

3.1.4 Activities related to Study Group 7 - Science Services

In 1997, the work of Study Group 7 will be continued through Working Parties 7A, 7B, 7C and 7D. Compatibility between active spaceborne sensors and systems in the radionavigation and radiolocation services is studied jointly with Study Group 8 by JWP 7-8 R and will be completed by the beginning of 1997.

Working Party 7A (Time signals and frequency standard emissions) will focus on the development of the revision of Recommendation ITU-R TF.538 -3 "Frequency and phase stability measures". The cooperation between Working Party 7A and ITU-T Study Group 13 on the use of new digital telecommunication networks for accurate time and frequency transfer will continue.

Working Party 7B (Space radio systems) will cover deep and near space research, data relay satellites, space operations and inter satellite links. A number of new Recommendations will be developed on the feasibility of frequency sharing between the space research service and other services in bands near 14 and 15 GHz, preferred frequency bands and typical bandwidths for the transmission of space VLBI data, typical characteristics of data relay satellite systems and high data rate transmission in future lunar missions.

Working Party 7C (Earth exploration satellite systems and meteorological systems) will prepare draft new or revised recommendations on the sharing between the NGSO mobile satellite service downlink and the Earth exploration satellites (Earth-to-space) meteorological satellite (Earth-to-space) in the band 401-403 Mhz, develop sharing and coordination criteria for data dissemination and direct data readout systems in the Earth exploration-satellite and meteorological-satellite services using satellites in geostationary orbit and on the feasibility to share between radionavigation-satellite service receivers and active spaceborne sensors in the band 1 215 - 1 260 MHz.

Working Party 7D (Radio astronomy) will concentrate its studies on the percentage of time for harmful interference acceptable by the radio astronomy service, the protection of radioastronomical measurements above 60 GHz and on the quasi-quiet zone in the vicinity of the L₂ sun-earth lagrangian point.

Joint Working Party 7-8 R (Compatibility within active spaceborne sensors and systems in the radionavigation and radiolocation services) will complete the studies to provide the technical basis for decisions on certain agenda items of WRC-97. Documents developed within the framework of this Joint Working Party may also be used for deriving respective ITU-R Recommendations.

3.1.5 Activities related to Study Group 8 - Mobile, Radiodetermination, Amateur and Related Satellite Services)

Fewer meetings are foreseen for 1997 than were held in 1996. Study Group 8 plans to meet for 3½ days with a view to preparing for RA-97; TG 8/1 (IMT-2000/FPLMTS) meets twice (outside Geneva) and WPs 8A (land mobile service and amateur service) and 8D (MSS, Radiodetermination Satellite Service, etc.) have additional meetings immediately before SG 8. No meetings are planned

either for WP 8B (maritime and mobile aeronautical services) or for WP 8C (Radiodetermination Service).

The ad-hoc group to review the structure of SG 8 will continue to work by correspondence and will prepare a report for consideration of SG 8 at its meeting in June 1997.

Material for new and revised Recommendations on paging and dispatch traffic systems, free circulation of terminals for GMPCS as well as in the evaluation of radio transmission technologies (RTTs), spectrum matters and modularity for IMT-2000 will be prepared. Once the concerned Recommendation is approved by correspondence by February 1997, the activities relating to the evaluation of RTTs for IMT-2000 will be triggered by a Circular Letter inviting submission of candidate technologies. The whole evaluation process, expected to last 3 years, will be very demanding on the BR secretariat for the paper and electronic handling of the related information, including filing and posting on TIES/ITUDOC. Support will continue to be provided for the promotion of the on-going work in the ITU-R on development of IMT-2000 standards by means of improvements to the IMT-2000 Web page, revision of the IMT-2000 brochures, development of a new IMT-2000 logo, and preparation of supporting material for external conferences related to the subject.

The Land Mobile (including Wireless Access) Handbook Volume 1 will be translated and published in 1997.

Work will continue on the Mobile-Satellite Communications Handbook.

3.1.6 Activities related to Study Group 9 -Fixed service

Working Parties will meet in January 1997 followed by a Study Group 9 meeting to adopt draft Recommendations prepared by Working Parties. The preparation of supporting information for various agenda items of WRC-97 involves Working Party 9B in the preparation of material on the identification of suitable frequency bands above 30 GHz for use by the fixed service for high-density applications, Working Party 4-9S to provide material on sharing between the fixed and the fixed-satellite services in certain bands (non-GSO FSS and non-GSO MSS feeder links), Working Party 9C will prepare an input to Working Party 1A concerning adaptive MF/HF systems and Working Party 9D is involved in various WRC-97 agenda items. Most of the work will be conducted through joint Rapporteur mechanisms and correspondence groups.

Material for new and revised Recommendations will be prepared on the following subjects:

- performance limits to be respected for bringing into service and maintenance of radio-relay systems, error performance objectives for digital radio-relay systems at constant bit rates digital paths (at or above the primary rate and below primary rate) and the availability issue aligned to new Recommendation ITU-T G.827 (WP 9A);
- wireless local loop or wireless access including the amplification of draft Recommendation on RLANs and the establishment of a draft Recommendation on RF transport through optical fibres, the use of millimetric frequency bands and radio-frequency channel arrangements, radio-relay systems for SDH-based systems and radio-relay systems for SDH-based systems and on telecommunication management networks (WP 9B);
- discrete blocks of spectrum allocations for adaptive HF systems and traffic capacity of automatically controlled radio systems and networks in the HF fixed service (WP 9C);
- sharing studies on reference radiation patterns of omnidirectional and sectoral antennas in point-to-multipoint systems, between FS and space science services in the 2 and 26 GHz

band, between MSS and FS below 3 GHz, between MS and FS in the 0.5 - 3 GHz range and between BSS and FS in the 12 GHz band (WP 9D).

The ITU-R handbook on digital radio-relay systems will be published in early 1997.

3.1.7 Activities related to Study Group 10 - Broadcasting Service - Sound

Task Group 10/3 (subjective sound assessment) may be disbanded after its next meeting in April 1997, due to the conclusion of its work after the preparation of 4 draft new Recommendations which will be transmitted for approval to Study Group 10.

Task Group 10/5 (technical parameters and planning procedures for HFBC) has also concluded its work. Its report has been consolidated in the draft CPM report. It is currently anticipated that no additional Task Group will likely be established, so that the resulting structure of Study Group 10 for the year 1997 will be Working Parties 10A, 10B and 10C and Task Group 10/4.

Possible additional meetings may be arranged for Task Group 10/4 (objective perceptual audio quality assessment methods) in the fall of 1997 and for drafting groups of WP 10A (Sound broadcasting below 30 MHz) to finalise the Handbooks on the design of HF Systems and LF-MF Systems and the LF-MF Recommendation on Antennas in the first quarter of 1997.

