

I n t e r n a t i o n a l   T e l e c o m m u n i c a t i o n   U n i o n

# RESOLUTIONS

**RADIOCOMMUNICATION  
ASSEMBLY (RA-07)  
GENEVA, 15-19 OCTOBER 2007**



Radiocommunication Sector





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## RESOLUTION ITU-R 1-5

### **Working methods for the Radiocommunication Assembly, the Radiocommunication Study Groups, and the Radiocommunication Advisory Group**

(1993-1995-1997-2000-2003-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that the duties and functions of the Radiocommunication Assembly are stated in Article 13 of the ITU Constitution and Article 8 of the ITU Convention;
- b) that the duties, functions and organization of the Radiocommunication Study Groups and the Radiocommunication Advisory Group (RAG) are briefly described in Articles 11, 11A and 20 of the Convention;
- c) that the General Rules of Conferences, Assemblies and Meetings of the Union have been adopted by the Plenipotentiary Conference,

*noting*

that the Director of the Radiocommunication Bureau is authorized by this Resolution, in close cooperation with the RAG when needed, to periodically issue updated versions of guidelines on working methods which complement and are additional to this Resolution,

*resolves*

that the working methods of the Radiocommunication Assembly, the Radiocommunication Study Groups, and the Radiocommunication Advisory Group shall be as follows<sup>1</sup>.

## PART 1

### **Working methods**

#### **1 The Radiocommunication Assembly**

**1.1** The Radiocommunication Assembly, in undertaking the duties assigned to it in Article 13 of the Constitution, Article 8 of the Convention and the General Rules of Conferences, Assemblies and Meetings of the Union, shall conduct the work of each Assembly by setting up committees, as may be required, to address organization, work programme, budget control, and editorial matters.

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<sup>1</sup> In accordance with No. 160G of the Convention, the Radiocommunication Advisory Group also adopts its own working procedures compatible with those adopted by the Radiocommunication Assembly.

**1.2** There shall also be established a Steering Committee, presided over by the Chairman of the Assembly, and composed of the Vice-Chairmen of the Assembly and the Chairmen and Vice-Chairmen of the Committees.

**1.3** Heads of Delegations shall:

- consider the proposals regarding the organization of the work and the establishment of relevant committees;
- draw up the proposals concerning the designation of Chairmen and Vice-Chairmen of the committees, Study Groups (SGs), Special Committee on Regulatory/Procedural Matters (SC), Conference Preparatory Meeting (CPM), the Radiocommunication Advisory Group (RAG), and the Coordination Committee for Vocabulary (CCV).

**1.4** All committees referred to in § 1.1 shall cease to exist with the closing of the Radiocommunication Assembly except, if required, the Editorial Committee. The Editorial Committee shall be responsible for aligning and perfecting the form of any texts prepared during the meeting and of any amendments made by the Radiocommunication Assembly to texts.

**1.5** The Radiocommunication Assembly may also establish, by Resolution, committees or groups that meet to address specific matters, if required. The terms of reference should be contained in the establishing Resolution.

**1.6** The Radiocommunication Assembly shall:

- consider the reports of the Director of the Radiocommunication Bureau (hereinafter, the Director) and of the Chairmen of the Study Groups, the Chairman of the CPM, the Chairman of the SC, and the Chairman of the Coordination Committee for Vocabulary (CCV);
- approve the programme of work arising from the review of existing Questions and new Questions, determining the priority, urgency and time-scale for the completion of their study, taking into account the financial implications (see Resolution ITU-R 5);
- delete any Question that a Study Group Chairman, at two consecutive Assemblies, reports as having received no study contributions, unless a Member State, Sector Member or Associate reports that it is undertaking studies on that Question and will contribute the results of those studies prior to the next Assembly, or unless a newer version of the Question is approved;
- decide, in the light of the approved programme of work, on the need to maintain, terminate or establish Study Groups (see Resolution ITU-R 4), and allocate to each of them the Questions to be studied;
- give special attention to problems of particular interest to developing countries by grouping Questions of interest to the developing countries as far as possible, in order to facilitate their participation in the study of those Questions;
- review and approve revised or new ITU-R Resolutions;
- approve draft Recommendations, and any other documents within its scope, or make arrangements for the delegation of the consideration and approval of draft Recommendations and other documents to the Study Groups, as set out elsewhere in this Resolution or in other ITU-R Resolutions, as appropriate;
- take note of the Recommendations approved since the last Radiocommunication Assembly, paying special attention to the Recommendations incorporated by reference within the Radio Regulations.

**1.7** In accordance with No. 137A of the Convention, and the provisions of Article 11A of the Convention, the Radiocommunication Assembly may assign specific matters within its competence, except those relating to the procedures contained in the Radio Regulations, to the Radiocommunication Advisory Group for advice on the action required on those matters.

**1.8** The Radiocommunication Advisory Group is authorized in accordance with Resolution ITU-R 52 to act on behalf of the Assembly in the period between Assemblies.

**1.9** The Radiocommunication Assembly shall report to the next World Radiocommunication Conference on the progress in matters that may be included in agendas of future Radiocommunication Conferences as well as on the progress of ITU-R studies in response to requests made by previous Radiocommunication Conferences.

**1.10** A Radiocommunication Assembly may express its opinion relating to the duration or agenda of a future Assembly or, when appropriate, to the application of the provisions of Section 4 of the General Rules of Conferences, Assemblies and Meetings of the Union relating to the cancellation of a Radiocommunication Assembly.

## **2 Radiocommunication Study Groups**

**2.1** Each Study Group shall perform an executive role, including the planning, scheduling, supervision, delegation and approval of the work and other related matters.

**2.2** The work of each Study Group, within the scope defined in Resolution ITU-R 4, shall be organized by the Study Group itself on the basis of proposals by its Chairman in consultation with the Vice-Chairmen.

**2.3** Each Study Group shall maintain a plan for its work that considers a period of at least four years ahead, taking due account of the related schedule of World Radiocommunication Conferences and Radiocommunication Assemblies. The plan may be reviewed at each meeting of the Study Group.

**2.4** The Study Groups may establish subgroups necessary to facilitate the completion of their work. With the exception of Working Parties, introduced in § 2.5, the terms of reference and milestones of subgroups established during a Study Group meeting shall be reviewed and adjusted at each Study Group meeting as appropriate.

**2.5** The Study Groups will normally set up Working Parties to study the Questions assigned to the Study Group. Working Parties are understood to exist over an undefined period to answer Questions put before the Study Group. Each Working Party will study Questions and will prepare draft Recommendations and other texts for consideration by the Study Group. To limit the resource impact on the Radiocommunication Bureau, Member States, Sector Members and Associates, a Study Group shall establish by consensus and maintain only the minimum number of Working Parties, normally three or four Working Parties.

**2.6** A Study Group may also establish one or more Task Groups to which it may assign the studies of those urgent issues and the preparation of those urgent Recommendations that cannot reasonably be carried out by a Working Party; appropriate liaison between the work of a Task Group and the Working Parties may be required. Given the urgent nature of the issues that need to be assigned to a Task Group, deadlines will be established for the completion of the work of a Task Group, and the Task Group will be disbanded upon completion of the assigned work.

**2.7** Establishment of a Task Group shall be an action taken by a Study Group during its meeting and shall be the subject of a Decision. For each Task Group, the Study Group shall prepare a text listing:

- the specific matters to be studied within the Question assigned and the subject of the draft Recommendation(s) and/or draft Report(s) to be prepared;
- the reporting date;
- the name and address of the Chairman and any Vice-Chairmen.

In addition, for the case of an urgent Question or topic arising between Study Group meetings, such that it cannot reasonably be considered at a scheduled Study Group meeting, the Chairman, in consultation with the Vice-Chairmen and the Director, may take action to establish a Task Group, in a Decision indicating the urgent Question or topic to be studied. Such action shall be confirmed by the following Study Group meeting.

**2.8** When necessary, to bring together inputs that cover multiple Study Groups, or to study Questions requiring the participation of experts from more than one Study Group, Joint Working Parties (JWP) or Joint Task Groups (JTG) may be established by the Study Groups as proposed by the relevant Study Group Chairmen.

**2.9** When Working Parties or Task Groups are assigned preparatory studies on matters to be considered by World or Regional Radiocommunication Conferences (see Resolution ITU-R 2), the work should be coordinated by the relevant Study Groups, Working Parties and Task Groups. The final reports of the Working Parties or Task Groups may be submitted directly to the Conference Preparatory Meeting (CPM) process, normally at the meeting called to consolidate Study Group texts into the draft CPM Report, or exceptionally via the relevant Study Group.

**2.10** Study Groups, Working Parties and Task Groups shall conduct their work as far as possible by correspondence, using electronic means of communication.

**2.11** As a complement to this Resolution, it is the duty of the Director to periodically issue updated versions of guidelines on the working methods and procedures within the Radiocommunication Bureau (BR) which may affect the work of Study Groups and their subordinate groups. (See *noting*.) The guidelines need also to include matters relating to the provision of meetings and correspondence groups, as well as aspects concerning documentation (see Section 8).

**2.12** The Director will maintain a list of Member States, Sector Members and Associates participating in each Study Group, Working Party or Task Group and exceptionally, Joint Rapporteur Groups if so deemed necessary (see § 2.15).

**2.13** In some cases, when urgent or specific issues arise that require analysis, it might be suitable for a Study Group, Working Party or Task Group to appoint a Rapporteur, with clearly defined terms of reference, who, being an expert, can carry out preliminary studies or conduct a survey among Member States, Sector Members and Associates participating in the work of the Study Groups, mainly by correspondence. The method used by the Rapporteur, be it via personal study or survey, is not guided by working methods but is the choice of the individual Rapporteur. Therefore, the results of that work are assumed to represent the views of the Rapporteur. It might also be useful to appoint a Rapporteur to prepare draft Recommendation(s) or other ITU-R texts. In this case, the Rapporteur should submit the drafts as a contribution to the parent group in sufficient time before the meeting to allow for comments.



**2.14** A Rapporteur Group may also be established by a Study Group, Working Party or Task Group to handle urgent or specific issues that require analysis. A Rapporteur Group, differs from the Rapporteur in that, in addition to an appointed Rapporteur, the Rapporteur Group has a membership and the results of the Rapporteur Group shall represent the agreed consensus of the Group or reflect the diversity of views of the participants in the Group. A Rapporteur Group must have clearly defined terms of reference. As much work as possible should be performed by correspondence. However, if necessary, a Rapporteur Group may hold a meeting to further its work. The work of the Rapporteur Group shall be conducted with limited support provided by BR.

**2.15** In addition to the above, in some special cases, the establishment of a Joint Rapporteur Group (JRG) consisting of Rapporteur(s) and other experts from more than one Study Group might be envisaged. A Joint Rapporteur Group should report to the Working Parties or Task Groups of the relevant Study Groups. The provisions in § 2.12 concerning Joint Rapporteur Groups will apply only to those Joint Rapporteur Groups which have been identified as requiring special support by the Director in consultation with the Chairmen of the relevant Study Groups.

**2.16** Correspondence Groups may also be established under the leadership of an appointed Correspondence Group Chairman. The Correspondence Group differs from the Rapporteur Group in that the Correspondence Group performs its work only via electronic correspondence and no meetings are required. A Correspondence Group must have clearly defined Terms of Reference and may be established and its Chairman appointed by a Working Party, a Task Group, a Study Group, the CCV, or the RAG.

**2.17** Participation in the work of the Rapporteur and Correspondence Groups of the Study Groups is open to representatives of Member States, Sector Members and Associates. Participation in the work of the Rapporteur and Correspondence Groups of the RAG is open to representatives of Member States, representatives of Sector Members, and to Chairmen of the Study Groups. Any views expressed and documentation submitted to these groups should indicate the Member State, Sector Member or Associate, as appropriate for the group, making the submission.

**2.18** Matters of substance, within the mandate of a Study Group, may only be considered within Study Groups, Working Parties, Joint Working Parties, Task Groups, Joint Task Groups, Rapporteur Groups, Joint Rapporteur Groups and Correspondence Groups.

**2.19** Each Study Group may set up an Editorial Group to ensure that the technical vocabulary used is correct. In that case, it would also ensure that the approved texts are aligned and have the same meaning in the six languages of ITU and are easily comprehensible to all users. The work of an Editorial Group is conducted by correspondence. The agreed texts are provided by BR to the designated members of the Editorial Group as and when they become available in the official languages.

**2.20** The Chairman of a Study Group may establish a Steering Committee composed of all Vice-Chairmen, Working Party Chairmen and their Vice-Chairmen, as well as the Chairmen of subgroups to assist in the organization of the work.

**2.21** The Study Group Chairmen, in consultation with their Vice-Chairmen and with the Director, shall plan the schedule of Study Group, Task Group and Working Party meetings for the forthcoming period, taking account of the budget allocated to Study Group activities. The Chairmen shall consult with the Director to ensure that the provisions of §§ 2.23 and 2.24 below are appropriately considered especially as they apply to available resources.

**2.22** Study Groups shall consider at their meetings, the draft Recommendations, Reports, progress reports and other texts prepared by Task Groups and Working Parties. To facilitate participation, a draft agenda shall be published, at latest, six weeks in advance of each meeting, indicating, to the extent possible, specific days for consideration of different topics.

**2.23** For meetings held outside Geneva, the provisions of Resolution 5 of the Plenipotentiary Conference (Kyoto, 1994) shall apply. Invitations to hold meetings of the Study Groups or their Task Groups and Working Parties away from Geneva should be accompanied by a statement indicating the host's agreement to defray the additional expenditure involved and the host's acceptance of *resolves* 2 of Resolution 5 (Kyoto, 1994) which states "that invitations to hold development conferences and meetings of the Study Groups of the Sectors away from Geneva should not be accepted unless the host government provides at least adequate premises and the necessary furniture and equipment free of charge, except that in the case of developing countries equipment need not necessarily be provided free of charge by the host government, if the government so requests".

**2.24** To ensure the efficient use of the resources of the Radiocommunication Sector and of the participants in its work and to reduce the amount of travel involved, the Director, in consultation with the Chairmen, shall establish and publish a programme of meetings in a timely manner. This programme should take into account relevant factors, including:

- the expected participation when grouping the meetings of a certain Study Group, Working Parties or Task Groups;
- the desirability of contiguous meetings on related topics;
- the capacity of the ITU resources;
- the requirements for documents to be used in meetings;
- the need for coordination with the other activities of the ITU and other organizations;
- any directive issued by the Radiocommunication Assembly concerning the Study Group meetings.

**2.25** A Study Group meeting should, wherever appropriate, be held immediately after Working Party and Task Group meetings. The agenda of such a Study Group meeting should contain the following points:

- if some Working Parties and Task Groups have met earlier and have prepared draft Recommendations, for which the approval process in accordance with § 10 is to be applied, a list of such draft Recommendations, each accompanied by a summary of the proposal (i.e. summary of the new or revised Recommendation);
- a description of the topics to be addressed by the Working Party and Task Group meetings just before the Study Group meeting for which draft Recommendations may be developed.

**2.26** The agenda for Working Party and Task Group meetings, which are immediately followed by a Study Group meeting, should indicate as specifically as possible the topics to be addressed, and should indicate where it is anticipated that draft Recommendations are to be considered.

**2.27** Each Study Group may adopt draft Recommendations. The draft Recommendations shall be approved according to the provisions of § 10. Additionally, each Study Group is encouraged to update, and should continue to review the maintained Recommendations with proper justification for old ones and, if they are found no longer necessary, should propose their deletion. (See § 11.)

**2.28** Each Study Group may adopt draft Questions for approval in accordance with the provisions of § 3.

**2.29** Each Study Group may also adopt draft Resolutions for approval by the Radiocommunication Assembly.

**2.30** Each Study Group may approve Decisions, Opinions, Handbooks, Reports, and editorially updated Recommendations. The Study Group may authorize the approval of Handbooks, e.g. by the Working Party concerned.

### **3 Questions to be studied by the Study Groups**

**3.1** In accordance with No. 129 of the Convention new or revised Questions referred to the Radiocommunication Assembly by the Plenipotentiary Conference, any other conference, the Council or the Radio Regulations Board shall be studied.

**3.2** Concerning Questions submitted in accordance with § 3.1, the Director shall, as soon as possible, consult with the Study Group Chairmen and Vice-Chairmen and shall determine the appropriate Study Group to which the Question shall be assigned, and the urgency for the studies.

**3.3** In accordance with Article 11, Nos. 149 and 149A of the ITU Convention and Resolution ITU-R 5, studies may also be undertaken without Questions, on matters within the scope of the Study Group.

**3.4** Other new or revised Questions, proposed within Study Groups, may be adopted by a Study Group and approved:

- by the Radiocommunication Assembly (see Resolution ITU-R 5);
- by consultation in the interval between Radiocommunication Assemblies, after adoption by a Study Group.

The process for approval by consultation shall be the same as that used for Recommendations in § 10.4.

**3.5** Each Question shall be assigned to only one Study Group.

**3.6** The Study Group Chairman, in consultation with the Vice-Chairmen, shall, to the extent possible, assign the Question to a single Working Party or Task Group or, dependent upon the urgency of a new Question, shall propose the establishment of a new Task Group, (see § 2.7), or shall decide to refer the Question to the next Study Group meeting. In order to avoid duplication of effort, in cases where a Question is relevant to more than one Working Party, a specific Working Party responsible for consolidating and coordinating the texts shall be identified.

**3.7** Each Study Group shall identify, to the Director, Questions that may be suppressed because studies have been completed, may no longer be necessary or have been superseded. The Director shall consult Member States for approval of their suppression under the same procedure given in § 3.4 above or shall forward relevant proposals to the next Radiocommunication Assembly, with justification for the action.

### **4 Preparations for World (and Regional) Radiocommunication Conferences**

**4.1** The procedures outlined in Resolution ITU-R 2 apply to the preparation for World Radiocommunication Conferences (WRCs). As appropriate, they may be adapted by a Radiocommunication Assembly to apply to the case of a Regional Radiocommunication Conference (RRC).

**4.2** Preparations for WRCs will be carried out by the CPM (see Resolution ITU-R 2).

**4.3** Questionnaires issued by the Bureau should be limited to the required technical and operational characteristics to perform the necessary studies, unless such questionnaires stem from a decision of a WRC or RRC.

## **5 Coordination among Study Groups, Sectors and with other international organizations**

### **5.1 Meetings of Study Group Chairmen and Vice-Chairmen**

When the need arises, the Director will call a meeting of the Chairmen and Vice-Chairmen. The purpose of the meeting is to ensure the most effective coordination of the work of the Study Groups. The Director shall serve as Chairman of this meeting. The meeting shall also consider the status of work in the Study Groups regarding agendas for the next two WRCs and make recommendations accordingly. If appropriate, such meetings could be by electronic means, such as telephone or video conferences or using the Internet. However, a one-day face-to-face meeting every two years shall be organized preceding a RAG meeting.

### **5.2 Liaison Rapporteurs**

Coordination between Study Groups may be ensured by the appointment of Study Group Liaison Rapporteurs to participate in the work of the other Study Groups or with Study Groups of the other two Sectors.

### **5.3 Intersector Coordination Groups**

In specific instances, complementary work on certain topics may be conducted by Study Groups in the Radiocommunication Sector, as well as in the Telecommunication Standardization Sector, and the Telecommunication Development Sector. In such circumstances, it may be agreed between the two Sectors or among the three Sectors to establish an Intersector Coordination Group (ICG). For details on this process see Resolutions ITU-R 6 and ITU-R 7.

### **5.4 Other international organizations**

When cooperation and coordination with other international organizations is necessary, the interface shall be provided by the Director. Liaison on specific technical matters, following consultation with the Director, may be carried out by Working Parties or Task Groups, or by a representative appointed by a Study Group. For details on this process, see Resolution ITU-R 9.