Priority for Study Group 10 publications should be given to the HF System Design Handbook for publication in 1997 due to its usefulness in conjunction with the agenda of WRC-97.

Activities foreseen in 1997 will include:

- studies on digital techniques to be applied in broadcasting at frequencies below 30 MHz;
- definition of planning parameters and procedure for terrestrial digital sound broadcasting;
- finalisation of full set of Recommendations on antennas.

While the volume of documentation is not expected to create difficulties, some problems may be expected in the processing by the Secretariat of those draft new and draft revised Recommendations prepared by the Working Parties and Task Groups for immediate submission to the Study Group meeting following immediately thereafter according to the new procedures in § 10 of Resolution ITU-R 1-1.

3.1.8 Activities related to Study Group 11 - Broadcasting Service-Television

Task Groups 11/1 (HDTV for studio and international programme exchange) and 11/3 (Digital terrestrial TV), which have terminated their activity, will be disbanded.

An urgent Question dealing with methods for delivery of multi-channel digital services to the home, recently formulated by Task Group 11/3 at its last meeting, will be submitted for approval by correspondence. After approval, it might require the establishment of a new Task Group.

The resulting structure of Study Group 11 for 1997 will be Working Parties 11A (TV systems & data BC), 11B (digital TV-source coding), 11C (terrestrial TV-emission & planning parameters) and Task Group 11/2 (Digital studio interfaces).

Handbooks on Teletext Systems and on digital terrestrial television broadcasting will become available in 1997 with priority for the first.

Activities foreseen in 1997 will include:

- definition of planning parameters and procedures for digital terrestrial television broadcasting;

- recommendations on interactive television services;
- digital multi-programme TV services.

3.1.9 Activities related to CCV Study Group - Coordination Committee for Vocabulary

Support will be provided to the Group's activities which will mainly be undertaken by correspondence. No meeting of the CCV is foreseen for 1997.

3.2 Special Committee (SC)

Two meetings of the Special Committee on Regulatory and Procedural matters are being organized for 1997 for a total of 9 meeting-days. The Bureau will provide secretariat support. The first meeting will prepare the SC input for the CPM-97 on the regulatory/procedural aspects for the relevant agenda items of WRC-97. The second meeting will prepare the SC contribution to the Director's report on Resolution 18.

In line with instructions outlined in Resolution ITU-R 38, different options for the study of regulatory/procedural matters will be investigated, with the advice of the RAG, and a respective report will be submitted to the Radiocommunication Assembly (see also paragraph 4.4 below).

3.3 Radio Regulations Board (RRB)

The Radio Regulations Board will meet three times in 1997 and as required during the WRC-97. Input to the meetings will be prepared by the Secretariat in the form of reports and draft Rules of Procedure. Each meeting is supported by the Director in his function as Executive Secretary and by the staff of the Bureau as required. The 1997 work programme will include studies related to the simplified Radio Regulations and on other subjects of interest to the RRB as well as relevant preparation for WRC-97.

3.4 Radiocommunication Advisory Group (RAG)

The RAG will meet in March 1997 to review relevant decisions of 1996 Council, the outcome of the WTSC-96 and the Policy Forum and will consider, in particular, the priorities and strategies for ITU-R activities for 1997, for the new biennial budget 1998-1999 and for the forthcoming plenipotentiary period 1999-2003. The refinement of the ITU-T and ITU-R Sectors will be considered in a Joint TSAG/RAG Working Group. Contributions by the RAG to the ITU-2000 Working Group (Resolutions 15 and 39) as well as work related to Resolution 18 will be considered. Effective coordination of activities among the three Sectors will be ongoing in the forthcoming year. The Bureau will support the work of the RAG through the submission of documents such as this operational plan, the draft ITU-R input to the ITU budget for 1998/1999, a draft ITU-R input to the new ITU strategic plan and progress reports on publications (see **Annex I**), the Study Group meeting calendar, post conference work and by providing administrative assistance. It is expected that the advice provided by the RAG to the Director will contribute to enhance services to Member States and Sector Members.

3.5 Conference Preparatory Meeting (CPM)

The CPM-97 meeting (5-16 May 1997, Geneva) will be held for the purpose of developing the CPM Report to the 1997 World Radiocommunication Conference, based on the report structure developed by CPM-96.

3.6 1997 Session of the Council

The Bureau will contribute to the annual report on the activities of the Union as well as to the elaboration of the draft 1998-1999 biennial budget. In this context, it will report on the preparations for RA-97 and WRC-97, the work of the Advisory Group and the work carried out under PP Resolutions 16 (Refinement) and 18 (Planning Framework for Satellite Networks). The Bureau will also report on the conclusion of studies of the costs of ITU-R's services and products (see paragraph 4.11 below). The Director and staff of the Bureau will provide assistance to the Council as required.

3.7 1997 Radiocommunication Assembly (RA-97)

The normal work of ITU-R Study Groups including specific tasks for the preparation of the WRC-97 will be concluded and appropriate consolidated reports will be prepared for submission to the Assembly. Material preparation of the meeting has started in 1996 and will be concluded in time. Arrangements will be made for information sessions during the Assembly on the activities of certain Study Groups as was done at RA-95.

3.8 1997 World Radiocommunication Conference (WRC-97)

A very heavy work programme has been placed on the Bureau as well as on administrations by the agenda for WRC-97. The Bureau has analysed the resulting tasks and has identified the following non-exhaustive list of main items:

- planning exercises for AP30/30A in accordance with Resolution 531 (WRC-95);
- support studies in Task Group 10/5 on alternative planning procedures for HFBC (Resolution 530) and appropriate testing;
- a report on activities related to Resolution 18 (see also paragraph 4.10 below);
- organization, support and preparation of a report on results of studies on sharing possibilities in various bands;
- studies concerning the identification of stations (Resolution 71 (WRC-95));
- preparation of the simplified RR as an input document;
- preparation of the Final Acts of the Conference.

Particular efforts are required to respond adequately to the first item. To this effect, a special BR project team which was established in 1996 will continue in 1997 to provide the necessary technical and regulatory input and to develop the required software to undertake the planning exercises. The need for redeployment of staff from other tasks will continue to have a negative impact on the processing of space-related notices and the timely adaptation of existing software for notice processing to the new client-server based computing environment.

The second item (HFBC) will also require an important software development (see paragraph 4.19 below), as foreseen in the report of TG 10/5.

A complete review of all required follow-up of WRC-95 and resulting work is covered in the respective paragraphs on WRC Resolutions.

3.9 1999 World Radiocommunication Conference (WRC-99)

The Bureau, for the time being, sees no need to organize any specific preparatory work, apart from providing secretariat support for the studies to be undertaken in the ITU-R Study Groups.