## **PART 2**

### **Documentation**

## **6 Radiocommunication Assembly and Radiocommunication Study Group texts**

### **6.1 Definitions**

The Radiocommunication Assembly and Radiocommunication Study Group texts are defined as follows:

### **6.1.1 Question**

A statement of a technical, operational or procedural problem, generally seeking a Recommendation, Handbook or Report (see Resolution ITU-R 5).

### **6.1.2 Recommendation**

An answer to a Question or part(s) of a Question which, within the scope of existing knowledge and studies or the results of studies referred to in § 3.3, recommends specifications, data or guidance provides a recommended way or ways of undertaking a specified task; or a recommended procedure or procedures for a specified application and which is considered to be sufficient to serve as a basis for international cooperation in a given context in the field of radiocommunications.

As a result of further studies, taking into account developments and new knowledge in the field of radiocommunications, Recommendations may be expected to be revised and updated (see § 11). However, in the interests of stability, Recommendations should not normally be revised more frequently than every two years, unless the proposed revision, which complements rather than changes the agreement reached in the previous version, urgently needs to be included, or unless significant errors or omissions are identified (see § 10.1.5).

Each Recommendation should include a brief “scope” text clarifying the objective of the Recommendation. The scope should remain in the text of the Recommendation after its approval.

NOTE 1 – When Recommendations provide information on various systems relating to one particular radio application, they should be based on criteria relevant to the application, and should include, where possible, an evaluation of the recommended systems, using those criteria. In such cases, the relevant criteria and other pertinent information are to be determined, as appropriate, within the Study Group.

NOTE 2 – Recommendations should be drafted taking account of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC on intellectual property rights, as given in Annex 1.

### **6.1.3 Resolution**

A text giving instructions on the organization, methods or programmes of Radiocommunication Assembly or Study Group work.

### **6.1.4 Opinion**

A text containing a proposal or a request destined for another organization (such as other Sectors of the ITU, international organizations, etc.) and not necessarily relating to a technical subject.

### **6.1.5 Decision**

A text giving instructions on the organization of the work of a Study Group.

### **6.1.6 Report**

**6.1.6.1** A technical, operational or procedural statement, prepared by a Study Group on a given subject related to a current Question or the results of studies referred to in § 3.3;

**6.1.6.2** A technical, operational or procedural statement prepared by the CPM for Radiocommunication Conferences.

### **6.1.7 Handbook**

A text which provides a statement of the current knowledge, the present position of studies, or of good operating or technical practice, in certain aspects of radiocommunications, which should be addressed to a radio engineer, system planner or operating official who plans, designs or uses radio services or systems, paying particular attention to the requirements of developing countries. It should be self-contained, require no familiarity with other ITU Radiocommunication texts or procedures, but should not duplicate the scope and content of publications readily available outside the ITU.

## **6.2 Presentation of texts**

**6.2.1** Texts should be as brief as possible, taking account of the necessary content, and should relate directly to the Question or part of the Question being studied.

**6.2.2** Each text should include a reference to related texts and, where appropriate, to pertinent items of the Radio Regulations.

**6.2.3** Texts shall be presented showing their number, their title and an indication of the year of their initial approval, and, where appropriate, the year of approval of any revisions.

## **6.3 Publications**

Publication of approved texts shall be according to the following scheme:

- all Recommendations in force shall, after approval, be published as soon as possible using electronic media;
- all Recommendations in force may also be made available in paper form subject to the publication policy of ITU;
- all Resolutions and Opinions shall be published in both electronic and paper form following each Radiocommunication Assembly;
- Reports and Handbooks shall be produced and made available in the most economical and practical form in both electronic and paper form following their approval.

## **7 Preparatory documentation**

### **7.1 Radiocommunication Assemblies**

Preparatory documentation shall include:

- draft texts, prepared by Study Groups, for approval;
- a Report from the Chairman of each Study Group, the SC, the CCV and the CPM, reviewing activities since the preceding Radiocommunication Assembly, including from each Study Group Chairman a list of Questions for which no input documentation has been received for the period mentioned in § 1.6. Should a Chairman believe that a certain Question should continue an explanation must be given;
- a Report by the Director which should include proposals for the future work programme;
- a list of Recommendations approved since the previous Radiocommunication Assembly;
- contributions submitted from Member States and Sector Members addressed to the Radiocommunication Assembly.

## **7.2 Radiocommunication Study Groups**

Preparatory documentation shall include:

- any directives issued by the Radiocommunication Assembly with respect to the Study Group, including this Resolution;
- draft Recommendations and other texts prepared by Task Groups or Working Parties;
- proposals for approval of draft Recommendations between Radiocommunication Assemblies (see § 10);
- progress reports from each Task Group, Working Party and Rapporteur;
- the contributions to be considered at the meeting;
- documentation prepared by the Bureau, particularly of an organizational or procedural nature, for clarification purposes or in response to Study Group requests;
- the Chairman's Report, summarizing the conclusions of any work carried out by correspondence and preparing the work to be accomplished at the meeting;
- the conclusions of the preceding meeting, in so far as they have not been included in the official texts referred to above;
- an outline agenda indicating: draft Recommendations to be considered, draft Questions to be considered, reports from Task Groups and Working Parties to be received, and draft Decisions, draft Opinions, draft Handbooks and draft Reports to be approved.

## **8 Contributions to Radiocommunication Study Group studies**

**8.1** The guidelines issued by the Director (see *noting* and § 2.11) shall contain guidance on preparation of contributions, the deadlines for their submission and details of the various types of documents, including reports and documents prepared by Chairmen, and liaison statements. The guidelines should also address practical matters concerning the effective distribution of documents by electronic means.

**8.2** In particular:

- Contributions shall be provided to the Director electronically, with some exceptions for developing countries unable to do so.
- The Director may return a document that does not comply with the guidelines, for it to be brought into line.
- Each contribution should clearly indicate the Question or topic, the group (e.g. Study Group, Task Group, Working Party) for which it is intended and full details of the contact person (including e-mail address, postal address, telephone number, facsimile number, etc.), as may be needed to clarify the contribution.
- Contributions should be sent to the Chairman of the group concerned as well as to the Chairman and Vice-Chairmen of the Study Group.
- Contributions should be limited in length (if possible, less than ten pages) and be prepared using standard word-processing software, without using any auto-formatting facility; modifications to existing text should be indicated by means of revision marks (using "Track Changes").

**8.3** For meetings of all groups (Study Groups, Working Parties, Task Groups, etc.), the following deadlines apply for the submission of contributions:

- *where translation is required*, contributions should be received at least three months prior to the meeting, and will be made available not later than four weeks before the meeting. For later contributions, no commitment can be made by the Secretariat to ensure the document will be available at the opening of the meeting in all the required languages;
- otherwise, for documents *not requiring translation*, contributions (including Revisions, Addenda and Corrigenda to contributions) received by 1600 hours UTC, seven calendar days prior to the start of the meeting are made available for the opening of the meeting. The deadline applies only to contributions from Member States, Sector Members and Associates.

The secretariat cannot accept submissions later than the aforementioned deadline. Documents not available at the opening of a meeting cannot be discussed at the meeting.

**8.4** Following the meetings of Task Groups or Working Parties, the Chairmen of the groups concerned shall prepare a report for their future meetings giving information regarding progress made and work in progress. These Reports should be prepared within one month of the end of the meeting concerned. In addition, annexes to a Chairman's Report, which contain draft texts for which further study is needed, should be issued by BR within two weeks of the end of the meeting.

**8.5** When articles are referred to in documents submitted to the Radiocommunication Bureau, such references or bibliography should be to published works which are readily available through library services.

## **9 Circulation of information**

**9.1** The Director shall issue, at regular intervals, information that will include:

- an invitation to participate in the work of the Study Groups for the next study period;
- a request form to be completed for the receipt of the documentation;
- a schedule of meetings for at least the next 12 months with updates, as appropriate;
- all Study Group meeting invitations;
- CPM preparatory documents and final Reports;
- preparatory documents for the Radiocommunication Assembly.

The following information will be provided based on responses to requests for documentation as outlined above:

- Study Group circulars that will include invitations to all Working Party, Task Group and Joint Rapporteur Group meetings with a form for individual participation and draft agenda;
- Study Group, Working Party, Task Group and Joint Rapporteur Group documents;
- other information that will assist Member States and Sector Members.

**9.2** Information on Study Group activities will also be available in electronic form, as appropriate.



## PART 3

### Adoption and approval

#### 10 Adoption and approval of Recommendations

##### 10.1 Introduction

**10.1.1** When a study has reached a mature state, based on a consideration of existing ITU-R documentation and of contributions from Member States, Sector Members or Associates, which has resulted in a draft new or revised Recommendation, the approval process to be followed is in two stages:

- adoption by the Study Group concerned; dependent on circumstances, the adoption may take place at a Study Group meeting or by correspondence following the Study Group meeting (see § 10.2);
- following adoption, approval by the Member States, either by consultation between Radiocommunication Assemblies or at a Radiocommunication Assembly (see § 10.4);

if justified, in some cases these processes may be undertaken simultaneously based on a decision by the Study Group (see § 10.3).

**10.1.2** There may be exceptional circumstances where no Study Group meeting has been scheduled at a suitable time prior to a Radiocommunication Assembly, and where a Task Group or Working Party has prepared draft proposals for new or revised Recommendations which require urgent action. In these cases, if at its previous meeting the Study Group decides, the Study Group Chairman may submit such proposals directly to the Radiocommunication Assembly with justification, and should outline the reasons for such urgent action.

**10.1.3** Approval may only be sought for a draft new or revised Recommendation within the Study Group's mandate as defined by the Questions allocated to it in accordance with Nos. 129 and 149 of the Convention. Approval may however also be sought for revision of an existing Recommendation within the Study Group's mandate for which no current Question exists.

**10.1.4** Where a draft Recommendation (or revision) falls, exceptionally, within the mandate of more than one Study Group, the Chairman of the Study Group proposing the approval should consult and take into account the views of all the other Study Group Chairmen concerned before proceeding with the procedures below.

##### 10.2 Adoption of Recommendations

###### 10.2.1 Principles for the adoption of a new or revised Recommendation by a Study Group both at a meeting of the Study Group and by correspondence

**10.2.1.1** A draft Recommendation (new or revised) shall be considered to be adopted by the Study Group if not opposed by any delegation representing a Member State attending the meeting or responding to the correspondence. If a delegation of a Member State opposes the adoption, the Chairman of the Study Group should consult with the delegation concerned in order for the objection to be resolved.

**10.2.1.2** If there is an objection to the text that cannot be resolved, any or a combination of the following procedures and subject to c) below, shall be followed:

- a) if this text is in response to Questions of Category C1 (see Resolution ITU-R 5) or to other matters relating to a WRC, the text shall be forwarded to the Radiocommunication Assembly;
- b) in other cases, the Study Group Chairman should seek the agreement of the objecting administration to forward the text with the objection to the Radiocommunication Assembly and, if this agreement is not obtained, should refer the text back to the Working Party or Task Group, as appropriate, giving the reasons for such objection so that the matter may be considered and resolved in the meeting of such group;
- c) however, if the matter cannot be resolved in the Working Party or Task Group and, if consensus is reached in the Study Group meeting that there is sufficient evidence that the technical objection has already been adequately addressed, and taking account of the urgency of the matter and the timing of the next Assembly, the Study Group Chairman, after consulting the Director, may forward the text, with a detailed justification, to the Radiocommunication Assembly, indicating that the text has not been adopted within the Study Group; the administration concerned should be notified of this action.

In all cases, the Radiocommunication Bureau shall send, as soon as possible, to the Radiocommunication Assembly, Task Group or Working Party, as appropriate, the reasons given by the Study Group Chairman, in consultation with the Director, for the decision and the detailed objection from the administration that objected to the draft new or revised Recommendation.

## **10.2.2 Procedure for adoption at a Study Group meeting**

**10.2.2.1** A Study Group may consider and adopt draft new or revised Recommendations, when the draft texts have been prepared sufficiently far in advance of the Study Group meeting so that the draft texts will have been available in either paper and/or electronic forms at least four weeks prior to the start of the Study Group meeting.

**10.2.2.2** Upon request of the Study Group Chairman, the Director shall explicitly indicate the intention to seek adoption of new or revised Recommendations at a Study Group meeting when announcing the convening of the relevant Study Group meeting. The announcement shall include summaries of the proposals (i.e. summaries of the new or revised Recommendations). Reference shall be provided to the document where the text of the draft of the new or revised Recommendation may be found.

This information shall be distributed to all Member States and Sector Members and should be sent by the Director so that it shall be received, so far as practicable, at least three months before the meeting.

**10.2.2.3** The Study Group should agree summaries of draft new Recommendations and summaries of draft revisions to Recommendations, these summaries being included in subsequent Administrative Circulars relating to the approval process.

## **10.2.3 Procedure for adoption by a Study Group by correspondence**

**10.2.3.1** When a draft new or revised Recommendation has not been anticipated for specific inclusion in the agenda of a Study Group meeting, the participants at the Study Group meeting may decide, after due consideration, to seek adoption of the draft new or revised Recommendation by the Study Group by correspondence (see also § 2.10).

**10.2.3.2** The Study Group should agree summaries of draft new Recommendations and summaries of draft revisions to Recommendations.

**10.2.3.3** Immediately following the Study Group meeting, the Director should circulate these draft new or revised Recommendations to all Member States and Sector Members participating in the work of the Study Group for full Study Group consideration by correspondence.

**10.2.3.4** The period for Study Group consideration shall be two months following the circulation of the draft new or revised Recommendations.

**10.2.3.5** If, within this period for Study Group consideration, no objections are received from Member States, the draft new or revised Recommendation shall be considered to be adopted by the Study Group.

### **10.3 Procedure for the simultaneous adoption and approval by correspondence**

**10.3.1** When a Study Group meeting decides to send the draft new or revised Recommendation for adoption by correspondence, according to the provisions of §§ 10.2.3.1 and 10.2.3.2, the Study Group may also decide to make use of this procedure for simultaneous adoption and approval (PSAA), if there is no objection by any Member State attending the meeting.

**10.3.2** In this case, immediately following the Study Group meeting, the Director should circulate these draft new or revised Recommendations to all Member States and to Sector Members.

**10.3.3** The period for consideration shall be three months following the circulation of the draft new or revised Recommendations.

**10.3.4** If, within this period for consideration, no objection is received from a Member State, the draft new or revised Recommendation shall be considered to be adopted by the Study Group. Since the PSAA procedure has been followed, such adoption is considered to constitute approval and the procedure for approval in § 10.4 is unnecessary.

**10.3.5** If, within this period for consideration, an objection is received from a Member State, the draft new or revised Recommendation shall be considered as not adopted, and the procedure described in § 10.2.1.2 shall apply.

**10.3.6** The Director shall promptly notify, by circular letter, the results of the above procedure, indicating the date of entry into force, as appropriate.

**10.3.7** Should minor, purely editorial amendments or correction of evident oversights or inconsistencies in the text be necessary, the Director may correct these with the agreement of the Chairman of the relevant Study Group.

**10.3.8** The ITU will publish the approved new or revised Recommendations in the official languages of the Union as soon as practicable.

**10.3.9** Any Member State or Sector Member considering itself to be adversely affected by a Recommendation approved in the course of a study period may refer its case to the Director who shall submit it to the relevant Study Group for prompt attention.

**10.3.10** The Director shall inform the next Radiocommunication Assembly of all cases notified in conformity with § 10.3.9.

### **10.4 The traditional procedure for the approval of new or revised Recommendations**

**10.4.1** When a draft new or revised Recommendation has been adopted by a Study Group, by either of the procedures given in § 10.2, then the text shall be submitted for approval by Member States.

**10.4.2** Approval of new or revised Recommendations may be sought:

- by consultation of the Member States as soon as the relevant Study Group has adopted the text;
- if justified, at a Radiocommunication Assembly.

**10.4.3** At the Study Group meeting where a draft is adopted or where it is decided to seek adoption by Study Group correspondence, the Study Group shall decide to submit the draft new or revised Recommendation for approval either at the next Radiocommunication Assembly or by consultation of the Member States, unless the Study Group has decided to use the PSAA procedure as described in § 10.3.

**10.4.4** When it is decided to submit a draft for approval, with detailed justification, to the Radiocommunication Assembly, the Study Group Chairman shall inform the Director and request that he takes the necessary action to ensure that it is included in the agenda for the Assembly.

**10.4.5** When it is decided to submit a draft for approval by consultation, the following conditions and procedures apply.

**10.4.5.1** At the Study Group's meeting the decision of the delegations representing Member States to apply this approval procedure must be unopposed. A delegation may advise at the Study Group meeting that it is abstaining from the decision to apply the procedure. This delegation's presence shall then be ignored for the purposes of this decision. Such an abstention may subsequently be revoked, but only during the course of the Study Group meeting.

Exceptionally, but only during the Study Group meeting, delegations may request more time to consider their positions. Unless advised of formal opposition from any of these delegations within a period of two months after the last day of the meeting, the approval process by consultation shall continue.

**10.4.5.2** For the application of the approval procedure by consultation, within one month of a Study Group's adoption of a draft new or revised Recommendation, according to one of the methods in § 10.2, the Director shall request Member States to indicate within three months whether they approve or do not approve the proposal. This request shall be accompanied by the complete final text of the draft new Recommendation, or the complete final text, or modified parts of, the revised Recommendation.

**10.4.5.3** The Director shall also advise Sector Members participating in the work of the relevant Study Group under the provisions of Article 19 of the Convention, that Member States are being asked to respond to a consultation on a proposed new or revised Recommendation. This advice should be accompanied by the complete final texts, or revised parts of the texts, for information only.

**10.4.5.4** If 70% or more of the replies from Member States indicate approval, the proposal shall be accepted. If the proposal is not accepted, it shall be referred back to the Study Group.

Any comments received along with responses to the consultation shall be collected by the Director and submitted to the Study Group for consideration.

**10.4.5.5** Those Member States who indicate that they do not approve are encouraged to advise their reasons and to participate in the future consideration by the Study Group and its Working Parties and Task Groups.

**10.4.5.6** The Director shall promptly notify, by circular letter, the results of the above procedure for approval by consultation, indicating the date of entry into force, as appropriate.

**10.4.6** Should minor, purely editorial amendments or correction of evident oversights or inconsistencies in the text as presented for approval be necessary, the Director may correct these with the agreement of the Chairman of the relevant Study Group.

**10.4.7** The ITU will publish the approved new or revised Recommendations in the official languages of the Union as soon as practicable.

**10.4.8** Any Member State or Sector Member considering itself to be adversely affected by a Recommendation approved in the course of a study period may refer its case to the Director who shall submit it to the relevant Study Group for prompt attention.

**10.4.9** The Director shall inform the next Radiocommunication Assembly of all cases notified in conformity with § 10.4.8.

## **11 Updating or deletion of ITU-R Recommendations**

**11.1** In view of translation and production costs, any updating of ITU-R Recommendations for which substantial revision has not been made within the last 10-15 years should, as far as possible, be avoided.

**11.2** Radiocommunication Study Groups (including CCV) should continue to review maintained Recommendations, particularly older Recommendations, and, if they are found to be no longer necessary or obsolete, should propose their revision or deletion. In this process, the following factors should be taken into account:

- if the content of the Recommendations still has validity, are they really so useful as to be continuously recommended by ITU-R?
- is there another Recommendation developed later which handles the same (or quite similar) topic(s) and could cover the points included in the old Recommendation?
- in the case that only a part of the Recommendation is regarded as still useful, the possibility to transfer the relevant part to another Recommendation developed later.

**11.3** To facilitate the review work, the Director shall endeavour before each Radiocommunication Assembly, in consultation with the Chairmen of the Study Groups, to prepare lists of ITU-R Recommendations that may be identified in § 11.1. After the review by the relevant Study Groups, the results should be reported to the next Radiocommunication Assembly through the Chairmen of the Study Groups.