4 Special projects and studies

4.1 Technical assistance, seminars, cooperation with other Sectors and relations with regional and international organizations

The Bureau provides a wide range of services to the Member States and the Sector Members. The Bureau studies, under the relevant provisions of the Radio Regulations, regional and worldwide agreements, requests for assistance received from administrations and addressed to various departments of the Radiocommunication Bureau.

4.1.1 Technical assistance

The treatment of cases of harmful interference is a special case of assistance which is defined in the Radio Regulations. Owing to the nature of some services dealing with safety of life, the Bureau's objectives is to process these cases within 48 hours. The Bureau anticipates dealing with approximately 60 such cases in 1997.

The Bureau expects to receive 150 requests for assistance in dealing with frequency selection or in applying the technical plan procedures for the broadcasting services.

Also in the domain of frequency selection, it is expected that requests to find some 20 assignments under RR 1218 will be received in 1997. Other assistance for AP26 (Aeronautical) may concern ten allotments.

Although this assistance is aimed mostly at developing countries, there is also demand from developed countries for assistance during bilateral space systems coordination meetings, as well as assistance in space matters in the form of meetings and training missions. The Bureau will try to satisfy those demands taking into account its priorities in this regard (see paragraph 2.1.4 above).

4.1.2 Seminars and training sessions

The Bureau will organize three Regional Radiocommunication Seminars in 1997. The regional seminars will be held in Vietnam, the Caribbean and Kyrgyzstan. Special seminars on electronic notification of space notices will be organized in the light of requests received and resources available.

In addition, the Bureau will conduct an HFBC World Information Meeting in Midran, South Africa. In response to requests for assistance received the Bureau will organize Information Meetings for the preparation of WRC-97 in Mali for African countries and in Syria for the Arab States.

Each year, the Bureau also organizes two training sessions in Geneva, one in the spring and one in autumn. These sessions of one week are addressed to developing countries who need special assistance on specific problems such as notification, software, etc. In 1997, the training sessions organized at ITU headquarters are planned for April and November.

4.1.3 Cooperation with the ITU-D Sector

Liaison will be assured in areas of common interest, in particular Questions 1/2 (concerns of developing countries in relation to the -R and -T Sectors) and 2/2 (handbooks). BR staff attend SG, WP and Rapporteur Group meetings. BR will liaise with BDT in providing advice and assistance to countries on issues such as propagation studies; help will also be offered to countries wishing to establish propagation experiments and in the subsequent analysis of data. BR association will continue with the International Centre for Theoretical Physics (ICTP) (Trieste) in consultancy/training of scientists/engineers from developing countries.

The Bureau will also participate and contribute to the ITU-D Virtual Training Centre in organizing Distance Learning Courses on spectrum management and broadcasting services planning. The experiment carried out with remarkable success in 1996 will likely be repeated in 1997 in Latin America.

4.1.4 Cooperation with the ITU-T Sector

Concerning issues of mutual interest to ITU-R and ITU-T Study Groups, the activities of liaison Rapporteurs and the interchange of liaison statements will continue to closely follow the rapid development in radiocommunication and telecommunication fields.

ICG-SAT will continue its activity to monitor the work programmes of the relevant ITU-R and ITU-T Study Groups in relation to the use of satellites in order to ensure that Recommendations being produced by relevant Study Groups allow the continuing full integration of the satellite transmission medium in public networks. The work will be carried out by correspondence.

ICG FPLMTS will continue to receive the necessary information from TG 8/1 to enable it to update and revise the overall work plan. The second meeting of this ICG will take place in Narita, Japan, 13-14 February 1997 to consolidate the overall work plan, taking into account the latest developments in ITU-R and ITU-T and the new structure of the latter.

Refinement of the ITU-R and ITU-T

The RAG/TSAG JWP on Refinement will examine the answers to a questionnaire sent to all ITU-T and ITU-R Sector Members on the allocation of ITU-R Questions. The conclusions drawn will be considered by the RAG in March 1997 and subsequently the Assembly will decide on consequential action for the Radiocommunication Sector, while the TSAG will be able to take decisions concerning the Standardization Sector.

4.1.5 Cooperation with international and regional organizations

The Bureau will continue to monitor the activities of URSI and to stimulate liaison between ITU-R Study Groups and URSI Commissions in topics of mutual interest. The Bureau will aim to monitor those COST (European Cooperation in the field of Scientific and Technical Research) Projects of relevance to its work such as COST 255 (Radiowave propagation modelling for new satcom services at Ku-band and above), COST 251 (Improved quality of service in ionospheric telecommunication systems planning and operation) and COST 259 (Wireless flexible personalised communications).

The Radiocommunication Bureau will take part in the work of the United Nations' Committee on the Peaceful Uses of Outer Space (UN-COPUOS). The Legal Sub-Committee of the COPUOS has questions on its agenda on the character and utilisation of the geostationary orbit and the definition and delimitation of outer space. The common understanding of the UN committee members has been that the GSO, because of its specific characteristics and its nature of being a limited natural resource, requires scientific, technical, political, and strategic considerations by the United Nations. Nevertheless, these considerations should not lead to contradictory regulations in the various UN fora. According to the decision of the 1996 session of the COPUOS, a joint ITU/UN (Outer Space Office) document is to be submitted to the 1997 session of the Legal Sub-Committee. The ITU contribution has been communicated to the UN Outer Space Office with a view to elaborating a common UN/ITU document on the basis of which the respective legislative roles of the COPUOS and the ITU will be considered. In 1997, due to the lack of available resources, the accent of the Bureau's participation in the COPUOS will be put on the final elaboration and discussion of this

joint document. It is important that the treaty-making activities of the UN should remain complementary to the activities of the ITU and not prejudice the role of the ITU.

Necessary liaison with IMO, Inmarsat, Cospas-Sarsat, CICR and ICAO will be provided with regard to the application of the ITU treaty texts related to radiocommunications (Constitution and Convention, and Radio Regulations) within these international organizations. The Bureau will be involved in the preparation of input documents and participation in the meetings of COMSAR 2 (Sub-Committee on Radiocommunication and Search and Rescue, January 1997) and MSC (Maritime Safety Committee, May 1997) of IMO.

The Radiocommunication Bureau will continue to collaborate with regional organizations specializing in radiocommunications, such as CEPT, CITELE, APT, etc, particularly with a view to ensuring the effective preparation of WRC-97.

Similarly, close cooperation with the major broadcasting unions, such as the EBU, ABU and ASBU and the World Broadcasting Union will continue to be maintained including participation in 1997, as resources permit, in their respective Technical Committee meetings. Conversely, these bodies will participate in the Joint Steering Committee of Study Groups 10 and 11.