**11.4** Radiocommunication Study Groups (including CCV) are encouraged, where appropriate, to editorially update maintained Recommendations in order to reflect recent changes, such as:

- ITU structural changes;
- renumbering of Radio Regulation provisions<sup>2</sup> resulting from the simplification of the Radio Regulations, provided the Radio Regulation provision text is not changed, e.g. removal of “S” from referenced Radio Regulation Article provisions;
- updating of cross-references between ITU-R Recommendations;
- need to delete references to Questions that are no longer in force.

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<sup>2</sup> The Radiocommunication Bureau should be consulted in this respect.

**11.5** Editorial revisions should not be regarded as draft revisions of Recommendations as specified in § 10, but each editorially updated Recommendation should be accompanied, until the next revision, by a footnote stating “Radiocommunication Study Group (*nomenclature of Study Group to be inserted as appropriate*) made editorial amendments to this Recommendation in the year (*insert year in which amendments have been made*) in accordance with Resolution ITU-R 1”.

**11.6** Furthermore, editorial updating shall not be applied to the updating of ITU-R Recommendations incorporated by reference in the Radio Regulations. Such updating of ITU-R Recommendations shall be made through the normal procedure specified in § 10.4 of this Resolution.

**11.7** Decisions to delete Recommendations should take into account the status of telecommunication technology, which may differ from country to country and between Regions. Therefore, even if some administrations are in favour of suppressing an old Recommendation, technical/operational requirements addressed in that Recommendation may still be important for some other administrations.

**11.8** The deletion of existing Recommendations shall follow a two-stage process:

- agreement to the deletion by a Study Group;
- following this agreement to delete, approval by Member States, by consultation.

Approval of the deletion of Recommendations by consultation may be undertaken when using either of the procedures described in § 10.3 or § 10.4. The Recommendations proposed for deletion may be listed in the same Administrative Circular treating draft Recommendations under either of these two procedures.

## **Annex 1**

### **Common Patent Policy for ITU-T/ITU-R/ISO/IEC**

The Common Patent Policy is available at <http://www.itu.int/ITU-T/dbase/patent/patent-policy.html>

## RESOLUTION ITU-R 2-5

### Conference Preparatory Meeting

(1993-1995-1997-2000-2003-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that the duties and functions of the Radiocommunication Assembly, in preparing for World Radiocommunication Conferences (WRCs) are stated in Articles 13 of the ITU Constitution and 8 of the ITU Convention;
- b) that special arrangements are necessary for such preparations,

*noting*

that the Special Committee is part of the preparation for the Conference, for procedural and regulatory matters, and the rules governing the Committee are in Resolution ITU-R 38,

*resolves*

- 1** that a Conference Preparatory Meeting (CPM) shall be set up on the basis of the following principles:
  - that the CPM should be permanent;
  - that it should address topics on the agenda of the immediately forthcoming conference and make provisional preparations for the subsequent conference;
  - that invitations to participate should be sent to all Member States of the ITU and to Radiocommunication Sector Members;
  - that documents should be distributed to all Member States of the ITU and to Radiocommunication Sector Members wishing to participate in the CPM;
  - that the terms of reference of the CPM should include the updating, rationalization, presentation and discussion of material from Radiocommunication Study Groups and the Special Committee, together with consideration of new material submitted to it, including contributions on the review of existing WRC Resolutions, Recommendations and contributions, if available, by Member States with contributions concerning the Agenda for the next and subsequent WRCs. These contributions should be included in an Annex to the CPM Report for information only;
- 2** that the scope of the CPM shall be to prepare a consolidated report to be used in support of the work of World Radiocommunication Conferences, based on:
  - contributions from administrations, the Special Committee, the Radiocommunication Study Groups (see also No. 156 of the Convention), and other sources (see Article 19 of the Convention) concerning the regulatory, technical, operational and procedural matters to be considered by such conferences;
  - the inclusion, to the extent possible, of reconciled differences in approaches as contained in the source material, or, in the case where the approaches cannot be reconciled, the inclusion of the differing views and their justification;
- 3** that the working methods shall be as presented in Annex 1.

## **Annex 1**

### **Working methods for the Conference Preparatory Meeting**

- 1** Studies of regulatory, technical, operational and procedural matters will be undertaken by the Study Groups or the Special Committee, as appropriate.
- 2** The CPM will normally hold two sessions during the interval between WRCs.
  - 2.1** The first session will be for the purpose of coordinating the work programmes of the relevant Study Groups, and preparing a draft structure for the CPM Report, based on the agenda for the next two WRCs, and for taking into account any directives which may have come from the previous WRC. This first session will be of short duration and the Study Group Chairmen and Vice-Chairmen will be invited to participate.
  - 2.2** The second session will be for the purpose of preparing the report for the next WRC. This session shall also review progress on preparatory studies for agenda items to be considered at the WRC following the next scheduled WRC. The second session will be of adequate duration to accomplish the necessary work (generally not exceeding two weeks) and will be timed to ensure publication of the Final Report at least six months before the next WRC.
  - 2.3** The first session will identify issues for study in preparation for the next WRC and, to the extent necessary, for the subsequent WRC. These issues should be derived from the draft and provisional Conference agendas and should, as far as possible, be self contained and independent. For each issue a single ITU-R group (which could be a Study Group, Task Group or Working Party, etc.) should be identified to take responsibility for the preparatory work, inviting input and/or participation from other concerned\* ITU-R groups as necessary. As far as possible, existing groups should be used for this purpose, with new groups being established only where this is considered to be necessary.
  - 2.4** Meetings of the ITU-R groups identified (i.e. the responsible groups) should be scheduled to facilitate maximum participation by all interested members. The groups should base their output on existing material plus new contributions. The final reports of the responsible groups may be submitted directly to the CPM process, normally at the CPM Management Team meeting, or exceptionally via the relevant Study Group.
  - 2.5** In order to facilitate the understanding by all participants of the contents of the draft CPM Report, an executive summary for each issue (see § 2.3 above) will be developed by the responsible group and used by BR for informing the regional groups throughout that WRC study cycle, with the final summary being prepared for the final draft CPM text by the responsible group and included in the CPM Report.
- 3** The work of the CPM will be directed by a Chairman and Vice-Chairmen. The Chairman will be responsible for preparing the report to the next WRC.
- 4** The Chairman or the CPM may appoint Chapter Rapporteurs to assist in guiding the development of the text that will form the basis of the CPM Report, and to help with the consolidation of texts from the responsible groups into a cohesive draft CPM Report.
- 5** The CPM Chairman, the Vice-Chairmen and the Chapter Rapporteurs, and the Special Committee Chairman and Vice-Chairmen will be called the CPM Steering Committee.

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\* A concerned ITU-R group may be either a contributing group on a specific item, or an interested group that will follow the work on a specific issue and act as appropriate.



- 6** The Chairman shall convene a meeting of the CPM Steering Committee together with the Chairmen of the responsible groups and the Study Group Chairmen. This meeting (called the CPM Management Team meeting) will consolidate the output from the responsible groups into the draft CPM Report, which will be an input document to the second session of the CPM.
- 7** The consolidated draft CPM Report shall be translated into the official languages of the Union and distributed to Member States a minimum of two months prior to the date scheduled for the second session of the CPM.
- 8** Every effort shall be made to ensure that the volume of the final CPM Report is kept to a minimum. To this end, responsible groups are urged to maximize the use of references to approved ITU-R Recommendations and Reports, as appropriate, in preparing CPM texts.
- 9** In relation to working arrangements, the CPM shall be considered as an ITU meeting in accordance with No. 172 of the Constitution.
- 10** In preparing for the CPM, maximum use should be made of electronic means for the distribution of contributions to participants.
- 11** The other working arrangements shall be in accordance with the relevant provisions of Resolution ITU-R 1.
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## RESOLUTION ITU-R 4-5

### **Structure of Radiocommunication Study Groups**

(1993-1995-1997-2000-2003-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) No. 133 and Article 11 of the ITU Convention;
- b) that the work of the Radiocommunication Study Groups is involved with developing the technical, operational and procedural bases for efficient use of the radio spectrum and the geostationary-satellite orbit;
- c) that cooperation between the Radiocommunication Sector and international and regional organizations with regard to the development of standards for radiocommunication systems and operations would provide considerable benefits,

*resolves*

- 1** that six Radiocommunication Study Groups shall be set up as shown in Annex 1;
- 2** that, in liaison with the Telecommunication Standardization Sector, the Telecommunication Development Sector, the ITU General Secretariat and with other interested organizations, the Radiocommunication Bureau organizes the work of a Coordination Committee for Vocabulary, the scope of which is given in Annex 2.

## Annex 1

### The Radiocommunication Study Groups

#### STUDY GROUP 1

(SPECTRUM MANAGEMENT)

(Spectrum planning, utilization, engineering, sharing and monitoring)

*Scope:*

Spectrum management principles and techniques, general principles of sharing, spectrum monitoring, long-term strategies for spectrum utilization, economic approaches to national spectrum management, automated techniques and assistance to developing countries in cooperation with the Telecommunication Development Sector.

<i>Chairman:</i>	Mr R. HAINES	(United States)
<i>Vice-Chairmen:</i>	Mr R. GARCIA DE SOUZA	(Brazil)
	Mr S.I. GHARBAWI	(Egypt)
	Mr S.K. KIBE	(Kenya)
	Mr H. MAZAR	(Israel)
	Mr S.Y. PASTUKH	(Russian Federation)
	Dr C. RYU	(Korea (Rep. of))
	Mr V.V. SINGH	(India)
	Mr J. VERDUIJN	(Netherlands)
	Mr X. ZHOU	(China)

#### STUDY GROUP 3

(RADIOWAVE PROPAGATION)

*Scope:*

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

<i>Chairman:</i>	Mr B. ARBESSER-RASTBURG	(ESA)
<i>Vice-Chairmen:</i>	Mr F.Y.N. DAUDU	(Nigeria)
	Prof. M. PONTES	(Brazil)
	Mr J.C. WANG	(United States)
	Ms C. WILSON	(Australia)
	Prof. Dr H. ZHU	(China)

## STUDY GROUP 4

(SATELLITE SERVICES<sup>1</sup>)

*Scope:*

Systems and networks for the fixed-satellite service, mobile-satellite service, broadcasting-satellite service and radiodetermination-satellite service.

<i>Chairman:</i>	Dr V. RAWAT	(Canada)
<i>Vice-Chairmen:</i>	Mr M. ABE	(Japan)
	Mr O. BAIYE	(Nigeria)
	Mr N.A. BIN HAMMAD	(United Arab Emirates)
	Mr M.G. CASTELLO BRANCO	(Brazil)
	Mr X. GAO	(China)
	Mr M.M. SIMONOV	(Russian Federation)
	Mr A. VALLET	(France)
	Mr J.J. WENGRYNIUK	(United States)

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<sup>1</sup> Study Groups 4 and 6 are invited to work together in joint activities, including possible joint meetings to resolve assignment of Questions related to the broadcasting-satellite service, following the guidelines below:

- 1) All Questions, or part of Questions, addressing sharing shall be assigned to Study Group 4.
- 2) All Questions, or part of Questions, addressing frequency usage shall be assigned to Study Group 4.
- 3) All Questions, or part of Questions, addressing performance objectives and quality of service shall be assigned to Study Group 6.
- 4) All Questions, or part of Questions, addressing RF performance requirements of satellite links to meet the service requirements specified by Study Group 6, shall be assigned to Study Group 4.

## STUDY GROUP 5

(TERRESTRIAL SERVICES)

*Scope:*

Systems and networks for fixed, mobile, radiodetermination, amateur and amateur-satellite services.

<i>Chairman:</i>	Dr A. HASHIMOTO	(Japan)
<i>Vice-Chairmen:</i>	Mr T.K.A. ALEGE	(Nigeria)
	Dr A. CHANDRA	(India)
	Dr J. COSTA	(Canada)
	Mr T. EWERS	(Germany)
	Mr C.T. GLASS	(United States)
	Dr A. JAMIESON	(New Zealand)
	Mr A.I. KLYUCHAREV	(Russian Federation)
	Ms L. SOUSSI	(Tunisia)
	Mr L. SUN	(China)
Dr K.-J. WEE	(Korea (Rep. of))	

## STUDY GROUP 6

(BROADCASTING SERVICE)<sup>1</sup>

*Scope:*

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

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

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

<i>Chairman:</i>	Mr C. DOSCH	(Germany)
<i>Vice-Chairmen:</i>	Mr A.O. BOLARINWA	(Nigeria)
	Ms C. DILAPI	(United States)
	Prof. O.V. GOFAÏZEN	(Ukraine)
	Ms K.-M. KIM	(Korea (Rep. of))
	Mr Y. NISHIDA	(Japan)
	Mr R.R. PRASAD	(India)
	Dr G. ROSSI	(Vatican)
	Mr F. ZOU	(China)

## STUDY GROUP 7

### (SCIENCE SERVICES)

*Scope:*

- 1** Systems for space operation, space research, Earth exploration and meteorology, including the related use of links in the inter-satellite service.
- 2** Systems for remote sensing, including passive and active sensing systems, operating on both ground-based and space-based platforms.
- 3** Radio astronomy and radar astronomy.
- 4** Dissemination, reception and coordination of standard-frequency and time-signal services, including the application of satellite techniques, on a worldwide basis.

<i>Chairman:</i>	Mr V. MEENS	(France)
<i>Vice-Chairmen:</i>	Dr H. CHUNG	(Korea (Rep. of))
	Ms. S.Y. LYUBCHENKO	(Russian Federation)
	Mr J.E. ZUZEK	(United States)

## Annex 2

### CCV

#### (COORDINATION COMMITTEE FOR VOCABULARY)

*Scope:*

Coordination and approval in close collaboration with the Radiocommunication Study Groups, the General Secretariat (Conferences and Publications Department) and other interested organizations (mainly the International Electrotechnical Commission (IEC)), concerning:

- vocabulary, including abbreviations and initials;
- related subjects (quantities and units, graphical and letter symbols).

<i>Chairman:</i>	Mr N. KISRAWI	(Syrian Arab Republic)
<i>Vice-Chairmen:</i>	Prof. L. BARCLAY	(United Kingdom)
	Mr J.-P. HUYNH	(France)
	Mr H. LEBBADI	(Morocco)
	Mr C. MENÉNDEZ ARGÜELLES	(Spain)
	Mr A.P. PAVLYUK	(Russian Federation)
	Mr F. XIE	(China)

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## RESOLUTION ITU-R 5-5

### Work programme and Questions of Radiocommunication Study Groups

(1993-1995-1997-2000-2003-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) those parts of Resolution ITU-R 1 concerning the Questions to be studied by the Radiocommunication Study Groups;
- b) Resolution 82 (Minneapolis, 1998) of the Plenipotentiary Conference relating to the alternative procedure for the approval of ITU-R Questions and Recommendations, and Resolution ITU-R 45;
- c) that for efficient use of available resources, it is necessary for the Radiocommunication Study Groups to focus on core issues and not undertake studies on issues not within the mandate of ITU-R;
- d) that the amount of work performed by the Bureau depends on the number of contributions made in response to the Questions assigned to the Study Groups;
- e) that it is incumbent upon the Study Groups to conduct continual reviews of their assigned Questions and to replace old Questions (eight years old) by new Questions with new work plans;
- f) that the duties of the Study Groups in fulfilling the purpose of the Union are described in various provisions of the Constitution and Convention of the ITU,

*resolves*

**1** that the categories used to identify the priority and urgency of Questions to be studied should be:

**C:** Conference-oriented Questions associated with work related to specific preparations for, and decisions of, world and regional radiocommunication conferences:

C1: very urgent and priority studies, required for the next World Radiocommunication Conference;

C2: urgent studies, expected to be required for other radiocommunication conferences;

**S:** Questions which are intended to respond to:

- matters referred to the Radiocommunication Assembly by the Plenipotentiary Conference, any other conference, the Council, the Radio Regulations Board;
- advances in radiocommunication technology or spectrum management;
- changes in radio usage or operation:

S1: urgent studies which are intended to be completed within two years;

S2: important studies, necessary for the development of radiocommunications;

S3: required studies, expected to facilitate the development of radiocommunications;



If necessary, following a world or regional radiocommunication conference, the Director of the Radiocommunication Bureau, in consultation with the Chairmen of the Study Groups concerned, may assign appropriate categories to Questions which are related to the decisions of the conference or to the agendas of future world or regional radiocommunication conferences.

**2** that Questions identified as suitable for approval by the alternative procedure according to Resolution ITU-R 45 should be within the categories S1, 2 or 3; such Questions shall be identified as “/AP”;

**3** that, as early as possible in the study period, the Study Groups shall identify which of their Questions, if any, are suitable for approval by the alternative procedure according to Resolution ITU-R 45. Identification of Questions using this procedure is subject to being approved, without opposition, by correspondence.

This approval procedure for the identification of Questions should not delay the starting of the process for the approval of Recommendations under the alternative procedure in accordance with Resolution ITU-R 45;

**4** that the work programme for the next study period shall include the Questions listed in Annexes 1 to 6 with Categories C and S. These Questions shall be referred to the appropriate Study Groups. The texts of the Questions listed in Annexes 1 to 6 are to be found in Document 1 of the series of documents for the next study period of the appropriate Study Group taking into account *considering e*);

**5** that the work programme shall also include studies, within the scope of the Study Group, on matters relevant to agenda items of WRCs or RRCs, or to WRC Resolutions;

**6** that Conference-oriented Questions for study by the Study Groups shall:

- address topics seeking a Recommendation or a report to a conference;
- address a single specific issue;
- include a specified target date for the output;

**7** that each Question shall:

- indicate in a concise form the reason for the study;
- specify the scope of the study as precisely as possible;
- indicate the form in which the response should be prepared (e.g. as a Recommendation or other text, etc.) and, when possible, an outline of the contents of the expected response;
- specify the date when a complete or partial response is needed or the time period for the study, together with the milestones for the progress of the study;
- be modified to take account of partial answers;
- identify relevant Study Groups working in closely related areas, to which the text of the Question should be sent for consideration;

**8** that Study Groups shall consider all their Questions and make proposals to each Assembly:

- so as to bring them into conformity with *further resolves* 2 and 3;
- for the identification and categorization of Questions;
- for the deletion of Questions, where the study has been completed, where no contributions are expected within the next study period, or, in conformance with Resolution ITU-R 1, § 1.7, where no contributions have been made; such Questions shall be identified as category D;

**9** that each Study Group shall report to each Radiocommunication Assembly the progress that has been made in respect of each Question allocated to it with categories C1, C2 or S1;

**10** that, as a part of the work programme, a Study Group may also undertake studies, within the scope of its mandate, for the revision of an existing Recommendation or on a topic for which a new Question would normally be required. Where such study is expected to continue beyond the date of the next Radiocommunication Assembly, an appropriate Question should be drafted for approval by the Assembly,

*further resolves*

**1** that the Study Groups, when reviewing Questions assigned to them in accordance with Resolution ITU-R 4 and this Resolution, should reach unanimous conclusions, and should use the following guidelines:

**a) Questions which are within the mandate of the ITU-R:**

this guideline ensures that Questions and their associated studies are related to the conduct of radiocommunication matters, i.e., per ITU Convention, Article 11, Nos. 150-154 and 159, “a) use of the radio-frequency spectrum in terrestrial and space radiocommunication and of the geostationary-satellite and other satellite orbits; b) characteristics and performance of radio systems; c) operation of radio stations; and d) radiocommunication aspects of distress and safety matters and ITU Convention, Article 11 No. 159”. However new or revised Questions, when adopted, shall not include any reference to spectrum matters covering proposals on allocation unless requested under a Radiocommunication Assembly agenda item relating to the Question, or in a WRC Resolution seeking studies by ITU-R;

**b) Questions that relate to work being conducted by other international entities:**

if such work is being conducted elsewhere, the Study Group should liaise with such other entities, in accordance with Resolution ITU-R 1, § 5.4, and Resolution ITU-R 9 to determine the most appropriate way to conduct the studies, with a view to taking advantage of external expertise;

**2** that the Study Groups will evaluate draft new Questions proposed for adoption against the same guidelines set forth in *further resolves* 1 and will include such evaluation when submitted to Administrations for approval according to Resolution ITU-R 1;

**3** that the Study Groups will grant a high priority for the continuation of their work to the Questions meeting guidelines defined in *further resolves* 1, with an intent to manage as efficiently as possible the scarce resources of the ITU, taking into account the need to give appropriate priority to topics addressed to them by relevant ITU bodies, such as PPs, WRCs, and the RRB,

*invites*

**1** administrations to use the guidelines indicated in *further resolves* 1, above, in their determination of whether or not a Question is appropriate for approval.