The Bureau will continue to cooperate with the Global Standardization Committee (GSC) and the associated Radio Standardization Group (RAST), mainly through the various liaison persons who have been identified in the Bureau. The BR will provide logistic support for the organization of the RAST-5 meeting at the ITU (5-6 June 1997).

4.2 Software development/EDP support

The implementation of plans established in 1994 to migrate existing software to the new ITU operating system and software platform continues. Precise objectives as described below have been established, in order to try to complete the migration of all software application systems in the Radiocommunication Bureau by the end of 1998. Regular meetings will be held with the Information Systems Department of the General Secretariat to align software development strategies and coordinate the use of development tools.

4.2.1 Space applications

In order to accommodate the increasing volume and complexity of space notices and following the provision of software for electronic notifications including graphical data that will enable administrations and allow the Bureau to capture, validate and correct space notices on a PC, emphasis in 1997 will be put on the improvement of the Bureau's infrastructure to process the notifications and to publish the results more rapidly. Also planned in 1997 is easier access through the World Wide Web to the Bureau's space database for inquiries.

4.2.2 Terrestrial applications

Following the decision to completely redesign the terrestrial part of the Frequency Management System (FMS), the unit responsible to design, develop and implement the new terrestrial application software will continue its work in close cooperation with the users and will concentrate on the development of processing software for FM/TV notices to be followed by those for LF/MF broadcasting.

4.2.3 Other software applications

To further promote computer-assisted spectrum management and to improve access to available software, the ITU software catalogue, which is also accessible through TIES/WWW, will continue to be updated to list all available relevant software.

4.2.4 Hardware provisioning and maintenance in the BR

Standard office hardware and software for use in the Bureau will continue to be provided and maintained, in cooperation with the Information Systems Department. Ways and means will be sought in cooperation with the IS Department to improve the maintenance of that equipment as well as to achieve a better definition of the standard office software to be used in the standard workstation.

4.3 Costing study

The costing study initiated by the Bureau in 1995 to evaluate the costs of the various products and services which are generated in the ITU-R Sector will be completed during the first half of 1997 with the cooperation of the Strategic Planning Unit (SPU) and the Finance Department. The results will include staff costs as well as indirect costs, costs invoiced by other sectors of the ITU and overhead costs (see also paragraph 4.11 below).

4.4 Handling of regulatory/procedural matters

The status of the special committee will be reviewed at the next Assembly on the basis of a study of the options for dealing with regulatory and procedural matters. On the basis of experience gained during 1996 and early 1997, a preliminary report will be prepared for submission to the RAG in March 1997 and a final report on these matters will be submitted to the 1997 Radiocommunication Assembly.

4.5 PP, Resolution 1

The Director will continue to implement the directives of Resolution 1 in the management of the Bureau through the use of this operational plan that is regularly reviewed by means of quarterly reports from the departments in the BR. He will thus contribute to the promotion of the development of a global information infrastructure (GII).

In line with the specific priorities set out in the strategic plan, the Bureau and the respective ITU-R Study Groups will continue to support the initiatives and studies outlined in the plan. The working methods of the Bureau are under permanent review, aiming at improving user-friendly customer oriented document exchange capabilities (electronic notifications, electronic publications and TIES/WWW) and the internal organization of the Bureau will be further reviewed in 1997.

Revisions to the 1999-2003 strategic plan will be prepared for review by the RAG in March 1997 and subsequent submission to the Council and the next Plenipotentiary Conference.

4.6 PP, Resolution 14

The Rules of Procedures and processes in the Sector as laid down in Resolution ITU-R 1 and other instructions from the 1995 Assembly have been implemented. Future reviews of resolution ITU-R 1 will take into account advice from the Study Group Chairmen and Vice-Chairmen, the RAG and the results of the review under way in the ITU-2000 Working Group. The Bureau is contributing with its experience to this review of ITU-R 1.

4.7 PP, Resolutions 15 and 39

The Bureau will carefully monitor the deliberations in the ITU-2000 Working Group. In view of the important role that Sector Members play in the activities of the Sector, it is foreseen that any conclusions without further decision making in other forums will be applied as soon as possible. The Bureau will also actively support any further work as required and will participate in the respective meetings with the objective of satisfying the requirements of the Sector. (For the costing study referred to under Resolution 39 see paragraph 4.11 below.)

4.8 PP, Resolution 16

Notwithstanding ongoing consultations between the Directors of TSB and BR on the attribution of work, the matter of refinement of the Radiocommunication Sector and the Telecommunication Standardization Sector will continue to be considered at joint meetings of the Advisory Groups of the two Sectors which set up a Joint Working Party. It will take into account the current processes and activities, consider further elements for refining the structure and appropriate consequential action. Specific studies on the allocation of study items specified in ITU-R Questions to either the ITU-T or ITU-R Sector will be undertaken in 1997 and concluded for the ITU-R Sector in time for consideration by the 1997 Radiocommunication Assembly.

4.9 PP, Resolution 17

The Director and the Bureau will continue to support the Radiocommunication Advisory Group. For more details see paragraph 3.4 above.

4.10 PP, Resolution 18

The Plenipotentiary Conference (Kyoto, 1994), in its Resolution 18, requested the Director of the Radiocommunication Bureau, in consultation with the Radiocommunication Advisory Group (RAG), to initiate a review of the ITU's frequency coordination and planning framework for satellite networks with a view to submitting a preliminary report to the World Radiocommunication Conference 1995 (WRC-95) and a final report to the 1997 Conference (WRC-97). In considering the matter on the basis of an initial document by the Bureau and contributions by administrations, different bodies of the Radiocommunication Sector started to study the above questions in 1995 and 1996. The Working Group of the RAG in 1995 discussed the possible problems to be studied in the review and identified a list of issues which are used in the studies organized within the framework of the Resolution.

As requested by the Resolution, the Director submitted his preliminary report to WRC-95. On the basis of this report, the Conference decided that the following entities should provide input to this important review: the Special Committee on Regulatory/Procedural Matters, ITU-R Study Groups, the Radio Advisory Group (RAG), the Radio Regulations Board (RRB), the Radiocommunication Bureau and the ITU World Telecommunication Policy Forum (1996). The Director will collect and synthesise the results of the studies and will submit his final report to WRC-97.