**Annex 1****QUESTIONS ASSIGNED BY THE RADIOCOMMUNICATION ASSEMBLY  
TO STUDY GROUP 1****Spectrum management**

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>66/1</u></a>	Methods and algorithms for frequency planning	S3
<a href="#"><u>202-2/1</u></a>	Identification and measurement of various interference sources to analogue and digital radiocommunications systems (according to their originating mechanism and interference effect)	S2
<a href="#"><u>205-1/1</u></a>	Long-term strategies for spectrum utilization	S2
<a href="#"><u>206/1</u></a>	Strategies for economic approaches to national spectrum management and their financing	S2
<a href="#"><u>207/1</u></a>	Assessment, for spectrum planning and strategic development, of the benefits arising from the use of the radio spectrum	S2
<a href="#"><u>208/1</u></a>	Alternative methods of national spectrum management	S2
<a href="#"><u>209-1/1</u></a>	Parameters of radio systems and equipment required for spectrum management and the efficient use of the radio spectrum	S2
<a href="#"><u>210-2/1</u></a>	Wireless power transmission	S3
<a href="#"><u>211/1</u></a>	Unwanted emissions	C2
<a href="#"><u>212/1</u></a>	Development of method(s) for the determination of the coordination area around earth stations	C1
<a href="#"><u>213/1</u></a>	Technical and operating parameters and spectrum requirements for short-range devices	S2
<a href="#"><u>214/1</u></a>	Monitoring of digital broadcasting signals	S2
<a href="#"><u>215/1</u></a>	Monitoring of the radio coverage of land mobile networks to verify compliance with a given license	S2
<a href="#"><u>216/1</u></a>	Spectrum redeployment as a method of national spectrum management	S2
<a href="#"><u>217/1</u></a>	Compatibility between short range devices operating within the band 59-64 GHz and industrial, scientific and medical (ISM) applications operating in the band 61-61.5 GHz	S2
<a href="#"><u>218-1/1</u></a>	Techniques for measurement of radiation from high data rate telecommunication systems using electricity power supply of telephone distribution wiring	S2
<a href="#"><u>219/1</u></a>	Remote access to radio monitoring equipment of other administrations	S2
<a href="#"><u>220-1/1</u></a>	Identification and characterization of various interference sources to analogue and digital radiocommunication systems (according to their originating mechanism and interference effect)	S2
<a href="#"><u>221-1/1</u></a>	Compatibility between radiocommunication systems and high data telecommunication systems using electricity power supply or telephone distributing wiring	S2
<a href="#"><u>222/1</u></a>	Definition of the spectral properties of transmitter emissions	S1

Question ITU-R	Title	Category
<a href="#"><u>223/1</u></a>	Guidance on the regulatory framework for national spectrum management	S2
<a href="#"><u>224/1</u></a>	Technical convergence with respect to terrestrial fixed, mobile, and broadcasting interactive multimedia applications and the associated regulatory environment	C1
<a href="#"><u>225/1</u></a>	Inspection of radio stations to verify compliance with licence parameters	S2
<a href="#"><u>226/1</u></a>	Spectrum management framework related to the introduction of ultra-wideband devices	S1
<a href="#"><u>227/1</u></a>	Compatibility between ultra-wideband devices and radiocommunication services	S1
<a href="#"><u>228/1</u></a>	Possibility and relevance of including in the Radio Regulations frequency bands above 3 000 GHz	C1
<a href="#"><u>229/1</u></a>	Improving the international spectrum regulatory framework	C1
<a href="#"><u>230/1</u></a>	Improved measurement methods for unwanted emissions of primary radars using magnetrons	S2
<a href="#"><u>231/1</u></a>	Measuring technique for measuring the noise floor in radio applications	S2
<a href="#"><u>232/1</u></a>	Methods and techniques used in space radio monitoring	S2
<a href="#"><u>233/1</u></a>	Measurement of spectrum occupancy	S2
<a href="#"><u>234/1</u></a>	Alternative techniques for radiolocation determination	S2

**Annex 2****QUESTIONS ASSIGNED BY THE RADIOCOMMUNICATION ASSEMBLY  
TO STUDY GROUP 3****Radiowave propagation**

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>201-3/3</u></a>	Radiometeorological data required for the planning of terrestrial and space communication systems and space research application	S2
<a href="#"><u>202-3/3</u></a>	Methods for predicting propagation over the surface of the Earth	S2
<a href="#"><u>203-3/3</u></a>	Propagation prediction methods for terrestrial broadcasting, fixed (broadband access) and mobile services at frequencies above 30 MHz	S1
<a href="#"><u>204-3/3</u></a>	Propagation data and prediction methods required for terrestrial line-of-sight systems	S2
<a href="#"><u>205-1/3</u></a>	Propagation data and prediction methods required for trans-horizon systems	S2
<a href="#"><u>206-3/3</u></a>	Propagation data and prediction methods for fixed and broadcasting-satellite services	S2
<a href="#"><u>207-3/3</u></a>	Propagation data and prediction methods for satellite mobile and radiodetermination services above about 0.1 GHz	S2
<a href="#"><u>208-3/3</u></a>	Propagation factors in frequency sharing issues affecting fixed-satellite services and terrestrial services	S2
<a href="#"><u>209/3</u></a>	Variability and risk parameters in system performance analysis	S2
<a href="#"><u>211-4/3</u></a>	Propagation data and propagation models for the design of short-range wireless communication and access systems and wireless local area networks (WLAN) in the frequency range 300 MHz to 100 GHz	S1
<a href="#"><u>212-1/3</u></a>	Ionospheric properties	S3
<a href="#"><u>213-1/3</u></a>	The short-term forecasting of operational parameters for ionospheric and trans-ionospheric radiocommunications	S3
<a href="#"><u>214-3/3</u></a>	Radio noise	S2
<a href="#"><u>218-3/3</u></a>	Ionospheric influences on space systems	S2
<a href="#"><u>221/3</u></a>	VHF and UHF propagation by way of sporadic E and other ionization	S3
<a href="#"><u>222-1/3</u></a>	Measurements and data banks of ionospheric parameters	S2
<a href="#"><u>225-5/3</u></a>	The prediction of propagation factors affecting systems at LF and MF including the use of digital modulation techniques	S1
<a href="#"><u>226-3/3</u></a>	Ionospheric and tropospheric characteristics along satellite-to-satellite paths	S2
<a href="#"><u>227-1/3</u></a>	HF channel simulation	S3
<a href="#"><u>228-1/3</u></a>	Propagation data required for the planning of space radiocommunication systems and space science service systems operating above 275 GHz	C1
<a href="#"><u>229/3</u></a>	Prediction of sky-wave propagation conditions, signal intensity, circuit performance and reliability at frequencies between about 1.6 and 30 MHz, in particular for systems using digital modulation techniques	S1

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>230/3</u></a>	Prediction methods and models applicable to power line telecommunications systems	S1
<a href="#"><u>231/3</u></a>	The effect of electromagnetic emissions from man-made sources on the performance of radiocommunication systems and networks	S2

**Annex 3****QUESTIONS ASSIGNED BY THE RADIOCOMMUNICATION ASSEMBLY  
TO STUDY GROUP 4\*****Satellite services**

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>42-1/4</u></a>	Characteristics of antennas at earth stations in the fixed-satellite service	S1
<a href="#"><u>46-3/4</u></a>	Preferred multiple-access characteristics in the fixed-satellite service	S2
<a href="#"><u>55-2/4</u></a>	Feeder links in the fixed-satellite service used for the connections to and from geostationary satellites in various mobile-satellite services	S2
<a href="#"><u>68-1/4</u></a>	Frequency sharing of the fixed-satellite service and the inter-satellite service with other space radio services under provisions of No. 9.21 of the Radio Regulations	S3
<a href="#"><u>70-1/4</u></a>	Protection of the geostationary-satellite orbit against unacceptable interference from transmitting earth stations in the fixed-satellite service at frequencies above 15 GHz	S3
<a href="#"><u>73-2/4</u></a>	Availability and interruptions to traffic on digital paths in the fixed-satellite service	S2
<a href="#"><u>75-3/4</u></a>	Performance objectives of international digital transmission links in the fixed-satellite service	S1
<a href="#"><u>81-1/4</u></a>	Frequency sharing among networks in the fixed-satellite service, the mobile-satellite service and those of satellites equipped to operate in more than one service in the 20-50 GHz band	S3
<a href="#"><u>203-1/4</u></a>	The impact of using small antennas on the efficient use of the geostationary-satellite orbit	S2
<a href="#"><u>205-1/4</u></a>	Frequency sharing between non-geostationary satellite feeder links in the fixed-satellite service used by the mobile-satellite service	S2
<a href="#"><u>206-3/4</u></a>	Sharing between non-geostationary satellite feeder links in the fixed-satellite service used by the mobile-satellite service and other space services, and networks of the fixed-satellite service using geostationary satellites	S2
<a href="#"><u>208/4</u></a>	Use of statistical and stochastic methods in evaluation of interference between satellite networks in the fixed-satellite service	S3
<a href="#"><u>209/4</u></a>	The use of frequency bands allocated to the fixed-satellite service for both the up and down links of geostationary-satellite systems	S1
<a href="#"><u>214/4</u></a>	Technical implications of steerable and reconfigurable satellite beams	S2
<a href="#"><u>218-1/4</u></a>	Compatibility between on-board processing satellites in the fixed-satellite service and terrestrial networks	S2
<a href="#"><u>223/4</u></a>	Interference criteria for short-term interference events into the fixed-satellite service networks	S1

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\* Refer to footnote for this Study Group in Resolution ITU-R 4-5.

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>231/4</u></a>	Sharing between networks of the fixed-satellite service using non-geostationary satellites and other networks of the fixed-satellite service	S2
<a href="#"><u>232/4</u></a>	Use of regenerative processing in fixed-satellite service allocations	S2
<a href="#"><u>233/4</u></a>	Dedicated user digital satellite communications systems and their associated architectures	S2
<a href="#"><u>235/4</u></a>	Use of operational facilities to meet power-flux-density limitation under Article 21 of the Radio Regulations	S2
<a href="#"><u>236/4</u></a>	Interference criteria and calculation methods for the fixed-satellite service	S2
<a href="#"><u>239/4</u></a>	Sharing criteria between systems utilizing inter-satellite links	S2
<a href="#"><u>240-1/4</u></a>	Technical criteria for frequency sharing between the fixed-satellite service using highly elliptical orbits and the fixed service as they affect the fixed-satellite service	S1
<a href="#"><u>244/4</u></a>	Sharing between feeder links of the mobile-satellite (non-geostationary) service in the band 5 091-5 250 MHz and the aeronautical radionavigation service in the band 5 000-5 250 MHz	C2
<a href="#"><u>245/4</u></a>	Out-of-band and spurious emission limits	S1
<a href="#"><u>246/4</u></a>	Sharing between the inter-satellite service, Earth-exploration satellite (passive) service and other services in frequency bands above 50 GHz	S2
<a href="#"><u>247/4</u></a>	Design objectives for radiation patterns applicable to non-geostationary-satellite orbit/mobile-satellite service feeder link earth stations operating in the 5/7 GHz band	S1
<a href="#"><u>248/4</u></a>	Frequency sharing between systems in the fixed-satellite service and wireless digital networks around 5 GHz	S1
<a href="#"><u>251-1/4</u></a>	Frequency sharing criteria between systems in the fixed-satellite service and systems in the fixed service using high-altitude platform stations	S1
<a href="#"><u>252/4</u></a>	Criteria for the protection of Appendix 30B Plan against interference from non-geostationary satellite orbit systems	S1
<a href="#"><u>254-1/4</u></a>	Sharing feasibility of earth stations on board vessels operating in the fixed-satellite service with stations in the fixed service in the band 5 925-6 425 MHz and other uplink frequency bands at 6 GHz and 14 GHz	S1
<a href="#"><u>256/4</u></a>	Criteria and methodologies for sharing between the fixed-satellite service and other services with allocations in the band 40.5-42.5 GHz	C2
<a href="#"><u>259/4</u></a>	Earth station off-axis e.i.r.p. density levels in the bands above 14.5 GHz allocated to the fixed-satellite service	S2
<a href="#"><u>263-1/4</u></a>	Performance objectives of digital links in the fixed-satellite service for transmission of Internet or higher layer Protocol packets	S1
<a href="#"><u>264/4</u></a>	Technical and operational characteristics of networks of the fixed-satellite service operating above 275 GHz	C2
<a href="#"><u>266/4</u></a>	Technical characteristics of high-density fixed-satellite service earth stations operating with geostationary satellite orbit fixed-satellite service networks in the 20/30 GHz bands	C1
<a href="#"><u>267/4</u></a>	Technical and operational considerations relating to the advance publication, coordination and notification of fixed-satellite networks	C2



<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>268/4</u></a>	Development of methodologies for the assessment of satellite unwanted emission levels before launch	S2
<a href="#"><u>269/4</u></a>	Spectrum requirements and technical and operational characteristics of user terminals (VSAT) for global broadband satellite systems	S1
<a href="#"><u>270-1/4</u></a>	Fixed-satellite service systems using very wideband spreading signals	S1
<a href="#"><u>271/4</u></a>	Interference between satellite news gathering (SNG) carriers by unintentional access	S1
<a href="#"><u>272/4</u></a>	Frequency sharing between the FSS and the space research service in the 37.5-38 GHz and 40-40.5 GHz bands	S2

**Annex 4****QUESTIONS ASSIGNED BY THE RADIOCOMMUNICATION ASSEMBLY  
TO STUDY GROUP 5****Terrestrial services**

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
1-4/8	Interference protection ratios and minimum field strengths required in the land mobile services	S2
7-6/8	Characteristics of equipment for the land mobile service between 25 and 6 000 MHz	S2
<u><a href="#">35-1/8</a></u>	Efficient use of the radio spectrum by radar stations in the radiodetermination service	S2
37-5/8	Digital land mobile systems for dispatch traffic	S2
48-6/8	Techniques and frequency usage in the amateur service and amateur-satellite service	S2
<u><a href="#">51-3/8</a></u>	Automatic determination of location and guidance in the land mobile service	
<u><a href="#">62-2/8</a></u>	Interference to the aeronautical mobile and aeronautical radionavigation services	S2
77-6/8	Consideration of the needs of developing countries in the development and implementation of mobile radiocommunication technology	S2
<u><a href="#">83-5/8</a></u>	Efficient use of the radio spectrum and frequency sharing within the mobile-satellite service	S1
<u><a href="#">84-4/8</a></u>	Use of non-geostationary-satellite orbits in mobile-satellite services	S2
<u><a href="#">85-1/8</a></u>	Availability of circuits in mobile-satellite services	S2
<u><a href="#">87-4/8</a></u>	Transmission characteristics for a mobile-satellite communication system	S2
<u><a href="#">88-1/8</a></u>	Propagation and mobile earth station antenna characteristics for mobile-satellite services	S3
<u><a href="#">90/8</a></u>	Technical and operating characteristics of systems providing radiocommunication using satellite techniques for distress and safety operations	S2
<u><a href="#">91-1/8</a></u>	Technical and operating characteristics of the radiodetermination-satellite service	S2
<u><a href="#">93-2/8</a></u>	Automation of MF, HF and VHF maritime mobile communications	S2
<u><a href="#">96-2/8</a></u>	Improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service with a view to enhancing maritime safety and port security	S2
<u><a href="#">98/8</a></u>	Transmission of digital data for the updating of electronic chart display systems	S2
99-1/8	Interference due to intermodulation products in the land mobile services between 25 and 6 000 MHz	S2
101-4/8	Quality of service requirements in the land mobile service	S2
106-1/8	Criteria for sharing between the broadcasting-satellite service (sound) and complementary terrestrial broadcasting and the mobile and amateur services within the range 1-3 GHz	C2
<u><a href="#">107-1/8</a></u>	Cellular land mobile telecommunication systems	

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>109-1/8</u></a>	Global Maritime Distress and Safety System requirements for mobile-satellite systems operating in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz	S1
<a href="#"><u>110-1/8</u></a>	Interference to the aeronautical mobile-satellite (R) service	S2
<a href="#"><u>112/8</u></a>	Performance objectives for digital mobile-satellite services	S3
<a href="#"><u>114/8</u></a>	Technical and operational characteristics of cordless telephones and cordless telecommunication systems	
<a href="#"><u>201-1/8</u></a>	Frequency sharing between mobile-satellite services and other services	C2
<a href="#"><u>202-3/8</u></a>	Unwanted emissions of primary radar systems	S2
205-4/8	Intelligent transportation systems	S2
208-1/8	Evolution of land mobile systems towards IMT-2000 and systems beyond IMT-2000	S2
209-3/8	Contributions of the mobile and amateur services and associated satellite services to the improvement of disaster communications	S2
<a href="#"><u>210-1/8</u></a>	Technical characteristics for mobile Earth stations operating with global non-geostationary-satellite systems in the mobile-satellite service in the band 1-3 GHz	S1
<a href="#"><u>211-2/8</u></a>	Interference criteria and calculation methods for the mobile-satellite service	S1
212-3/8	Nomadic wireless access systems including radio local area networks for mobile applications	S2
<a href="#"><u>213/8</u></a>	Transmission of data messages on shared private land mobile radio channels	
<a href="#"><u>214/8</u></a>	The re-planning of bands in the land mobile service	
215-2/8	Frequency bands, technical characteristics, and operational requirements for fixed wireless access systems in the land mobile service	S2
<a href="#"><u>216-2/8</u></a>	Compatibility of radionavigation, earth exploration-satellite (active), space research (active), mobile, and radiolocation services operating in the band 5 350-5 650 MHz and compatibility between the radionavigation and radiolocation services in the band 2 900-3 100 MHz	C2
217-2/8	Interference to the radionavigation-satellite service in the ICAO global navigation satellite system	S2
<a href="#"><u>218/8</u></a>	Essential technical requirements of mobile earth stations for global and regional geostationary mobile-satellite service systems in the band 1-3 GHz	S1
<a href="#"><u>221/8</u></a>	Use of the frequencies between 2.8-22 MHz by the aeronautical mobile (R) service for data transmissions using class of emission J2DEN	S1
223-2/8	Internet protocol applications over mobile systems	S2
224-2/8	Adaptive antennas	S2
<a href="#"><u>225/8</u></a>	Interference to the aeronautical and maritime mobile services in the HF bands by unauthorized stations	S1
<a href="#"><u>226/8</u></a>	Characteristics of and protection criteria for radars operating in the radiodetermination service	S1
<a href="#"><u>227/8</u></a>	Technical and operational characteristics of emergency communications in the mobile-satellite service	S1
<a href="#"><u>228-1/8</u></a>	Future submission of satellite radio transmission technologies for International Mobile Telecommunications-2000	S1