The Special Committee on Regulatory/Procedural Matters has started to deal with questions relating to the Resolution 18 studies and made progress in considering possible solutions for the issues identified by the Working Group of the RAG indicated above. Two rapporteur groups were established and a detailed work plan was drawn up to meet the deadlines required for the timely submission of the results well before the 1997 Conference. The RAG also continued discussions on specific aspects of Resolution 18 related to the linkage between coordination procedures and commitment to take up notified orbital positions. A special Rapporteur of the RAG was appointed

to consolidate the RAG views on the above questions. The list of issues established by the WG-RAG was also submitted to interested ITU-R Study Groups which are studying the inventory of issues with a view to preparing substantial contributions to the study. The Resolution 18 review was on the Agenda of the Radio Regulations Board meetings between June, 1995 and November 1996. In-depth discussions among Board members took place on the issues. The RRB finalised its report in November 1996. This report will be considered within the Resolution 18 review. The Radiocommunication Bureau has also contributed to the review and, in addition, it has been providing general support (organizational, administrative) to the activities of the different bodies of the ITU-R Sector. As agreed by WRC-95, the Bureau has organized, with the necessary partnership of regional organizations, regional information exchange meetings in the three ITU Radio Regulation Regions in 1996.

The final report of the Director to WRC-97 is planned to be finalised in early 1997 to allow its discussion well before the Conference

4.11 PP, Resolution 19

The analytical study of the costs of ITU-R products and services is about to be concluded (see paragraph 4.3). The objectives of the study were to identify existing and potential outputs, estimate the direct costs and identify the indirect costs, as well as overhead costs, determine relative benefits to Member States, Sector Members and non-members, analyse the costs of major processing steps and identify different ways of reducing costs and improving productivity.

The final report will be submitted to the 1997 Council

4.12 PP, Resolutions 32, 33 and 34

These Resolutions request the Radiocommunication Bureau to cooperate with and assist the BDT in providing assistance to specific countries. Meetings will continue to be held to identify the needs for assistance and to provide possible technical support as required. Although no definite tasks are planned for 1997, the Bureau may be required to provide specific training, in particular in the broadcasting field.

4.13 PP, Resolution 36

To date, no suggestions for modifications have been identified for the existing regulatory provisions to assure efficient means of communication for disaster mitigation and for relief operations. The Bureau was established as the contact point for a UN Committee on this matter and several meetings were held in 1996. A conference to adopt a "Convention on the provision of telecommunication resources for disaster mitigation and relief operations" is planned in 1997. The Bureau may be requested, as the proposed Technical Coordinator for the Convention, to maintain and disseminate appropriate information related to telecommunication resources for disaster mitigation and relief.

4.14 PP, Resolution 62

The instructions for the provision of interpretation at meetings and translation of documents and publications will be followed within the budgetary limitations established by the Council. The BR will try to follow to the extent possible the conclusions of the group established by Council to study the effective and efficient use of languages, in that it will continue to try and "adopt more economical arrangements where practicable and acceptable to participants". While the group's report is to be distributed to all Members for comments before it is submitted to the 1998

Plenipotentiary Conference, Councillors expressed the wish that the Secretary General and others should explore what might be done to implement the spirit of these recommendations immediately. In keeping with these sentiments and due to budgetary constraints, unless there are specific requirements for interpretation in the three other languages of the Union, interpretation where possible will normally be made available in English, French and Spanish.

4.15 PP, Resolutions 65 and 66

The matter of remote access to ITU-R data, documents and publications is regularly considered by the Bureau and by the RAG and all efforts are being made to make such data and documents available within established ITU policy and the resources available. In particular, the process of posting onto TIES/ITUDOC/WWW of all existing ITU-R Recommendations will be continued and hopefully completed in 1997.

4.16 WRC-95 Resolution 26

The main part of this Resolution, which contains principles for inclusion of footnotes in the Radio Regulations, is directed primarily to administrations. As instructed in the Resolution, the Director will undertake the review of footnotes in a timely manner before WRC-97 and communicate the results to administrations in order to enable them to follow the provisions of Resolution 26.

4.17 WRC-95 Resolution 71

The Bureau, having initiated the study within the Radiocommunication Sector on the application of Article S19 of the Radio Regulations and having submitted an information document to the meeting of WP 8B in October 1996, will now prepare further input for the SC meeting in January 1997. Contacts will be maintained with the concerned international organizations ICAO and IMO,

4.18 WRC-95 Resolution 339

Consultations will continue with IMO with a view to determining the need for the ITU to continue frequency coordination for NAVTEX services in order to reach an agreement by WRC-97.

4.19 WRC-95 Resolution 529

The necessary software for conducting the tests referred to the Resolution based on the recommended criteria will be developed and tested. It will be based on the latest ITU-R Recommendations on the subject :

- ITU-R BS.705 for the calculation of antenna patterns;
- ITU-R P.533 for the prediction of field strengths;
- ITU-R P.842 for the calculation of reliability values.

This software will be used by the Bureau and by administrations to test the planning procedure.

The software will run on a PC, enabling the user to change parameters, such as protection ratios, and to display the results graphically on screen.

4.20 WRC-95 Resolution 531

Resolution 531 in Chapter 5 of its Annex 1 contains the instructions and advice to the ITU-R Sector concerning the measures to be taken in view of the WRC-97 agenda item for the "Review of

Appendices 30 and 30A". Implementation of this WRC-95 resolution has required considerable resources in the Bureau in 1996 and this will continue in 1997. The major elements of the activities of the Bureau are as follows.

4.20.1 Rules of Procedure (paragraph 5.3 of Resolution 531)

The Rules of Procedure which were approved by the RRB in 1996 in accordance with the Conference decision as contained in paragraph 5.3 of the Annex 1 to the Resolution, will continue to be applied.

4.20.2 Organization of the planning exercises (paragraph 5.4 of Resolution 531)

The Bureau continues to implement the instruction by the Conference to undertake planning exercises (in cooperation of administrations and the Study Groups). The BSS Planning Exercise Team composed of Bureau staff and experts from Administrations and ITU-R Sector Members is continuing to provide valuable support in this exercise.

The major milestones of this planning exercise are the following:

- planning exercise - step 1 (modification of the existing Plan on the basis of new technical parameters) (September 1996);
- planning exercise - step 2 (to provide plan entries for "new" ITU Member countries and for countries with reduced numbers of channels) (March 1997);
- planning exercise - step 3 (to take into account, as far as possible, Article 4 modifications) (September 1997).

The above tasks are undertaken in cooperation with administrations and ITU-R Study Groups.

To advise the Bureau in its activities to carry out and later to monitor the progress of the planning exercise, the Director, BR convened a meeting open to all Administrations of ITU Member States and all Members of the ITU-R Sector. This Planning Consultation Group met in September 1996.

The results of the planning exercise available at the beginning of 1997 will be submitted to the CPM.

4.21 WRC-95 Resolution 713

Support will be provided to the Secretary General for the studies on the possibility of transferring certain responsibilities relating to operational provisions in the Maritime and Aeronautical Mobile Services to IMO and ICAO, following the procedures agreed between these organizations and the ITU.

4.22 Radiocommunication Assembly Resolutions

The Director will apply the provisions in Resolutions from the Radiocommunication Assembly and in particular he will:

- submit a report to the 1997 Assembly, carry out the tasks assigned to him with respect to the support of the work of the Study Groups and the approval of Recommendations (Resolution ITU-R 1-1);
- provide support to the RAG and report on the results of work (Resolution ITU-R 3-1);

- provide assistance to developing countries and to that effect cooperate with the Directors of the other two Bureaux and the Secretary General (Resolution ITU-R 7 and Resolution ITU-R 17);
- contribute to determine details of identified propagation measurement campaigns and disseminate the results (Resolution ITU-R 8 and 27);
- collaborate with other international and regional organizations (Resolution ITU-R 9);
- continue endeavours to assist in implementing BASMS (Resolution ITU-R 11-1);
- promote and enhance access to and exchange of relevant computer programs and electronic handling of ITU-R documents (Resolution ITU-R 20, 21 and 25-1);
- investigate options for the study of regulatory/procedural matters and report on the results to the 1997 Assembly (Resolution ITU-R 38);

Further details on particular aspects of the issues listed can be found in the relevant paragraphs of this plan.

5 Publications

5.1 Regulatory publications

The following publications resulting from the application of the Radio Regulations are foreseen:

- Weekly Circulars on paper, microfiche and diskette;
- 2 CD-ROMs containing updated versions of the IFL;
- 2 CD-ROMs with data of Space Radiocommunication Systems (SRS);
- 1 edition and 1 update to the Preface to the IFL;
- 1 CD-ROM containing all Terrestrial Plans;

5.2 Service documents

The following service documents are described in the Radio Regulations. In 1997, the Bureau will publish:

- List IV (Coast stations)
one full edition (1 100 pages) and one supplement (200 pages);
- List V (Ship stations)
one full edition (3 000 pages) and three supplements (500 pages);
- List VI (Radiodetermination and special service stations)
one full edition (1 400 pages);
- List VIIA (Call signs and numerical identities used by the maritime services)
one full edition (1 500 pages) and three supplements (500 pages);
- List VIIB (Other call signs)
one full edition (300 pages) and one supplement (70 pages).

5.3 ITU-R Recommendations,

It is estimated that 105 new and 88 revised ITU-R Recommendations will be published in 1997. It is anticipated that during 1997, the total number of pages to be treated will total some 23 000 pages for the three languages.

5.4 Input document for WRC-97

An input document will be prepared in three languages for the WRC-97 which will include all the provisions approved by the WRC-95, both those coming into force on 1 January 1997 and those with effect from 1 June 1998. The input document of about 2 200 pages will be printed in A4 format. Due to the voluminous size of the document, each administration will be supplied with one free copy. Should administrations need additional copies on paper or diskette, they will be invited to buy them (i.e. the same approach which was used for the VGE final report).

5.5 Preparation of Handbooks

The 1997/1998 programme for the publication of Handbooks is outlined in Annex I.

5.6 Electronic publications

5.6.1 CD-ROMs and diskettes

Large volumes of data will continue to be published at least twice a year on CD-ROM and more frequently on diskette. Thus, in 1997 the International Frequency List, the terrestrial frequency assignment Plans and the list of Space Radiocommunication Systems with all specific data including graphical data for the latter will be published on CD-ROM. These disks will also contain the Preface to the IFL and other software packages of interest to frequency managers. A CD-ROM of all ITU-R Recommendations in force will also be published.

In addition, the Weekly Circular and its Special Sections are made available on a weekly basis on paper and diskette. The latter version can be used together with the data on CD-ROM through the software package for local frequency management.

The HF Broadcasting Schedules will continue to be published regularly on diskette.

5.6.2 TIES/ITUDOC

Substantial progress was made in response to Kyoto Resolution 66 and to Resolutions ITU-R 19 and ITU-R 20 by posting, apart from general information on the Sector and official ITU-R publications in ITU's electronic bookstore accessible through TIES and the WWW.

The following information is now accessible electronically:

- a complete list of Member States and Sector Members, i.e. ROAs, SIOs, regional telecommunication organizations, intergovernmental organizations operating satellite systems, etc.;
- circular letters concerning the general business of the Radiocommunication Sector (CA), Assembly and Study Group work (CACE), draft Recommendations and Questions (CAR), maritime affairs (CM) and Radio Regulation frequency registration matters (CR);
- documentation dealing with the Radiocommunication Advisory Group (RAG), Study Groups and the Special Committee on Regulatory/Procedural Matters;
- documentation of the Conference Preparatory Meeting (CPM);

- the complete text of all Resolutions, Opinions, as well as all Questions under study by each Study Group;
- accessible databases such as a list of ITU-R Recommendations and Questions, ship-station database with possible queries on relevant data (MARS), software for frequency management, etc.;
- the Space Network List (updated every two weeks) with detailed technical information on geostationary and non-geostationary-satellite networks and earth stations in coordination, notified or registered. This includes information on space stations in Plans (AP30/30A/30B), as well as data submitted in application of Resolution 33 (WARC-79) and Resolution 46 (WARC-92);
- access to the full SNS Space database including graphical data with inquiry facilities;
- all of the ITU-R Recommendations in force.

In addition, a number of bulletin boards are in use with a variety of information posted, in particular meeting documents related to the work of a particular Working Party or Task Group.

BR's resources provided within the budget for 1996/1997 do not provide specifically for any resources dedicated to this work. Consequently, special operational arrangements within the Bureau will continue for the posting of information. In 1997, priority will again be given to the posting of the most recent information.

Electronic document handling (EDH) practices will be expanded including electronic document submission (EDS) and electronic document exchange (EDE) following the guidelines in Circular-letter CA/17 (1995). Maintenance and improvement of the bulletin board and mailing list services is foreseen in the period as well as a substantial increase in the quantity and quality of ITUDOC document posting activities.

All ITU-R Recommendations are available on-line in WinWord2 and PostScript formats. A new format, Adobe Acrobat PDF, will be added to avoid difficulties experienced when downloading and printing documents on computers with different operating systems and printer drivers. New or newly revised Recommendations will be put on-line immediately after their approval.

ITU-R Recommendations are available through a subscription service (ITU-R Recommendations Online) or individually (ITU Electronic Bookshop).

Various new publications and documents listed in **Table 3** will become available on-line upon payment, including the SNG User's Guide, Volume 4 of the Radio Regulations, pre-published ITU-R Recommendations arising from the RA-97, the input document for WRC-97 containing all S-provisions of the RR as approved by WRC-95 and the Final Acts of WRC-97.