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>229-1/8</u></a>	Future development of IMT-2000 and systems beyond IMT-2000	S2
230-2/8	Software defined radios	S2
<a href="#"><u>231/8</u></a>	Operation of wideband aeronautical telemetry in bands above 3 GHz	S2
<a href="#"><u>232/8</u></a>	Universal shipborne automatic identification system	S2
<a href="#"><u>233/8</u></a>	Technical and operational characteristics for packet network transmission in mobile-satellite services	S1
<a href="#"><u>234/8</u></a>	Compatibility of radionavigation and radiolocation services operating in the bands 9 000-9 200 MHz and 9 300-9 500 MHz	S2
<a href="#"><u>235/8</u></a>	Protection criteria for aeronautical and maritime systems	S2
236-2/8	Characteristics and operational requirements of radionavigation-satellite service (space-to-Earth, space-to-space, Earth-to-space) systems	S2
<a href="#"><u>237/8</u></a>	Characteristics and protection criteria of radars operating in the radiodetermination service in the VHF frequency band	S2
238-1/8	Broadband wireless access systems for the mobile service	C2
239-1/8	Methodology for the coordination of radionavigation-satellite service systems and networks	S1
<a href="#"><u>240/8</u></a>	Technical and operational characteristics and spectrum requirements of high-frequency surface wave radar systems operating in the frequency range 3 to 50 MHz	S2
241-1/8	Cognitive radio systems in the mobile service	S2
	Draft new Question ITU-R AERO/8 - Support of the modernization of civil aviation telecommunication systems and the extension of telecommunication systems to remote and developing regions with current and planned satellite networks	S2
<a href="#"><u>102-4/9</u></a>	Availability of digital fixed wireless systems	S1
<a href="#"><u>107-2/9</u></a>	Characteristics of fixed wireless systems operating in frequency bands above about 17 GHz	S2
<a href="#"><u>108-2/9</u></a>	Radio-frequency channel arrangements for fixed wireless systems operating in frequency bands above about 17 GHz	S2
<a href="#"><u>110-1/9</u></a>	Antenna radiation diagrams of fixed wireless stations for use in sharing studies	S2
<a href="#"><u>111-3/9</u></a>	Sharing criteria between the broadcasting-satellite service (sound and television) and the fixed service	S2
<a href="#"><u>113-2/9</u></a>	Frequency sharing and compatibility between systems in the fixed service and systems of the Earth exploration-satellite service and the space research service	S2
<a href="#"><u>118-4/9</u></a>	Sharing criteria between the mobile-satellite service and the fixed service	C1
<a href="#"><u>122-4/9</u></a>	Effects of propagation on the design and operation of fixed wireless systems	S2
<a href="#"><u>125-7/9</u></a>	Point-to-multipoint fixed wireless systems used in access or back-haul networks	S2
<a href="#"><u>127-4/9</u></a>	Maximum allowable performance and availability degradations of fixed wireless systems due to various sources of interference	S2
<a href="#"><u>133-1/9</u></a>	Sharing criteria between the fixed and land mobile services in the frequency bands above about 0.5 GHz	S2

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>136-2/9</u></a>	Radio-frequency channel arrangements for digital fixed wireless systems operating in frequency bands below about 17 GHz	S2
<a href="#"><u>145-2/9</u></a>	Characteristics required for high-speed data transmission over HF radio circuits	S2
<a href="#"><u>147-2/9</u></a>	Automatically controlled radio systems and networks in the HF fixed service	S2
<a href="#"><u>158-1/9</u></a>	Packet data transmission protocols for systems operating below about 30 MHz	S3
<a href="#"><u>161-4/9</u></a>	Performance limits for bringing into service and maintenance of digital fixed wireless systems	S2
<a href="#"><u>202-1/9</u></a>	Reference radiation patterns of omnidirectional and sectoral antennas in point-to-multipoint systems for use in sharing studies	S2
<a href="#"><u>205-1/9</u></a>	The use of frequency adaptive HF systems	C1
<a href="#"><u>206-2/9</u></a>	Sharing criteria for systems in the fixed service with systems in the fixed-satellite service involving a large number of non-geostationary satellites for bands in the 10-30 GHz range	S1
<a href="#"><u>209-1/9</u></a>	Technical criteria for frequency sharing between the fixed service and the fixed-satellite service using highly elliptical orbits as they affects the fixed service	S1
<a href="#"><u>210-2/9</u></a>	Error performance objectives for digital fixed wireless sections	S2
<a href="#"><u>212-2/9</u></a>	System characteristics and frequency bands for fixed service systems utilizing high altitude platform stations	C1
<a href="#"><u>213-1/9</u></a>	Simulation of HF transmission through an ionospheric channel	S3
<a href="#"><u>216/9</u></a>	System characteristics and sharing criteria for the fixed service operating in frequency bands below 1 GHz	S2
<a href="#"><u>217-1/9</u></a>	Feasibility of the fixed service sharing with the fixed-satellite service operating at the same frequencies in the range 30-52 GHz	S1
<a href="#"><u>218-1/9</u></a>	Frequency sharing criteria for systems in the fixed service using high altitude platform stations and systems in the fixed-satellite service	S1
<a href="#"><u>219/9</u></a>	Determination of coordination area related to the fixed service for earth stations operating with non-geostationary satellites in the fixed-satellite service	S1
<a href="#"><u>225/9</u></a>	Improvements to Recommendation ITU-R F.758	S1
<a href="#"><u>226-1/9</u></a>	Sharing feasibility of stations in the fixed service with earth stations on board vessels operating in the fixed-satellite service in the band 5 925-6 425 MHz and other uplink frequency bands at 6 GHz and 14 GHz	S1
<a href="#"><u>227/9</u></a>	Sharing criteria for point-to-multipoint systems used for fixed wireless access in the fixed service using the same frequency band with very small aperture terminal systems in the fixed-satellite service in the band 3 400-3 700 MHz	S2
<a href="#"><u>228-1/9</u></a>	Performance and availability objectives for the access part of the network formed wholly or partly by fixed wireless systems	S2
<a href="#"><u>229-1/9</u></a>	Frequency arrangements based on frequency blocks for systems in the fixed service	S2
<a href="#"><u>232/9</u></a>	Assessment of sharing and mitigation options to facilitate the use of the band 3 400-3 700 MHz by certain fixed wireless access and radiolocation systems	S2
<a href="#"><u>233/9</u></a>	Criteria for sharing between stations in the fixed service and stations in the aeronautical mobile service in bands between about 37 GHz and 50 GHz	S2

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>234/9</u></a>	Technical and operational characteristics of fixed wireless systems operating in frequency bands allocated to the fixed service above 57 GHz	C2
<a href="#"><u>236/9</u></a>	Fixed wireless systems providing broadband wireless access	S1
<a href="#"><u>237/9</u></a>	Fixed service applications using frequency bands above 3 000 GHz	C2
<a href="#"><u>238/9</u></a>	Technical and operational characteristics of systems in the fixed service operating in the MF/HF band used for disaster mitigation and relief	S1
<a href="#"><u>239/9</u></a>	Technical and operational characteristics of disaster relief wireless communication systems in the fixed service	S1
<a href="#"><u>240/9</u></a>	Error performance and availability objectives for digital HF fixed systems	S2
<a href="#"><u>241/9</u></a>	Technical characteristics and channelling requirements for adaptive HF systems	S2

**Annex 5****QUESTIONS ASSIGNED BY THE RADIOCOMMUNICATION ASSEMBLY  
TO STUDY GROUP 6\*****Broadcasting service**

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>1/6</u></a>	Digital image formats for programme production and exchange for digital television broadcasting	S1
<a href="#"><u>2/6</u></a>	Audio metering characteristics suitable for use in digital sound production	S1/AP
<a href="#"><u>3/6</u></a>	Digital broadcasting of multiple services and programmes in the broadcasting-satellite service	S2
<a href="#"><u>4-2/6</u></a>	Planning parameters for digital television broadcasting using terrestrial channels	S2
<a href="#"><u>5-1/6</u></a>	Serial data transport mechanism for packetized data within a television production studio based on, and compatible with, Recommendations ITU-R BT.656 and ITU-R BT.1120	S3/AP
<a href="#"><u>6-1/6</u></a>	Standards for digital high-definition television coding	S1
<a href="#"><u>7/6</u></a>	Interface to webcasting and its supporting data services	S2/AP
<a href="#"><u>8/6</u></a>	Methods for the assessment of automated audio metadata extraction systems	S2/AP
<a href="#"><u>9/6</u></a>	Universal transmitters and retransmitters for both analogue and digital terrestrial TV broadcasting	S2
<a href="#"><u>12-1/6</u></a>	Generic bit-rate reduction coding of digital TV signals (SDTV, EDTV and HDTV) for production, for contribution, for primary and secondary distribution, for emission and for related applications	S1
<a href="#"><u>13/6</u></a>	Multimedia evolution and common content format	S1
<a href="#"><u>14/6</u></a>	Digital and analogue-digital TV receivers and receiving antenna characteristics required for the terrestrial TV broadcasting frequency planning	S2
<a href="#"><u>15-2/6</u></a>	Large screen digital imagery (LSDI)	S2
<a href="#"><u>16-1/6</u></a>	Digital interactive broadcasting systems	S1
<a href="#"><u>17/6</u></a>	Data broadcasting in the digital broadcasting environment	S1
<a href="#"><u>19/6</u></a>	Low bit-rate audio coding standards	S1
<a href="#"><u>20/6</u></a>	Digital HDTV studio interfaces	S1/AP
<a href="#"><u>21/6</u></a>	Characteristics of receiving systems in the broadcasting-satellite service (sound and television)	S2
<a href="#"><u>22-1/6</u></a>	Satellite orbits and space station technology for the broadcasting-satellite service (sound and television)	S2
<a href="#"><u>23/6</u></a>	Characteristics of systems in the broadcasting-satellite service (sound) for individual reception by means of portable and vehicular receivers	C2

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\* Refer to footnote for this Study Group in Resolution 4-5.

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>26-1/6</u></a>	Interactive satellite broadcasting systems (television, sound and data)	S1
<a href="#"><u>27/6</u></a>	Receivers for sound broadcasting below 30 MHz	S2
<a href="#"><u>29/6</u></a>	Transmission of supplementary information with a single transmitter in frequency-modulation sound broadcasting	S2
<a href="#"><u>30/6</u></a>	Transmitting and receiving antennas at VHF and UHF	S2
<a href="#"><u>31-1/6</u></a>	Digital terrestrial television broadcasting	S1
<a href="#"><u>32/6</u></a>	Protection requirements of broadcasting systems against interference from radiation caused by wired telecommunication systems, from emissions of industrial, scientific and medical equipment, and from emissions of short-range devices	S1
<a href="#"><u>33/6</u></a>	Standards for digital audio coding and interfaces	S2
<a href="#"><u>34-1/6</u></a>	File formats for the exchange of audio, video, data and metadata materials in the professional television and large screen digital imagery (LSDI) environments	S2
<a href="#"><u>36/6</u></a>	Standards for the high-definition television studio and for international programme exchange	S3
<a href="#"><u>37/6</u></a>	System parameters for multichannel sound systems	S3
<a href="#"><u>39/6</u></a>	Standards for digital audio techniques	S2
<a href="#"><u>40/6</u></a>	Extremely high-resolution imagery	S1
<a href="#"><u>41/6</u></a>	Auxiliary signals for digital television codecs to assist editing and cascading	S3/AP
<a href="#"><u>42/6</u></a>	Interfaces for digital video signals	S2
<a href="#"><u>43/6</u></a>	Digital coding for multi-programme television in contribution and distribution circuits	S2/AP
<a href="#"><u>44-3/6</u></a>	Objective picture quality parameters and associated measurement and monitoring methods for digital television images	S3
<a href="#"><u>45-1/6</u></a>	Broadcasting of multimedia and data applications for mobile reception	S1
<a href="#"><u>46-1/6</u></a>	User requirements for metadata related to digital production, post production, recording and archiving of sound and television programmes in broadcasting	S1
<a href="#"><u>47/6</u></a>	Prevention of photosensitive epileptic seizures caused by television	S1
<a href="#"><u>48/6</u></a>	In-service monitoring of perceived audio quality for distribution and broadcasting networks	S1/AP
<a href="#"><u>49-1/6</u></a>	Conditional-access broadcasting systems	S2
<a href="#"><u>51/6</u></a>	Sky-wave reception in LF, MF and HF broadcasting	S1
<a href="#"><u>52-1/6</u></a>	Coverage in LF, MF and HF broadcasting	S1
<a href="#"><u>53/6</u></a>	Standards for the transmission of several sound signals in one television channel in terrestrial or satellite broadcasting including high-definition and enhanced definition television systems	S2
<a href="#"><u>55/6</u></a>	Subjective assessment of sound quality in broadcasting using digital techniques	S2
<a href="#"><u>56-1/6</u></a>	Characteristics of terrestrial digital sound broadcasting systems for reception by vehicular, portable and fixed receivers	S1



<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>57/6</u></a>	Frequency sharing issues related to the introduction of the broadcasting-satellite service (sound) in the frequency range 1-3 GHz	C2
<a href="#"><u>58/6</u></a>	Recording of sound programmes for international exchange	S2/AP
<a href="#"><u>59/6</u></a>	Archival of sound programmes in broadcasting	S2/AP
<a href="#"><u>60/6</u></a>	Digital broadcasting at frequencies below 30 MHz	S2
<a href="#"><u>61/6</u></a>	Spectrum management issues related to the introduction of the broadcasting-satellite service (sound) in the frequency range 1-3 GHz	C2
<a href="#"><u>62/6</u></a>	Subjective assessment of small, medium and large impairments in sound quality	S2/AP
<a href="#"><u>63/6</u></a>	Calibration of the listening level for headphones in subjective listening tests	S1/AP
<a href="#"><u>64-1/6</u></a>	Planning parameters for digital broadcasting at frequencies below 30 MHz	S1
<a href="#"><u>65/6</u></a>	Spectrum requirements for sound broadcasting	S1
<a href="#"><u>66/6</u></a>	Audio coding schemes for sound broadcast programme inserts	S1
<a href="#"><u>67/6</u></a>	Methodologies for subjective assessment of audio and video quality	S2/AP
<a href="#"><u>69-1/6</u></a>	Conditions for a satisfactory television service in the presence of reflected signals	S1
<a href="#"><u>70/6</u></a>	Frequency sharing for the feeder links to a broadcasting satellite (sound and television)	C2
<a href="#"><u>71/6</u></a>	Sharing studies between high-definition television in the broadcasting-satellite service and other services	C2
<a href="#"><u>72/6</u></a>	Digital techniques in the broadcasting-satellite service (sound and television)	S2
<a href="#"><u>73-1/6</u></a>	Receiving earth station antennas for the broadcasting-satellite service	S1
<a href="#"><u>74/6</u></a>	Radiation of unwanted emissions from space stations in the broadcasting-satellite service (sound and television)	C2
<a href="#"><u>75/6</u></a>	Telemetry, tracking and command signals and test signals for maintenance and testing of the radio-frequency characteristics of broadcasting-satellite	S2
<a href="#"><u>76/6</u></a>	Satellite broadcasting of high-definition television	C2
<a href="#"><u>77-1/6</u></a>	Methods and practices for digital recording of television programme material intended for international exchange	S2/AP
<a href="#"><u>78-1/6</u></a>	Digital recording of high-definition television programmes for international exchange	S3/AP
<a href="#"><u>79/6</u></a>	The harmonization of standards between broadcast and non-broadcast applications of television	S1
<a href="#"><u>80/6</u></a>	Coding for the broadcasting of digitally-encoded TV signals in terrestrial narrow-band channels	S1
<a href="#"><u>81-1/6</u></a>	Subjective assessments of the quality of television pictures including alphanumeric and graphic pictures	S3/AP
<a href="#"><u>82/6</u></a>	Technical characteristics of feeder links to broadcasting satellites operating in the 12, 17 and 21 GHz bands	C2
<a href="#"><u>83/6</u></a>	Characteristics of systems in the broadcasting-satellite service (sound and television) for reception by transportable and fixed receivers	S2

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>84/6</u></a>	Protection ratios for interference studies and system planning in the broadcasting-satellite service (sound and television)	C2
<a href="#"><u>85/6</u></a>	Simultaneous transmissions of TV programmes on BSS and FSS services from a multiservice space station	S2
<a href="#"><u>86/6</u></a>	Overall coordination of the technical characteristics and associated test methods for the separate parts of the television signal chain	S2/AP
<a href="#"><u>87/6</u></a>	Acquisition and recovery times in digital television encoding	S2/AP
<a href="#"><u>88/6</u></a>	Subjective assessment of stereoscopic television pictures	S3/AP
<a href="#"><u>89-1/6</u></a>	User requirements for electronic news gathering	S1
<a href="#"><u>90/6</u></a>	Television recording format for long-term programme archives	S3/AP
<a href="#"><u>93/6</u></a>	Frequency requirements for electronic news gathering	S2
<a href="#"><u>94/6</u></a>	Access to orbit and spectrum resources for the broadcasting-satellite service and the fixed-satellite service direct-to-home applications	C2
<a href="#"><u>95/6</u></a>	Use of computer technology in television broadcasting applications	S2
<a href="#"><u>96-1/6</u></a>	User requirements in the area of media asset management and transfer protocols for television programme production, recording and archiving	S3/AP
<a href="#"><u>99/6</u></a>	Relationship between quality, quality evaluation methodology, and type of application, in a multimedia environment	S2/AP
<a href="#"><u>100/6</u></a>	Television and multimedia images quality levels	S1
<a href="#"><u>101/6</u></a>	Broadcasting of copy protection signalling for television	S1
<a href="#"><u>102/6</u></a>	Methodologies for subjective assessment of audio and video quality	S1/AP
<a href="#"><u>103/6</u></a>	Reference signals for the component digital studio	S1/AP
<a href="#"><u>104/6</u></a>	Sharing criteria for BSS networks in the 17.3-17.8 GHz band in Region 2, and in the 21.4-22 GHz band in Regions 1 and 3, and their associated feeder links	S1
<a href="#"><u>105/6</u></a>	Spectrum requirements for television broadcasting	S1
<a href="#"><u>106-1/6</u></a>	Recording formats for different media to be used for the international exchange of recordings for high-definition television programme evaluation	S2/AP
<a href="#"><u>108/6</u></a>	Digital sound broadcasting in band 7 (HF) in the Tropical Zone	S1
<a href="#"><u>109/6</u></a>	In-service monitoring of perceived audiovisual quality for broadcasting and distribution networks	S1
<a href="#"><u>110/6</u></a>	Processability margins required for contribution programme material in television production	S2
<a href="#"><u>111-1/6</u></a>	Technical methods for the protection of the privacy of end-users in interactive broadcasting systems (television, sound and data)	S1
<a href="#"><u>112-1/6</u></a>	Guidelines on functionalities of facilities based on the use of digital servers in broadcast programme recording, archiving and playout	S2
<a href="#"><u>113/6</u></a>	Delivery of interactive information to and from large screen digital imagery venues through broadcasting systems	S2
<a href="#"><u>114/6</u></a>	Characteristics of television receivers and receiving antennas essential for frequency planning	S2
<a href="#"><u>115/6</u></a>	Registration methods for television and multimedia images	S1

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>116/6</u></a>	Parameters and tolerance limits for the technical quality of audio signals intended for international exchange	S1
<a href="#"><u>118-1/6</u></a>	Broadcasting means for public warning, disaster mitigation and relief	S1
<a href="#"><u>119/6</u></a>	Use of lossless/perceptually lossless bit-rate reduction to transport HDTV signals over HD-SDI	S1
<a href="#"><u>120/6</u></a>	Digital sound broadcasting in Region 2	S1
<a href="#"><u>121/6</u></a>	Spectrum usage and user requirements for wireless microphones	S1
<a href="#"><u>122/6</u></a>	Objective perceptual audio quality measurement methods	S1/AP
<a href="#"><u>123/6</u></a>	Approaches in programme production intended to improve the perceived image quality of broadcast digital SDTV and HDTV programmes	S1/AP
<a href="#"><u>124/6</u></a>	Measurement methods for the verification and validation of digital television and sound broadcasting planning procedures	S1
<a href="#"><u>125/6</u></a>	Stereoscopic television	S1
<a href="#"><u>126/6</u></a>	Recommended operating practices to tailor television programme material to broadcasting applications at various image quality levels and sizings	S2
<a href="#"><u>127/6</u></a>	Mitigation techniques required for the use of digital modulation in the "26 MHz" broadcasting band for local coverage	S2