TABLE 3

Publication	Format	No. of pages /language
SNG User's Guide - Online	PDF	200

Publication	Format	No. of pages /language
ITU-R Recommendations now in force - CD-ROM*	PDF & WinWord	7500 7500
ITU-R Recommendations now in force - Online/Bookshop	PDF	7500
RR Vol. 4 - Bookshop	PDF	500
Input document for WRC-97 - Online	PDF & WinWord	2200 2200
Handbooks - Online/Bookshop	PDF	800
Pre-published ITU-R Recommendations from RA-97 - Online/Bookshop	PDF & WinWord	2500 2500
Final Acts of WRC-97 - Online	PDF & WinWord	1000 1000

* the CD-ROM is being prepared by the General Secretariat, but its contents will need to be checked by the BR

6 Missions and in-service training

In 1997, the distribution of missions is foreseen as shown in the table below :

Forecast	No. of missions	No. of days of missions
Participation in meetings of specialized UN agencies dealing with Telecom matters, and other	4	30
Participation in meetings of Regional Telecom Organizations	7	30
Participation in regional information meetings	6	25
Participation in meetings of non-ITU conferences and symposia	10	35
Participation in meetings of Technical and administrative support to Study Group meetings outside Geneva	8	83
Lecturer in BR training seminars on frequency management and related matters	20	97

In-service training	10	40
Others (assistance to developing countries, TELECOM exhibition, World Development Regional Conference)	2	20

7 Staff matters

The human resources of the Radiocommunication Bureau are based on 150 established posts among which 78 are Professionals (P&D) and 72 are General Services (G). According to the ITU Staff Rules and Regulations, the related staff are recruited on the basis of three different kinds of contract: Permanent, MRT and Fixed-Term. In implementing the provisions of Council Resolution 1071 and 1088, which provided additional resources for eliminating space notices backlog and post conference work until the end of 1997, 9 general services and 7 professional posts have been temporarily created.

Some of the above-mentioned established posts are or will become vacant, mainly due to retirements taken in 1996 or to be taken in 1997. As of 1 January 1997, 2 such posts are still vacant. In 1997, 2 Professionals and 2 General Services staff will retire.

The Radiocommunication Bureau can recruit additional support staff on the basis of short-term contracts. In 1997, excluding the above mentioned additional staff recruited for the elimination of the backlog and post Conference work, additional human resources will also be used to help the Study Group departments for the preparation and the implementation of decisions of ITU-R meetings and to assist computer users in the BR.

The foreseen distribution of human resources, in 1997, among Radiocommunication Bureau departments is shown in the following table:

	D1 (Posts)	Ps (Posts)	Gs (Posts)	P-staff (short term) man-month	G-staff (short term) man-month
BRDIR ⁽¹⁾		2	9		22
SSD ⁽²⁾	1	20	19	55	77
TSD ⁽³⁾	1	25	36		33
RIS ⁽⁴⁾	1	20	2	22	22
SGA ⁽⁵⁾	1	2	3		22
SGB ⁽⁵⁾	1	3	3		22
Total	5	73	72	77	198

⁽¹⁾ Short term staff supporting organization of ITU-R meetings

⁽²⁾ Short term staff for elimination of backlog and post-WRC-95 workload

⁽³⁾ Short term staff for preparation of publications

⁽⁴⁾ Short term staff for post-WRC-95 workload

⁽⁵⁾ Short term staff supporting organization of Radiocommunication Study Group meetings

8 Financial matters

8.1 General ITU-R budget

The current 1996-1997 budget of the Radiocommunication Sector has been decided in Resolution 1071 of 1995 session of the Council and was supplemented by Resolution 1088 in 1996.

Table 4 gives the foreseen breakdown of expenditures for by the activities of the Sector as of 30 September 1996 and the expected situation on 31 December 1997.

8.2 Budget of the Radiocommunication Study Groups

The principle of establishing a biennial budget for each Radiocommunication Study Group to be managed by the Study Group Chairman with the assistance of Bureau staff was successfully implemented in 1996 in consultation with the Chairmen and Vice-Chairmen. The Study Group budgets were based on the foreseen workload and particularly on the number of meetings and volume of documentation to be produced.

Table 5 gives the foreseen breakdown of expenditures for each Study group as of 30 September 1996 and the expected situation on 31 December 1997.

Table 4 Radiocommunication Sector Draft Financial Plan 1996-1997

DIRECT COSTS		WRC	RA	Res. 18	Seminars	RRB	RAG	Study Groups	BR	TOTAL
STAFF COSTS: BR established posts, ad hoc fixed term contracts, short-term contracts, interpreters, and other staff costs (insurance, overtime, etc....)	Resources 1996-97	1'670'267	482'134	373'520	199'500	305'570	304'802	3'043'036	48'192'000	54'570'829
	Expenditures as of 30.09.96	694	309	41'007	0	42'235	69'547	421'419	18'841'810	19'417'021
	Planned expenditures 31.12.97	1'503'240	289'280	190'140	143'550	189'556	152'401	2'363'569	44'977'000	49'808'736
	Expected balance 31.12.97	167'027	192'854	183'380	55'950	116'014	152'401	679'467	3'215'000	4'762'093
OTHER DIRECT COSTS: missions, contractual services, logistics, equipment, other acquisitions, services	Resources 1996-97	250'500	149'000	0	436'135	414'080	48'000	820'000	21'15'000	4'232'715
	Expenditures as of 30.09.96	915	3'648	34'416	116'193	141'278	0	290'420	545'599	1'132'469
	Planned expenditures 31.12.97	272'950	89'400	88'416	493'635	333'168	24'000	599'317	19'16'500	3'817'386
	Expected balance 31.12.97	-22'450	59'600	-88'416	-57'500	80'912	24'000	220'683	198'500	415'329
MISCELLANEOUS	Resources 1996-97	19'000	6'000	0	10'000	7'000	4'000	25'000	40'000	111'000
	Expenditures as of 30.09.96	2'740	0	0	217	904	702	8'096	8'096	20'755
	Planned expenditures 31.12.97	17'100	3'600	0	9'000	2674	2'000	23'000	37'000	94'374
	Expected balance 31.12.97	1'900	2'400	0	1'000	4326	2'000	2'000	3'000	16'626

Total direct costs		WRC	RA	Res. 18	Seminars	RRB	RAG	Study Groups	BR	TOTAL
Resources 1996-97	1'939'767	637'134	373'520	645'635	726'650	356'802	3'888'036	50'347'000	58'914'544	
Expenditures as of 30.09.96	4'349	3'957	75'423	116'410	184'417	70'249	719'935	19'395'505	20'570'245	
Planned expenditures 31.12.97	1'793'290	382'280	278'556	646'185	525'398	178'401	2'985'886	46'930'500	53'720'496	
Expected balance 31.12.97	146'477	254'854	94'964	-550	201'252	178'401	902'150	3'416'500	5'194'048	