**Annex 6****QUESTIONS ASSIGNED BY THE RADIOCOMMUNICATION ASSEMBLY  
TO STUDY GROUP 7****Science services**

<b>Question ITU-R</b>	<b>Title</b>	<b>Category</b>
<a href="#"><u>110-2/7</u></a>	Time codes	S2
<a href="#"><u>111-1/7</u></a>	Signal delays in antennas and other circuits and their calibration for high-accuracy time transfer	S2
<a href="#"><u>118-2/7</u></a>	Factors which affect frequency sharing between data relay satellite systems and systems of other services	S2
<a href="#"><u>129-2/7</u></a>	Unwanted emissions radiated from and received by stations of the science services	S2
<a href="#"><u>139-3/7</u></a>	Data transmission for Earth exploration-satellite systems	S2
<a href="#"><u>141-3/7</u></a>	Data transmission for meteorological satellite systems	S2
<a href="#"><u>145-2/7</u></a>	Technical factors involved in the protection of radioastronomical observations	S2
<a href="#"><u>146-2/7</u></a>	Criteria for evaluation of interference to radio astronomy	S2
<a href="#"><u>149-1/7</u></a>	Frequency utilization on the far side of the Moon	S2
<a href="#"><u>152-2/7</u></a>	Standard frequencies and time signals from satellites	S2
<a href="#"><u>202-1/7</u></a>	Protection criteria and frequency sharing between space very long baseline interferometry and other space research systems	S2
<a href="#"><u>203-1/7</u></a>	Characteristics and telecommunication requirements for space very long baseline interferometry	S2
<a href="#"><u>207-2/7</u></a>	Time and frequency transfer using digital communication links	S2
<a href="#"><u>211/7</u></a>	Frequency sharing between the space research service and other services in the 37-38 GHz and 40-40.5 GHz bands	S2
<a href="#"><u>221/7</u></a>	Preferred frequency bands and protection criteria for space research service observations (passive)	S2
<a href="#"><u>222-1/7</u></a>	Radio links between earth stations and lunar and planetary missions by means of lunar and/or planetary data relay satellites	S2
<a href="#"><u>223/7</u></a>	The role of differential GPS networks in timing applications	S2
<a href="#"><u>226/7</u></a>	Frequency sharing between the radio astronomy service and other services in bands above 70 GHz	S2
<a href="#"><u>229/7</u></a>	Frequency sharing between the Earth exploration-satellite service (passive) and airborne altimeters in the aeronautical radionavigation service in the band 4 200-4 400 MHz	C2
<a href="#"><u>230/7</u></a>	Protection and sharing criteria for radio astronomy measurements from space	S2
<a href="#"><u>231/7</u></a>	Earth exploration-satellite service (active) and space research service (active) operating above 100 GHz	S2
<a href="#"><u>232-1/7</u></a>	Frequency sharing between spaceborne passive sensors and other services in the bands 10.60-10.68 GHz, 31.5-31.8 GHz and 36-37 GHz	S2

Question ITU-R	Title	Category
<a href="#"><u>234/7</u></a>	Frequency sharing between active sensor systems in the Earth exploration-satellite service and systems operating in other services in the 1 215-1 300 MHz band	S2
<a href="#"><u>235-1/7</u></a>	Technical and operational characteristics of applications of science services operating above 275 GHz	S2
<a href="#"><u>236/7</u></a>	The future of the UTC time scale	S2
<a href="#"><u>237/7</u></a>	Technical and operational factors relating to interference mitigation practices at radio astronomy stations	S2
<a href="#"><u>238/7</u></a>	Trusted time source for time stamp authority	S2
<a href="#"><u>239/7</u></a>	Instrumentation time codes	S2
<a href="#"><u>242/7</u></a>	Radio quiet zones	S2
<a href="#"><u>243/7</u></a>	Characterization of technical parameters and interference effects and possible interference mitigation techniques for passive sensors operating in the Earth exploration-satellite service (passive)	S2
<a href="#"><u>244/7</u></a>	Interference between standard frequency and time signal services operating between 20 and 90 kHz	S2
<a href="#"><u>245/7</u></a>	Interference to the standard frequency and time signal service in the low-frequency band caused by noise from electrical sources	S2

RESOLUTION ITU-R 6-1\*

**Liaison and collaboration with the ITU  
Telecommunication Standardization Sector**

(1993-2000)

The ITU Radiocommunication Assembly,

*considering*

a) that the Radiocommunication (ITU-R) Study Groups are charged to focus on the following in the study of Questions assigned to them:

“a) use of the radio-frequency spectrum in terrestrial and space radiocommunications and of the geostationary-satellite and other satellite orbits;

b) characteristics and performance of radio systems;

c) operation of radio stations;

d) radiocommunication aspects of distress and safety matters;” (Article 11 of the ITU Convention, Nos. 151 to 154);

b) that the Telecommunication Standardization (ITU-T) Study Groups are charged to:

“... study technical, operating and tariff questions and prepare recommendations on them with a view to standardizing telecommunications on a worldwide basis, including recommendations on interconnection of radio systems in public telecommunication networks and on the performance required for these interconnections;” (Article 14 of the Convention, No. 193);

c) that the two Sectors were given the responsibility of jointly agreeing on the assignment of studies and to keep the division of studies constantly under review (Nos. 158 and 195 of the Convention);

d) that the initial allocation of work between ITU-T and ITU-R has been completed,

*considering further*

Resolution 16 of the Plenipotentiary Conference (Rev. Minneapolis, 1998),

*noting*

that Resolution 18 of the World Telecommunication Standardization Assembly (Montreal, 2000) provides mechanisms for ongoing review of the allocation of work and cooperation between the ITU-R and ITU-T Sectors,

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\* This Resolution should be brought to the attention of the ITU Telecommunication Standardization Sector.

*resolves*

- 1 to refer to the Radiocommunication Advisory Group in collaboration with the Telecommunication Standardization Advisory Group, the continuing review of new and existing work and its distribution between the two Sectors, for approval by Members in accordance with the procedures laid down for the approval of new or revised Questions taking into account the activities and results of the ongoing restructuring efforts within ITU;
- 2 that the principles for the allocation of work to the Radiocommunication Sector and Telecommunication Standardization Sector (see Annex 1) should be used to give guidance in the allocation of work to the Sectors;
- 3 that, if considerable responsibilities in both Sectors in a particular subject are identified, either:
  - a) the procedure as given in Annex 2 should be applied, or
  - b) a joint meeting may be arranged by the Directors, or
  - c) the matter should be studied by relevant Study Groups of both Sectors with appropriate coordination (see Annex 3),

*invites*

the Directors of the Radiocommunication and Telecommunication Standardization Bureaux to strictly observe the provisions of *resolves* 3 and to identify ways and means of strengthening this cooperation.

## **Annex 1**

### **Principles for the allocation of work to the Radiocommunication and Telecommunication Standardization Sectors**

#### **1 General**

##### ***Principle 1***

**The approach to work in a Sector needs to be task-oriented, with an appropriate Study Group (or designated group) responsible for coordination. Further assignment of detailed tasks within a given work item or subject area would then occur, with special arrangements for handling work which crosses Sector boundaries.**

Work planning may start with a service or system concept, and would include development of overall network or service architectures and identification of interfaces through to more detailed specification and linking of tasks.

Activity related to ongoing review of existing Recommendations needs to be accommodated as a general area of work.

## 2 Roles of the Sectors

Within a task-oriented approach, experts of both Sectors should be able to work as part of a well-managed team.

### *Principle 2*

**Telecommunication Standardization Sector work includes interworking arrangements required for either radio-based equipment within a public telecommunication network or radio systems requiring interconnection for the carriage of public correspondence.**

NOTE 1 – Public correspondence: any telecommunication which offices and stations must, by reason of their being at the disposal of the public, accept for transmission.

In addition, the Recommendations developed by the Telecommunication Standardization Sector need to provide for the capabilities required to support the particular characteristics of radio systems. Similarly, the work of the Telecommunication Radiocommunication Sector should complement the work of the Standardization Sector, especially where it relates to the use of radio-based technology in telecommunication networks. The two Sectors will therefore both need to consider interface questions.

The term “public correspondence” should not be interpreted too restrictively in Principle 2 (and elsewhere). The word “includes” is intended to imply that the carriage of related classes of traffic (e.g. government, service) or user applications are not excluded.

### *Principle 3*

**Radiocommunication Sector work related to network standards includes studies addressing the characteristics, performance, operation and spectrum aspects of radio-based equipment or radio systems as necessary to support the interconnection and interworking arrangements identified by the Telecommunication Standardization Sector.**

The characteristics of radio-based equipment refer to those characteristics dealing with the equipment and the physical environment in which the equipment must work. Examples include performance, modulation, coding, error correction, maintenance and other aspects that may affect the interface signals and protocols that are able to be supported.

### *Principle 4*

**Before specific tasks are allocated, services, network architectures, and interfaces should be identified as clearly as possible.**

For example, the Telecommunication Standardization Sector and the Radiocommunication Sector would jointly identify interfaces to be supported by the system under study. The Radiocommunication Sector will also need to identify the scope and capabilities of radio systems needed to meet the interface requirements and achieve optimum spectrum/orbit utilization.

### *Principle 5*

**Work unique to the Radiocommunication Sector covers matters related to spectrum and orbit utilization and efficiency and, *inter alia*, all aspects of services not used for public correspondence, for example radiodetermination, independent mobile radio services, broadcasting, safety and distress operation, remote sensing, amateur radio, and radio astronomy.**



### ***Principle 6***

**The studies in one Sector must complement those of the other Sector where a task crosses Sector boundaries noting that in some cases, joint studies may be required as the most practical option. To guide actual work allocations, the coordinating Sector (as user) could produce statements on “desirable/required characteristics”. The potential provider Sector (or Study Group) could on its own initiative, or in response, develop statements of technology capability in the form of “achievable/typical characteristics”.**

Mutual dependency will require continued cooperation where both Sectors have an interest in the work. In establishing tasks toward standards for a service based on technology of both Sectors, the coordinating Sector must make best use of established sources of skill and knowledge. Joint ad hoc Groups could be established as needed to ensure the best possible progress and information exchange, where necessary.

### **3 Coordination on new study Questions**

Coordination on study Questions is needed. A key element of such arrangements is the maintenance of a satisfactory pace, quality of output and avoidance of delays in progressing current work.

### ***Principle 7***

**Standardization work should continue in both Sectors while suitable arrangements are developed and put in place to maintain the pace and quality of output.**

Coordination on study Questions should be monitored and reviewed by the Advisory Groups for the purpose of ensuring timely and progressive output.

Some new study Questions may include components which fall into both Sectors. In line with the project approach and efficient management practice, such Questions should be revised so that the tasks for each Sector can be clearly identified, or establish joint arrangements, if necessary.

### ***Principle 8***

**Study Groups should continue as efficient and effective sources of special skills in the task-oriented environment.**

Task orientation should not lead to numerous, independent project groups which potentially duplicate or diverge from established work. Where it is appropriate to establish a special group (e.g. to address interface or interworking issues), it should draw skills from the relevant Study Groups, appropriately limiting the scope of the project group, while following the guidelines in *resolves 3*. In this way, compatibility and consistency across multiple applications is maintained. Recommendations from such special groups, in any case, have to be approved by the appropriate Study Group prior to submission to the ITU Members for approval.

## **Annex 2**

### **Procedural method of cooperation**

With respect to *resolves* 3a), the following procedure should be applied:

- a) the Radiocommunication and Telecommunication Standardization Advisory Groups may jointly nominate the Sector which will be leading in the work and will finally approve the deliverable;
- b) the leading Sector will request the other Sector to indicate those requirements which it considers essential for integration in the deliverable;
- c) the leading Sector will base its work on these essential requirements and integrate them in its draft deliverable;
- d) during the process of development of the required deliverable the leading Sector shall consult with the other Sector in case it meets difficulties with these essential requirements. In case of agreement on revised essential requirements the revised requirements shall be the basis for further work;
- e) when the deliverable concerned comes to maturity, the leading Sector shall seek once more the views of the other Sector.

In the determination of the work responsibility it may be appropriate to progress the work by drawing jointly on the skills of both Sectors.

## **Annex 3**

### **Coordination of the radiocommunication and telecommunication standardization activities through Intersector Coordination Groups**

With respect to *resolves* 3c) the following procedure shall be applied:

- a) the joint meeting of the advisory groups as indicated in *resolves* 1, may, in exceptional cases, establish an Intersector Coordination Group (ICG) to coordinate the work of both Sectors and to assist the advisory groups in coordinating the related activity of their respective Study Groups;
- b) the joint meeting shall, at the same time, nominate the Sector which will be leading in the work;
- c) the mandate of each ICG shall be clearly defined by the joint meeting, based on the particular circumstances and issues at the time the group is established; the joint meeting shall also establish a target date for termination of the ICG;
- d) the ICG shall designate a Chair and a Vice-Chair, one representing each Sector;
- e) the ICG shall be open to Members of both Sectors in accordance with Nos. 86 to 88 and 110 to 112 of the Constitution;
- f) the ICG shall not develop Recommendations;

- g) the ICG shall prepare reports on its coordinating activities to be presented to each Sector's Advisory Group; these reports shall be submitted by the Directors to the two Sectors;
  - h) an ICG may also be established by the Radiocommunication Assembly or by the World Telecommunication Standardization Assembly following a recommendation by the advisory group of the other Sector;
  - j) the cost of an ICG shall be supported by the two Sectors on an equal basis and each Director shall include in the budget of his Sector, budgetary provisions for such meetings.
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## RESOLUTION ITU-R 7-1

### **Telecommunication development including liaison and collaboration with the ITU Telecommunication Development Sector**

(1993-2000)

The ITU Radiocommunication Assembly,

*considering*

- a) that one of the purposes of the Union is to “foster international cooperation and solidarity in the delivery of technical assistance to the developing countries and the creation, development and improvement of telecommunication equipment and networks in developing countries by every means at its disposal, ...” (No. 14 of the ITU Constitution);
- b) that a further purpose of the Union is also to “undertake studies, make regulations, adopt resolutions, formulate Recommendations and Opinions and collect and publish information concerning telecommunication matters” (No. 18 of the Constitution);
- c) that the Constitution and the ITU Convention consolidate the activities of the ITU relating to radiocommunications in the Radiocommunication Sector and the activities relating to the technical cooperation with, and assistance to, developing countries in the Telecommunication Development Sector;
- d) that Nos. 159 and 160 of the Convention require that the Radiocommunication Study Groups “... pay due attention to the study of Questions and to the formulation of Recommendations directly connected with the establishment, development and improvement of telecommunications in developing countries at both the regional and international levels” and that, for the purpose of facilitating the review of activities in the Radiocommunication Sector, “... measures should be taken to foster cooperation and coordination with ... the Telecommunication Development Sector”;
- e) that Resolution 5 (Rev.Doha, 2006) of the World Telecommunication Development Conference further instructs the Director of the Telecommunication Development Bureau in close collaboration with the Directors of the Radiocommunication and Telecommunication Standardization Bureaux, to consider and implement the best ways and means to assist developing countries, and in particular least developed countries, in preparing for and participating actively in the work of the three Sectors, and notably in the Sector advisory groups, assemblies and conferences and in the Study Groups of particular relevance to developing countries;
- f) that Resolution 66 (Rev. Minneapolis, 1998) of the Plenipotentiary Conference instructs the Director of the Telecommunication Development Bureau to implement, as a priority, in close coordination with the Director of the Radiocommunication Bureau and the Director of the Telecommunication Standardization Bureau, strategies and mechanisms to encourage and facilitate the efficient use by the developing countries, and in particular least developed countries, of the Web-based documents and publications of the Union;
- g) that in accordance with No. 134 of the Convention, the Radiocommunication Assembly shall “group Questions of interest to developing countries, as far as possible, in order to facilitate their participation in the study of those Questions”,

*noting*

- a) the very limited material and financial resources available to the developing countries, preventing them from participating regularly in the work of the Radiocommunication Study Groups;
- b) the adverse effects which the absence of the developing countries from Study Group activities has on the universal nature of Study Group decisions and, possibly, on their effective application;
- c) that the procedure for adopting Recommendations by correspondence necessitates adequate exchange of information to obtain the broadest possible support;
- d) that, since the Radiocommunication Study Group work now involves Radiocommunication Conference preparation including procedures and other matters related to the Radio Regulations, all countries, irrespective of their level of development, need to be fully informed of developments in the studies,

*further considering*

- a) the important function of the Telecommunication Development Bureau in the provision of efficient consultancy to developing countries and the need to benefit in this respect from the expertise existing in the Secretariat of the Radiocommunication Bureau;
- b) that the complementary activities of engineers in the two Sectors, when appropriately coordinated, would benefit greatly the developing countries,

*recognizing*

- 1** that the developing countries themselves should, to the extent possible:
  - 1.1** participate in an active manner in the work of the Radiocommunication Study Groups, and provide any relevant technical information they possess concerning the conditions in their respective countries;
  - 1.2** exchange technical information on Study Group matters among themselves in areas of common interest;
  - 1.3** take advantage of the participation of countries of the same region in the meetings of the Study Groups;
  - 1.4** when they face difficulties which may be of interest to other administrations during the course of operating radio services, be encouraged to submit contributions to the Radiocommunication Bureau describing these difficulties. The Director of the Radiocommunication Bureau will communicate these contributions to the appropriate Study Group(s),

*resolves*

- 1** that the Radiocommunication Advisory Group and the Director of the Radiocommunication Bureau shall cooperate actively with the Telecommunication Development Advisory Group and the Director of the Telecommunication Development Bureau in identifying and implementing means facilitating developing countries to participate in the Study Group's activities;
- 2** that, in order to facilitate this participation, Questions which are of interest to developing countries shall be grouped as far as possible in a limited number of Study Groups as stipulated in No. 134 of the Convention;
- 3** that the participation of developing countries may be facilitated through extensive use of modern communication means and the Telecommunication Development Bureau should be urged to consider possibilities for providing developing countries with such means;

**4** that, pursuant to No. 224 of the Convention, the Director of the Radiocommunication Bureau shall assist the Director of the Telecommunication Development Bureau in organizing worldwide and/or regional information meetings, seminars or workshops that will provide developing countries with the required information on ITU-R activities;

**5** that, pursuant to No. 166 of the Convention, the Director of the Radiocommunication Bureau shall provide assistance to the developing countries in their preparations for radiocommunication conferences;

**6** that the Director of the Radiocommunication Bureau, assisted by the Radiocommunication Study Groups, shall provide the Telecommunication Development Bureau with the necessary assistance in the development and updating of Handbooks;

**7** that the Director of the Radiocommunication Bureau, assisted by the Radiocommunication Study Groups, shall contribute to and participate in the work of the Telecommunication Development Study Groups, when considering relevant studies to which they may give valuable inputs;

**8** that the Director of the Radiocommunication Bureau shall cooperate with the Directors of the other two Bureaux relating to the activities in the development of, and updating of, handbooks with the view to avoiding duplication of effort;

**9** that, in the process of cooperating actively with the Telecommunication Development Bureau, all radiocommunication activities of the Union in the field of telecommunication development should be closely coordinated in the interest of achieving efficiency, effectiveness and avoiding duplication of effort,

*instructs the Chairmen of the Study Groups and the Director of the Radiocommunication Bureau*

**1** to take all appropriate actions for the implementation of this Resolution, among others, by motivating participants in the Radiocommunication Sector to provide assistance to the Telecommunication Development Sector,

*urges administrations and Members of the Radiocommunication Sector*

**1** to actively participate in the implementation of this Resolution, among others, by providing experts to assist developing countries, by contributing to the information meetings and seminars, by providing the necessary expertise in matters under consideration by the Telecommunication Development Study Groups and by hosting trainees from developing countries.

## RESOLUTION ITU-R 8-1

### **Radiowave propagation studies and measurement campaigns in developing countries**

(1993-2000)

The ITU Radiocommunication Assembly,

*considering*

- a) the importance of radiowave propagation measurement campaigns for acquiring data for the planning and coordination of various radiocommunication services, particularly at regional and sub-regional levels in developing countries;
- b) that various recommendations of world radiocommunication conferences have requested the Radiocommunication Study Groups to encourage and assist in initiating the study of radiowave propagation and radio noise in those areas where few or no measurements have been made;
- c) that Resolution 5 (Rev.WRC-2000) invites the Secretary-General to offer the assistance of the Union to developing countries in the tropical areas that endeavour to carry out national propagation studies and to arrange funds and resources for this purpose, and urges administrations to submit the results of these propagation measurements, including noise levels for sound broadcasting, to the Study Groups,

*recognizing*

- a) that there continue to be many regions of the world, particularly in the tropics, for which propagation data are not available,

*noting with satisfaction*

- a) the contributions made by some Member States and Sector Members to the radiowave propagation measurements in some areas of Africa, South America and Asia,

*resolves*

**1** that Radiocommunication Study Group 3 should identify within its work programme and in consultation with the concerned countries, radiowave propagation studies relating to tropical and subtropical regions of the world for which there is a lack of data. The programme of work of Radiocommunication Study Group 3 should clearly define study programmes in which engineers and scientists from the developing countries also contribute to collecting data and to developing analytical methods;

**2** that scientists and engineers from developing countries should be encouraged to participate actively in these study programmes and carry out studies on topics identified by Radiocommunication Study Group 3:

- by means of research in their home countries;
- by participation, whenever possible, in meetings held in connection with Radiocommunication Study Group or Working Party meetings, in the regions concerned;
- by means of working visits to radiowave propagation laboratories of Member States and Sector Members participating in the work of the Radiocommunication Study Groups;

**3** that the Radiocommunication Bureau, with appropriate support from Radiocommunication Study Group 3, should collaborate closely with the Telecommunication Development Bureau in identifying suitable propagation measurement campaigns in the regions of interest and should offer all necessary technical guidance to the Telecommunication Development Bureau in the establishment of any such measurements;

**4** that the Director of the Radiocommunication Bureau, in close cooperation with the Director of the Telecommunication Development Bureau and the administrations concerned, be requested to determine the objectives, scope, technical means and staff required for carrying out identified propagation measurement campaigns and to seek through the Secretary-General funding and other arrangements from appropriate sources to implement the above decisions with respect to propagation measurement activities;

**5** that Member States and Sector Members be urged to make contributions (in cash and/or in kind) to support the radio propagation measurement campaigns in the developing countries;

**6** that the administrations interested in the measurement campaigns be requested to designate suitably qualified personnel to participate actively in these campaigns.

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RESOLUTION ITU-R 9-3\*

**Liaison and collaboration with other relevant organizations, in particular ISO and IEC**

(1993-2000-2003-2007)

The ITU Radiocommunication Assembly,

*bearing in mind*

Article 50 of the ITU Constitution, and

*considering*

- a) that Goal 3 in Resolution 71 (Rev. Antalya, 2006) of the Plenipotentiary Conference calls for widening the Union's membership, extending participation and facilitating cooperation of an increasing number of administrations and organizations, as well as new actors, such as relevant WSIS stakeholders;
- b) that a number of organizations, including ISO and IEC, dealing with radiocommunications standardization, exist;
- c) that such organizations have the potential for identifying, defining and proposing solutions of particular problems of interest to the Radiocommunication Study Groups and for assuming responsibility for maintaining standards for such systems;
- d) that one objective of the Radiocommunication Study Groups is to harmonize the work in radiocommunications with that of regional/national bodies and other international bodies;
- e) that making reference in ITU-R Recommendations to organizations dealing with radiocommunications can minimize publication and translation costs to ITU, noting that it may increase the customer's total cost of acquiring such ITU-R Recommendations when the costs of non-ITU referenced documents are also included;
- f) that such organizations may offer a means of improving the dissemination and effectiveness of ITU-R Recommendations;
- g) that the establishment of appropriate arrangements with other organizations in relation to copyright issues is desirable,

*noting*

- a) that references to standards published outside of the ITU-R are not appropriate in ITU-R Recommendations that may be incorporated-by-reference into the Radio Regulations;
- b) that groups have been formed (e.g. the annual meeting of Standardization Organizations (SDOs)), at the international level, to exchange information on standardization, to facilitate harmonization of standards and to complement the formal processes of standardization bodies, in particular ITU, in the work of developing international standards;

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\* This Resolution should be brought to the attention of the Telecommunication Standardization Sector and the Telecommunication Development Sector.

- c) that procedures developed by Study Groups in conjunction with the Director of the Radiocommunication Bureau to address collaboration with other organizations for specific Recommendations, including the use of references, have been in place since 1999 and have worked very well;
- d) that, furthermore, pursuant to the decisions of the Radiocommunication Assembly (Istanbul, 2000), the Director of the Radiocommunication Bureau established in 2001 formal arrangements between the ITU and other organizations<sup>1</sup> successfully addressing collaboration, the exchange of documentation, and copyright issues;
- e) that joint activities between ITU-T and ISO/IEC on drafting common texts, including Recommendations, have been common practice for many years,

*recognizing*

- a) that the ITU Constitution (No. 145A) and the ITU Convention (No. 129A) were amended by the Plenipotentiary Conference (Marrakesh, 2002) to make explicit the Radiocommunication Assembly's responsibility to adopt the working methods and procedures for the management of the Sector's activities;
- b) that pursuant to No. 248A of the ITU Convention, following a procedure developed by the Sector, the Director of the Bureau may, in consultation with the Chairman of the Study Group concerned, invite an organization which does not participate in the Sector to send representatives to take part in the study of a specific matter in the Study Group concerned or subordinate groups,

*resolves*

- 1 that administrations should encourage organizations dealing with radiocommunications to take into account the global activities of the Radiocommunication Study Groups;
- 2 that ITU-R Recommendations, as determined by the Study Group, may reference approved standards which are maintained by other organizations;
- 3 that Radiocommunication Study Groups or groups established by the Study Groups, may liaise, collaborate, and exchange information in accordance with established principles (see Annex 1) with other organizations such as standard development organizations, universities, and industry organizations, and with partnership projects, forums, consortia, research collaborations;
- 4 that Annex 1 "Principles for interaction of ITU-R with other organizations" should be used as guidance for liaison and collaboration activities with other organizations,

*instructs the Director, within the context of Annex 1*

- 1 to develop guidelines for procedures for the contribution of material of other organizations to the work of the Study Groups or groups established by the Study Groups, including the use of references to documents of other organizations in ITU-R Recommendations;
- 2 to develop, in accordance with No. 248A of the ITU Convention, a procedure to invite organizations which do not participate in the Sector to take part in the study of specific matters,

*further instructs the Director, in accordance with instructs the Director 1 and 2*

- 3 to develop, as necessary, arrangements, including appropriate copyright agreements, with the other organizations not party to the common arrangements agreed with ISO and IEC:

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<sup>1</sup> Arrangements have been established between ITU and the European Telecommunications Standards Institute (ETSI) and between ITU and the Society of Motion Picture and Television Engineers (SMPTE).

- a) to allow the use of references to documents of other organizations in ITU-R Recommendations; and
- b) to facilitate collaboration and coordination with other organizations in meetings of the Study Groups or groups established by the Study Groups and the contribution of material to these meetings,

*instructs the Radiocommunication Advisory Group*

to review these guidelines.

## **Annex 1**

### **Principles for interaction of ITU-R with other organizations**

1 Interaction of Radiocommunication Study Groups or groups established by the Study Groups (collectively referred to here as SGs) with other organizations principally falls into two key areas:

- a) references to documents of other organizations in ITU-R Recommendations;
- b) cooperation and coordination with other organizations in meetings of the SGs and the contribution of material to them, and possible development of common texts, including Recommendations.

2 For the purpose of interaction with the ITU-R, other organizations are those that are directly relevant to the work of the SGs and having acknowledged competency in the area of the work. Other organizations may include, but are not limited to, entities such as standard development organizations, partnership projects, forums, consortia, research collaborations, universities, and industry organizations.

3 Interaction of the SGs with other organizations should be directly related to the work of the SGs.

4 The use of collaborative arrangements between other organizations and the ITU-R should not be considered as a substitute for membership in the ITU-R. Membership status should always be encouraged where it is appropriate. However, it is recognized that this is not always possible and thus collaborative arrangements may be desirable. Involvement of other organizations with the ITU-R via collaborative arrangements should not adversely affect the rights and privileges of members.

5 Collaborative arrangements should be developed, as may be appropriate, taking into account the nature of the interaction. Such collaborative arrangements should only be as complex as necessary. For example, a general “blanket” guideline and procedure may be suitable for the more “casual” short-term interaction rather than individualized arrangements.

6 Information flows between the SGs and the other organizations should be officially conducted at the Radiocommunication Bureau level. This provides a uniform point of contact with the ITU-R and allows for management, maintenance, review, oversight and auditing of such information flows by the ITU-R.

7 It is prudent that collaborative arrangements with other organizations have a defined period of validity and that these arrangements be periodically reviewed by the Director and appropriate reports made to the Study Group and the Radiocommunication Advisory Group concerning the interaction of the ITU-R with other organizations.

8 With regard to the use of references, the guidelines and procedures should also address aspects such as when references are appropriate to be used in ITU-R Recommendations, how normative/informative references should be used, how to document and maintain references.

9 The referencing of documents of other organizations may involve business matters and legal details, including conformity with ITU copyright and patent policies. These matters should be addressed, as appropriate, by the Director on an individual basis.

10 Details of guidelines for procedures related to the interaction of ITU-R with other organizations should come under the purview of the Director.

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RESOLUTION ITU-R 11-4

**Further development of the Spectrum Management  
System for Developing Countries**

(1993-1995-1997-2003-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that an upgraded spectrum management system would contain software modifications to the current Spectrum Management System for Developing Countries (SMS4DC) to support and facilitate upgraded national spectrum management and monitoring, coordination among administrations and notification to the Radiocommunication Bureau (BR);
- b) that the SMS4DC has been developed in Unicode by the Telecommunication Development Bureau (BDT) in close cooperation with BR based on the technical specifications developed by the ITU-R and ITU-D group of experts;
- c) that data elements used in the SMS4DC were based on relevant ITU-R Recommendations on spectrum management, including those for notification and coordination purposes;
- d) that administrations need to maintain spectrum management data with an automated database management system;
- e) that many administrations have been successful in implementing automated database management systems (DBMS) in the development and maintenance of their national spectrum management data,

*noting*

- a) that ITU-R Recommendations on radiowave propagation are being taken into account in the development of the System,

*resolves*

- 1** that Study Group 1 and BR experts should continue to assist in the further development of the SMS4DC in accordance with WRC decisions and relevant ITU-R Recommendations, Handbooks and Reports;
- 2** that BR should continue to assist BDT in implementing the Spectrum Management System in different countries through the participation of Study Group 1 and BR experts in relevant training projects.

RESOLUTION ITU-R 12-1

**Handbooks and special publications for  
development of radiocommunication services**

(1993-2000)

The ITU Radiocommunication Assembly,

*considering*

- a) that close cooperation shall be carried out among the Radiocommunication, Telecommunication Standardization and Telecommunication Development Sectors (No. 79 of the ITU Constitution);
- b) that Radiocommunication handbooks and special publications constitute an authoritative source of technical material relating to radiocommunications that may be of direct benefit to developing countries,

*bearing in mind*

- a) that there is a need to disseminate information contained within handbooks and special publications as widely as possible throughout the ITU membership in a form which is readily understandable and that can be applied practically, especially in the training of technicians and engineers for use in developing countries,

*resolves*

- 1** that in establishing priorities for the preparation and publishing of handbooks and special publications, special consideration should be given to the needs of developing countries,

*invites*

- 1** the Telecommunication Development Sector to indicate what special subjects would be most useful to developing countries so that planning for handbooks and special publications may be undertaken.

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RESOLUTION ITU-R 15-4

**Appointment and maximum term of office for Chairmen and Vice-Chairmen of Radiocommunication Study Groups, the Coordination Committee for Vocabulary and of the Radiocommunication Advisory Group**

(1993-1995-1997-2000-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that No. 133 and No. 148 of the ITU Convention provide for the establishment of Radiocommunication Study Groups;
- b) that No. 149 of the Convention and other related provisions indicate the nature of the work of the Study Groups;
- c) that No. 242 of the Convention requires the Radiocommunication Assembly to appoint Chairmen and Vice-Chairmen of Study Groups, taking account of competence and equitable geographical distribution and the need to promote more efficient participation by the developing countries;
- d) that a specific time-limit on the term of office would permit the introduction of new ideas on a periodic basis, while at the same time give an opportunity for Study Group Chairmen and Vice-Chairmen to be appointed from different Member States;
- e) that provisions for the Radiocommunication Advisory Group (RAG) have been incorporated into Article 11A of the Convention;
- f) that No. 160G of the Convention states that RAG shall “adopt its own working procedures compatible with those adopted by the Radiocommunication Assembly”,

*taking into account*

- a) that a maximum time in office of two terms for Chairmen and Vice-Chairmen for the Study Groups, the Coordination Committee for Vocabulary (CCV) and RAG (hereinafter referred to as Chairmen and Vice-Chairmen) provides for a reasonable amount of stability while providing the opportunity for different individuals to serve in these capacities,

*resolves*

- 1** that candidates for the posts of Chairmen and Vice-Chairmen should be identified, by Member States of the ITU and Radiocommunication Sector Members as soon as feasible once the structure of the Study Groups is clear; the procedures to be followed should be as given in Annex 1; the qualifications required for such posts are given in Annex 2;
- 2** that candidates for the posts of Chairmen and Vice-Chairmen should be identified, taking into account that for each post the Assembly will appoint the Chairman and those Vice-Chairmen deemed necessary;

- 3 that nominations for the posts of Chairmen and Vice-Chairmen should be accompanied by a biographical profile highlighting the qualifications of the individuals proposed; the Director will circulate the profiles to the Heads of Delegation present at the Assembly;
- 4 that the term of office for both Chairmen and Vice-Chairmen should be limited so as to terminate at the end of the Radiocommunication Assembly at which the officer will have served for two consecutive terms;
- 5 that the period in office in one appointment (e.g. as a Vice-Chairman) does not count towards the period in office for another appointment (e.g. as a Chairman) and that steps should be taken to provide some continuity between Chairmen and Vice-Chairmen.

## **Annex 1**

### **Procedure for the appointment of Chairmen and Vice-Chairmen of the Radiocommunication Study Groups, the Coordination Committee for Vocabulary and the Radiocommunication Advisory Group**

- 1 The Director of the Radiocommunication Bureau will request Member States and Sector Members to submit proposals for candidates for the posts of the Chairmen and Vice-Chairmen of the Study Groups, and the Coordination Committee for Vocabulary (CCV) and the Radiocommunication Advisory Group (RAG).
- 2 In order to help the Radiocommunication Assembly appoint Chairmen/Vice-Chairmen, Member States and Sector Members should be encouraged to indicate suitable candidates to the Director of the Radiocommunication Bureau preferably three months before the opening of the Radiocommunication Assembly.
- 3 On the basis of proposals received, the Director will circulate to members the list of candidates. The list of candidates should be accompanied by an indication of the qualifications of each candidate as given in Annex 2.
- 4 On the basis of this document and any relevant comments received, the Heads of Delegation, at a suitable time during the Assembly, should be invited to prepare, in consultation with the Director, a consolidated list of designated Study Group Chairmen and Vice-Chairmen to be submitted in a document to the Radiocommunication Assembly for final approval.
- 5 No. 244 of the ITU Convention states that: "If, in the interval between two assemblies or conferences of the Sector concerned, a Study Group Chairman is unable to carry out his/her duties and only one Vice-Chairman has been appointed, then that Vice-Chairman shall take the Chairman's place. In the case of a Study Group for which more than one Vice-Chairman has been appointed, the Study Group, at its next meeting, shall elect a new Chairman from among those Vice-Chairmen and, if necessary, a new Vice-Chairman from among the members of the Study Group. It shall likewise elect a new Vice-Chairman if one of the Vice-Chairmen is unable to carry out his/her duties during that period."
- 6 If the Radiocommunication Assembly decides to set up a new Study Group, discussions will have to be held at the Radiocommunication Assembly and conclusions reached.



## **Annex 2**

### **Qualifications of the Chairmen and Vice-Chairmen**

As regards competence, the following qualifications *inter alia* appear to be of paramount importance when appointing Chairmen and Vice-Chairmen:

- knowledge and experience;
- continuity in participation in the relevant Study Group or, for Chairmen and Vice-Chairmen of the Radiocommunication Advisory Group, in the ITU Radiocommunication Sector;
- managerial skills;
- availability.

Particular reference to the above qualifications should be included in the biographical profile to be circulated by the Director.

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RESOLUTION ITU-R 17-3

**Integration of International Mobile Telecommunications  
(IMT-2000 and IMT-Advanced) with existing networks**

(1993-1997-2000-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that Resolution ITU-R 56 provides that the term “IMT” is the root name that encompasses both IMT-2000 and IMT-Advanced collectively;
- b) that, with the changing radiocommunication environment, a world process for technological harmonization needs to be advanced further to ensure *inter alia*, global interconnection and interoperability;
- c) that the introduction of new technologies and services is of great importance for the modernization and expansion of telecommunication networks;
- d) that IMT will be a key enabler for the growth of those networks;
- e) that IMT involves both terrestrial and space components;
- f) that the work has been well advanced on IMT in connection with Question ITU-R 77/8;
- g) that studies are in progress regarding the future development of IMT and on systems beyond IMT in connection with Questions ITU-R 77/8, 228/8 and 229/8,

*resolves to request the Secretary-General*

**1** to continue to develop, in conjunction with the Directors of the Radiocommunication, Telecommunication Standardization and Telecommunication Development Bureaux, appropriate measures to enable all countries of the world, and particularly the developing countries to make better plans for the smooth integration of IMT systems (IMT-2000 and IMT-Advanced) with their existing public networks.

## RESOLUTION ITU-R 19-2

### Dissemination of ITU-R texts

(1978-1986-1990-1993-2000-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) the decisive importance for radiocommunications of the information contained in the ITU-R texts;
- b) that a wider dissemination of the information contained in these texts would promote technical progress;
- c) that the ITU has developed the Telecom Information Exchange Services (TIES) and publishes texts on the ITU website;
- d) that the wider use of electronic means of communication and document distribution promotes more rapid dissemination of information and realizes cost savings for the Union and the ITU membership;
- e) Resolution 154 (Antalya, 2006) of the Plenipotentiary Conference “Use of the six official languages of the Union on an equal footing”, the decisions of Council taken pursuant to this Resolution, and the follow-up by the Radiocommunication Advisory Group,

*noting*

that the Director of the Radiocommunication Bureau periodically issues updated guidelines on working methods which complement and are additional to those specified in Resolution ITU-R 1 and which may address the practical aspects of the dissemination of ITU-R texts, such as by electronic means,

*resolves*

- 1** that the administrations should ensure the dissemination of ITU-R texts within their countries, by the means which they consider to be the most suitable and in the most appropriate fields;
- 2** that the Director of the Radiocommunication Bureau should take all the necessary steps, in close collaboration with the Secretary-General of the Union, to promote the wider dissemination and better knowledge of ITU-R texts;
- 3** that Radiocommunication Sector texts should be disseminated, to the maximum extent possible, through electronic means,

*instructs*

the Director of the Radiocommunication Bureau, working in collaboration with the Secretary-General, implementing the related decisions of the Council, and following advice by the Radiocommunication Advisory Group, to take the necessary steps to facilitate the use of electronic means for the distribution or exchange of information and for the dissemination of ITU-R texts, including such measures as the use of stable hyperlinks in electronic mail correspondence.