INVOICED COSTS		WRC	RA	Res. 18	Seminars	RRB	RAG	Study Groups	BR	TOTAL
Resources 1996-97	1'711'000	1'018'000	60'000	42'000	128'000	85'000	401'7000	3'498'000	10'559'000	
Expenditures as of 30.09.96	45'045	0	49'334	7'099	30'312	51'501	121'2885	819'800	2'215'976	
Planned expenditures 31.12.97	1'705'580	712'600	50'000	25'000	80'198	83'800	3404544	1'749'000	7'810'722	
Expected balance 31.12.97	5'420	305'400	10'000	17'000	47'802	1'200	612456	1'749'000	2'748'278	

GRAND TOTAL		WRC	RA	Res. 18	Seminars	RRB	RAG	Study Groups	BR	TOTAL
Resources 1996-97	3'650'767	1'655'134	433'520	687'635	854'650	441'802	7'386'036	60'906'000	69'473'544	
Expenditures as of 30.09.96	49'394	3'957	124'757	123'509	214'729	121'750	1'539'735	21'611'481	22'786'221	
Planned expenditures 31.12.97	3'498'870	1'094'880	328'556	671'185	605'596	262'201	4'734'886	54'741'222	61'531'218	
Expected balance 31.12.97	151'897	560'254	104'964	164'50	249'054	179'601	2'651'150	6'164'778	7'942'326	

Table 5 Radiocommunication Sector draft Study Group financial plan 1996-1997

DIRECT COSTS		SG 1	SG 3	SG 4	SG 7	SG 8	SG 9	SG 10	SG 11	CPM	SC	CVC	TOTAL
STAFF COSTS: BR established posts, ad hoc fixed term contracts, short-term contracts, interpreters, and other staff costs (insurance, overtime, etc....)	Resources 1996-97	186'670	272'685	253'964	272'685	388'553	290'828	272'685	297'261	561'229	264'517	155'659	3'216'736
	Expenditures as of 31.10.96	65'757	0	62'075	38'622	76'040	92'872	45'076	128'669	74'544	61'157	0	644'812
	Planned expenditures 31.12.97	130'861	68'716	98'380	166'480	328'320	161'835	104'342	154'985	528'849	101'207	64'041	1'908'016
	Expected balance 31.12.97	-9'948	203'969	93'509	67'583	-15'807	36'121	123'267	13'607	-42'164	102'153	91'618	663'908
OTHER DIRECT COSTS: missions, contractual services, logistics, equipment, other acquisitions, services, miscellaneous.	Resources 1996-97	34'250	82'200	61'650	82'200	116'450	82'200	82'200	95'900	20'550	6'850	6'850	671'300
	Expenditures as of 31.10.96	33'616	5	27'145	6'000	36'774	47'998	11'999	25'668	4'500	5'431	0	199'136
	Planned expenditures 31.12.97	37'616	14'758	24'513	24'500	79'274	92'439	33'999	39'418	10'500	12'931	2'000	371'948
	Expected balance 31.12.97	-36'982	67'437	9'992	51'700	402	-58'237	36'202	30'814	5'550	-11'512	4'850	100'216

Total direct costs		SG 1	SG 3	SG 4	SG 7	SG 8	SG 9	SG 10	SG 11	CPM	SC	CVC	TOTAL
Resources 1996-97		220'920	354'885	315'614	354'885	505'003	373'028	354'885	393'161	581'779	271'367	162'509	3'888'036
Expenditures as of 31.10.96		99'373	5	89'220	44'622	112'814	140'870	57'075	154'337	79'044	66'588	0	843'948
Planned expenditures 31.12.97		168'477	83'474	122'893	190'980	407'594	254'274	138'341	194'403	539'349	114'138	66'041	2'279'964
Expected balance 31.12.97		-46'930	271'406	103'501	119'283	-15'405	-22'116	159'469	44'421	-36'614	90'641	96'468	764'124

INVOICED COSTS		SG 1	SG 3	SG 4	SG 7	SG 8	SG 9	SG 10	SG 11	CPM	SC	CVC	TOTAL
Resources 1996-97		310'405	230'065	551'425	310'405	732'275	350'575	310'405	631'765	389'955	139'555	40'170	4'017'000
Expenditures as of 31.10.96		165'187	61'013	83'970	48'210	426'710	164'935	36486	161'637	42'950	21'412	375	1'212'885
Planned expenditures 31.12.97		194'553	7'350	245'611	88'965	936'990	228'371	106'969	263'040	79'725	63'620	40'350	2'192'378
Expected balance 31.12.97		-49'335	161'702	221'844	173'230	-611'425	-42'731	166'950	207'088	267'280	54'523	-555	611'737

GRAND TOTAL		SG 1	SG 3	SG 4	SG 7	SG 8	SG 9	SG 10	SG 11	CPM	SC	CVC	TOTAL
Resources 1996-97		531'325	584'950	867'039	665'290	1'257'278	723'603	665'290	1'024'926	971'734	410'922	202'679	7'905'036
Expenditures as of 31.10.96		264'560	61'018	173'190	92'832	539'524	305'805	93'561	315'974	121'994	88'000	375	2'056'833
Planned expenditures 31.12.97		363'030	90'824	368'504	279'945	1'344'584	482'645	245'310	457'443	619'074	177'758	106'391	4'472'342
Expected balance 31.12.97		-96'265	433'108	325'345	292'513	-626'830	-64'847	326'419	251'509	230'666	145'164	95'913	1'375'861

ANNEX I

ITU-R Handbooks

Four Handbooks were published in 1996. The following seventeen Handbooks (total of about 2 900 pages) are in preparation for possible publication in 1997 and 1998.

Title	To be published in 1997	To be published in 1998	Estimated number of pages
The ionosphere and its effects on terrestrial and Earth-space radiowave propagation from VLF to SHF	X		150
Precise frequency and time	X		100
Digital radio-relay communications	X		400
HF Broadcasting system design	X		120
Teletext handbook	X		600
Digital television signals: coding and interfacing with studios	X		80
Radiowave propagation information for predictions for signal levels likely to cause interference and for evaluation of coordination distances		X	150
Radiowave propagation information for predictions for terrestrial path communications		X	150
Operational forecasting and near-real-time assessment of ionospheric variability associated with radiocommunication		X	100
LF-MF System design	X		120
Mobile satellite communications	X		300
Land mobile (including wireless access)	X		500
Handbook on satellite communications (fixed-satellite service)		X	650
Computer-aided techniques for spectrum management (English in 1997)	X	X	200
Digital terrestrial broadcasting		X	130
NOTE: These are the dates for publication in three working languages (English, French and Spanish).			