RESOLUTION ITU-R 22-2

**Improvement of national radio spectrum management  
practices and techniques**

(Question ITU-R 45/1)

(1990-1997-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that the administrations of many developing countries need to strengthen the national radio-frequency management organization in order to effectively carry out their responsibilities at both the international and national level;
- b) that administrations of developing countries take into account the guidelines indicated in relevant ITU documents, including the ITU-R Handbooks on National Spectrum Management, Spectrum Monitoring and Computer-aided Techniques for Spectrum Management (CAT);
- c) that Radiocommunication Study Group 1 continues the efforts to provide ITU-R Recommendations, Handbooks and Reports on national frequency management including the use of computer-aided spectrum management,

*resolves*

- 1** that Radiocommunication Study Group 1 should continue to take note of the special requirements of national spectrum management organizations from developing countries, as identified in Resolutions 9 and 10 (Rev.Doha, 2006) of the World Telecommunication Development Conference, and devote particular attention to these matters during the regular meetings of the Study Group and its Working Parties;
- 2** that such meetings shall be aimed at developing practices and techniques to improve spectrum management and include discussions concerning the establishment of computer-aided spectrum management systems;
- 3** that personnel involved in spectrum management from developing and developed countries and representatives from BR are particularly invited to participate in the spectrum management studies of Study Group 1.

## RESOLUTION ITU-R 23-1

### **Extension of the International Monitoring System to a worldwide scale**

(Question ITU-R 32/1)

(1963-1970-1993-2000)

The ITU Radiocommunication Assembly,

*considering*

- a) that Article 16, International monitoring, of the international Radio Regulations (RR) provides that administrations agree to continue the development of monitoring facilities to assist, to the extent practicable, in the implementation of the RR to help ensure efficient and economical use of the radio-frequency spectrum, and to help in the prompt elimination of harmful interference, taking into account the relevant ITU-R Recommendations;
- b) that Article 16 also provides that administrations shall, as far as they consider practicable, conduct such monitoring as may be requested of them by other administrations or by the Bureau;
- c) that Recommendation 36 (WRC-97) invites ITU-R to study and make recommendations concerning the (monitoring) facilities required to provide adequate coverage of the world with a view to ensuring efficient use of resources in international monitoring in reducing apparent congestion in the use of orbit and spectrum resources;
- d) that there are still wide areas of the world where the facilities available to the international monitoring system are inadequate or non-existent, particularly since facilities for the monitoring of emissions originating from space stations are expensive;
- e) that the General Secretariat maintains and publishes the List of International Monitoring Stations (List VIII) indicating their capabilities, telephone numbers, telegraphic addresses, telex numbers, facsimile numbers and e-mail addresses;
- f) that it is of utmost importance to satisfy the needs of the Radiocommunication Bureau, laid down by the RR, that all countries having domestic monitoring facilities make them available for international monitoring to the maximum possible extent,

*resolves*

- 1** that all administrations now participating in the international monitoring system, including for monitoring of space station emission levels, should be urged to continue to do so to the maximum extent possible;
- 2** that administrations, which do not at present participate in the international monitoring system, should be urged to make monitoring facilities available to that system, in accordance with Article 16 of the RR using the relevant information contained in the ITU-R Handbook on Spectrum Monitoring, latest revision;

- 3** that cooperation between monitoring stations of different administrations should be encouraged and improved with a view to exchanging monitoring information, including for information related to space station emissions, and to settling harmful interference caused by transmitting stations that are difficult to identify or cannot be identified;
- 4** that administrations, located in those areas of the world where monitoring facilities are inadequate, should be urged to promote the establishment of monitoring stations for their own use and make them available for international monitoring, in accordance with Article 16 of the RR;
- 5** that data supplied by the monitoring stations participating in the international monitoring system may be used by the Bureau to prepare summaries of useful monitoring data in application of Article 16 of the RR;
- 6** that administrations with more advanced terrestrial and space monitoring systems be urged to accept officials from other administrations to train them in the techniques of monitoring, direction finding, and geolocation. Initial contact for training may be made to the appropriate centralizing office as incorporated in the List of International Monitoring Stations (List VIII) published by the ITU General Secretariat.

NOTE 1 – The Administrations of Germany, Australia, Canada, the United States of America, France, Italy, Japan, Portugal and the United Kingdom have offered to receive officials from other administrations.

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RESOLUTION ITU-R 25-2

**Computer programs and associated reference numerical data  
for radiowave propagation studies**

(1978-1982-1986-1990-1993-1995-2000)

The ITU Radiocommunication Assembly,

*considering*

- a) that methods of prediction of the state of the propagation environment and of radiowave propagation characteristics are given or referred to in ITU-R Recommendations;
- b) that for effective use of such methods, computer programs and associated reference numerical data are needed;
- c) that it is uneconomic for individual organizations to develop their own computer programs for these predictions;
- d) that databanks and computer programs associated with Recommendations of the ITU-R P Series (Radiowave propagation) are available from that part of the ITU-R Web site concerning Radiocommunication Study Group 3,

*resolves*

**1** that the Director of the Radiocommunication Bureau should be requested to invite organizations which at present have their own computer programs, numerical reference data, and related documentation for the prediction methods described in the ITU-R Recommendations prepared by Radiocommunication Study Group 3, to make these available to the Radiocommunication Bureau through Radiocommunication Study Group 3.

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## RESOLUTION ITU-R 28-1

### **Standard-frequency and time-signal emissions**

(1963-1966-1970-1974-1986-2000)

The ITU Radiocommunication Assembly,

*considering*

a) the provisions of Article 26 of the Radio Regulations (RR),

*resolves*

**1** that, whenever an assignment to a station operating standard-frequency emission is put into service, the administration concerned shall notify this assignment to the Radiocommunication Bureau, in accordance with the provisions of Chapter III of the RR; however, no notice should be submitted to the Radiocommunication Bureau until experimental investigations and operational coordination have been completed, in accordance with Chapter III, of the RR;

**2** that, in addition, each administration should send all pertinent information on standard-frequency stations (such as frequency stability, changes in the phase of time pulses, changes in transmission schedule) to the Chairman, Radiocommunication Study Group 7, to the Director, Radiocommunication Bureau and, for official publication, to the Director, Bureau international des poids et mesures (BIPM) (International Committee of Weights and Measures);

**3** that Radiocommunication Study Group 7 should cooperate with the International Astronomical Union (IAU), the International Union of Radio Science (URSI), the International Union of Geodesy and Geophysics (IUGG), the International Union of Pure and Applied Physics (IUPAP) and the BIPM.

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## RESOLUTION ITU-R 33-2

### Preparation of texts on terminology

(1982-1990-1993-2000-2007)

The ITU Radiocommunication Assembly,

*recognizing*

- a) the adoption by the Plenipotentiary Conference of Resolution 154 (Antalya, 2006) on use of the six official languages of the Union on an equal footing; which instructed the Council and the General Secretariat on how to achieve the equal treatment of the six languages;
- b) the decisions by the ITU Council centralizing the editing functions for languages in the General Secretariat (Conferences and Publications Department), calling upon the Sectors to provide the final texts in English only (this applies also to terms and definitions),

*considering*

- a) that it is essential that the terminology work done within ITU should be widely disseminated, as regards both terms and definitions;
- b) that users generally have ITU publications at their disposal in one language only but are often required to read or write technical in one of the other official languages of ITU;
- c) that texts on vocabulary and glossaries are not as a rule directly available to users interested in a particular ITU-R publication,

*resolves*

- 1** that the texts on vocabulary and the parts of texts dealing specifically with definitions of terms published by the Radiocommunication Sector, in particular the Radio Regulations (RR), shall include the equivalents of all the terms defined in the other official languages of ITU;
- 2** that the means of providing the equivalents of terms in addition to the full text of terms and definitions in one of the languages other than English is now left to the General Secretariat (Conferences and Publications Department) as called for previously by the relevant Council decisions in 2006 and confirmed by *resolves* 3 of Resolution 154 (Antalya, 2006);
- 3** that close collaboration between CCV (see Resolution ITU-R 36) and the ITU General Secretariat (Conferences and Publications Department) shall be maintained in order to arrive at an agreed text for such terms and definitions.

## RESOLUTION ITU-R 34-2

### **Guidelines for the preparation of terms and definitions**

(1986-1990-1993-2000-2007)

The ITU Radiocommunication Assembly,

*recognizing*

- a) the adoption by the Plenipotentiary Conference of Resolution 154 (Antalya, 2006) on use of the six official languages of the Union on an equal footing, which instructed the Council and the General Secretariat on how to achieve the equal treatment of the six languages;
- b) the decisions by the ITU Council centralizing the editing functions for languages in the General Secretariat (Conferences and Publications Department), calling upon the Sectors to provide the final texts in English only (this applies also to terms and definitions),

*considering*

- a) that the individual Radiocommunication Study Groups have a responsibility for the proposal of terms and definitions in English language;
- b) that there is sometimes a wide diversity of approach in the implementation of these procedures;
- c) that there is a need for conformity in their implementation;
- d) that there are definitions contained in the Annexes to the ITU Constitution and Convention and in the Administrative Regulations,

*resolves*

**1** that, when proposing terms and definitions, the Radiocommunication Study Groups should use the guidelines given in Annex 1 hereto,

*invites*

**1** the ITU General Secretariat to review these guidelines and provide any useful comments to CCV (see Resolution ITU-R 36) for implementation by the Study Groups.

## **Annex 1**

### **Guidelines for the preparation of terms and definitions**

#### **1 Introduction**

Given below are guidelines for:

- proposing terms;
- proposed definitions.

## **2 Terms**

### **2.1 What is meant by a term?**

A term is a word or a group of words used to express a definite concept.

### **2.2 Conciseness of terms**

The term should be selected to be as concise as possible, without impairing the understanding of the text containing the term.

When a term is used in more than one field in a general vocabulary, the field of application may be added between brackets if justified, for example:

- coverage area (of a space station);
- coverage area (of a terrestrial transmitting station).

### **2.3 Ambiguous terms**

The occurrence of terms with more than one meaning is occasionally inevitable. When one term has several meanings, confusion can arise in the following cases:

- the meanings are very similar;
- the terms appearing in the same text with different meanings.

In such cases different terms should be found to express the different meanings of such ambiguous terms.

### **2.4 Complex terms**

A complex term should reflect the combination of concepts included in the definition. However, it need not include every constituent of the combination of concepts shown in the definition.

Care should be taken to avoid the unnecessary proliferation of terms and definitions where an already-defined qualifying term, used in conjunction with a simpler term, would suffice.

## **3 Definitions**

### **3.1 What is meant by definition?**

To define is to state clearly, accurately and precisely what is a concept. This should preferably be done in one sentence, expressing exactly the meaning of the term used to designate the concept.

A definition should describe the concept fully and contain sufficient data for the concept to be perfectly understood and its limits properly identified. The definition must be simple, clear and relatively brief. If appropriate, additional information should be in the form of notes.

### **3.2 Use of terms in definitions**

The following general principles may be adopted for the terms used in a definition:

- all the terms which appear in a definition must either be well known or defined elsewhere in the text,
- the term or terms representing a concept to be defined should not appear in the definition,
- the meaning of a term must not be expressed using another term which is itself defined by means of the first term.

### **3.3 Accuracy of definitions**

The degree of accuracy of definitions may depend on their intended use. Attempts to achieve greater accuracy may lengthen the text unnecessarily. This may involve the use of more specific and hence less familiar terms, thereby making the definition harder rather than easier to understand.

### **3.4 Changes to, or limitation of, generally accepted terms**

No attempt should be made to modify or limit the established usage of a term, unless the use of the existing terms causes confusion or ambiguity. In this case the use of the term may be deprecated.

When certain general terms are used in a restricted sense in the telecommunications fields, the definition should include an indication of this constraint.

### **3.5 Formulation of definitions**

The wording of the definition should clearly indicate whether the term is a substantive noun, a verb or an adjective.

### **3.6 Incomplete definitions**

Care should be taken not to omit the specific characteristics of a term in its definition. Such definitions are incomplete. The term and its definition should be interchangeable.

### **3.7 Definitions with more than one term**

Where more than one term applies to the same concept, the alternative term(s) may also be mentioned (separated by a semicolon), to the extent that this does not cause confusion.

### **3.8 Illustrations**

Illustrations can often be used to clarify or explain a definition. The type of illustration used will depend on each specific case; an example of a graphical depiction of terms used in the transmission loss concept can be seen in Recommendation ITU-R P.341 (see also Recommendation ITU-R V.573, subsection A4).

### **3.9 Further use of terms and definitions**

It should be borne in mind that it may be useful later to include a definition in a dictionary and, in this case, it would be valuable if the definition were fully comprehensible even when taken out of context. It could then be included in the dictionary without amendment.

## **4 Further references**

For further and more specific guidance on the drafting of terms and definitions, reference may be made to ISO International Standard 704 "Principles and methods for terminology" (1987), and any relevant update of these principles as well as any principles adopted by any other recognized organizations by ITU for such purposes.

## RESOLUTION ITU-R 35-2

### **The organization of vocabulary work covering terms and definitions**

(1990-1993-2000-2007)

The ITU Radiocommunication Assembly,

*recognizing*

- a) the adoption by the Plenipotentiary Conference of Resolution 154 (Antalya, 2006) on use of the six official languages of the Union on an equal footing, which instructed the Council and the General Secretariat on how to achieve the equal treatment of the six languages;
- b) the decisions by the ITU Council centralizing the editing functions for languages in the General Secretariat (Conferences and Publications Department), calling upon the Sectors to provide the final texts in English only (this applies also to the terms and definitions),

*considering*

- a) that it is important for the work of ITU, and in particular of the Radiocommunication Sector, to liaise with other relevant organizations dealing with terms and definitions as far as possible;
- b) the importance of avoiding misunderstanding within ITU and in particular with the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), respectively, in the use of common terms and definitions,

*resolves*

- 1** that the Radiocommunication Study Groups, within their terms of reference, should continue their work on technical and operational terms and their definitions in English only which may be required also for regulatory purposes and also on specialized terms in English which may be required by them in the course of their work;
- 2** that each Radiocommunication Study Group should assume responsibility for proposing terminology in its particular field of interest with the assistance of the Coordination Committee for Vocabulary (CCV) if needed (see Resolution ITU-R 36);
- 3** that each Radiocommunication Study Group should appoint a permanent Rapporteur for Vocabulary to coordinate efforts regarding terms and definitions and related subjects and to act as a contact person for the Study Group in this domain;
- 4** that the responsibilities of the Rapporteur for Vocabulary are given in Annex 1;
- 5** that each Radiocommunication Study Group should consider terms included within its texts and should propose definitions if necessary, or at least explain new concepts or clarify the text used to express existing concepts;
- 6** that where more than one Radiocommunication Study Group is defining the same terms and/or concept, efforts should be made to select a single term and a single definition which is acceptable to all of the Radiocommunication Study Groups concerned;
- 7** that, when selecting terms and preparing definitions, the Radiocommunication Study Group, shall take into account the established use of terms and existing definitions in ITU as well as those found in the International Electrotechnical Vocabulary (IEV);

- 8** that the Radiocommunication Bureau (BR) should collect all new terms and definitions proposed by the Radiocommunication Study Group, and provide them to CCV (see Resolution ITU-R 36), which shall act as an interface with IEC;
- 9** in close collaboration with the ITU General Secretariat (Conferences and Publications Department), CCV (see Resolution ITU-R 36) shall communicate with individual Rapporteurs for Vocabulary and, if necessary, promote meetings of experts where inconsistencies are found between terms and definitions in the Radiocommunication Sector, the Telecommunication Standardization Sector and IEC; these mediation efforts should seek agreement to the extent that such agreement is feasible, with remaining inconsistencies duly noted;
- 10** that Radiocommunication Study Groups, administrations and other participants in the work of the Radiocommunication Sector may submit contributions concerning vocabulary and related subjects to CCV (see Resolution ITU-R 36);
- 11** that Rapporteurs for Vocabulary should take into account any available ITU Sector lists of emerging terms and definitions and draft IEV chapters, to seek consistency of Radiocommunication Sector terms and definitions wherever practicable.

## **Annex 1**

### **Responsibilities of Rapporteurs for Vocabulary**

- 1** The Rapporteurs should study vocabulary and related subjects referred to them by:
- Working Parties or Task Groups of the same Radiocommunication Study Group;
  - the Radiocommunication Study Group as a whole;
  - the Rapporteur for Vocabulary of another Radiocommunication Study Group,
  - the CCV (see Resolution ITU-R 36).
- 2** The Radiocommunication Rapporteurs should be responsible for coordination of vocabulary and related subjects within their own Radiocommunication Study Groups and with other Radiocommunication Groups; the objective being to achieve the agreement of the Study Groups concerned on the proposed terms and definitions.
- 3** The Rapporteurs shall be responsible for liaison between their Radiocommunication Study Group and CCV (see Resolution ITU-R 36) and encouraged to participate in any face-to-face meeting of CCV (see Resolution ITU-R 36) that may be held.

## RESOLUTION ITU-R 36-2

### Coordination of vocabulary

(1990-1993-2000-2007)

The ITU Radiocommunication Assembly,

*recognizing*

- a) the adoption by the Plenipotentiary Conference of Resolution 154 (Antalya, 2006) on the use of the six official languages of the Union on an equal footing; which instructed the Council and the General Secretariat on how to achieve the equal treatment of the six languages;
- b) the decisions by the ITU Council centralizing the editing functions for languages in the General Secretariat (Conferences and Publications Department), calling upon the Sectors to provide the final texts in English only (this applies also to terms and definitions),

*considering*

- a) that it is important for the work of ITU, and in particular of the Radiocommunication Sector (ITU-R), to liaise with other interested organizations about terms and definitions, graphical symbols for documentation, letter symbols and other means of expression, units of measurement, etc., with the objective of standardizing such elements, etc.;
- b) the difficulty of achieving agreement on definitions when more than one Radiocommunication Study Group is involved;
- c) that ITU is collaborating with the International Electrotechnical Commission (IEC) in order to provide and maintain an internationally agreed vocabulary of telecommunications;
- d) that both the Telecommunication Standardization Sector (ITU-T) and ITU-R are collaborating with IEC (TC 3) in order to provide internationally agreed graphical symbols for diagrams and for use on equipment, and approved rules for the preparation of documentation and for item designation;
- e) that both the ITU-T and ITU-R are collaborating with IEC (TC 25) in order to provide internationally agreed letter symbols and units, etc.;
- f) that there is a continuing need for the publication of terms and definitions appropriate to the work of ITU-R;
- g) that unnecessary or duplicated work can be avoided by effective coordination and adoption of all work on vocabulary and related subjects carried out by the Radiocommunication Study Groups;
- h) that the long-term objective of the terminology work must be the preparation of a comprehensive vocabulary of telecommunications in the official languages of ITU,

*resolves*

- 1** that the coordination of work on vocabulary within ITU-R will be based on the submission by the Study Groups in English, with the consideration, resolution and adoption of the translation into the other five official languages as proposed by the General Secretariat, and will be ensured by a Coordination Committee for Vocabulary (CCV), comprising of experts in the various official languages and members designated by interested administrations and other participants in the work

of ITU-R, as well as the Rapporteurs for Vocabulary of the Radiocommunication Study Groups in close collaboration with the ITU General Secretariat (Conferences and Publications Department) and the Radiocommunication Bureau (BR) editor;

- 2 that the terms of reference of CCV is given in Annex 1;
- 3 that CCV should review and revise where necessary the existing Recommendations of the V series; new and revised Recommendations should be adopted by CCV and submitted for approval in accordance with Resolution ITU-R 1;
- 4 that administrations and other participants in the work of the Radiocommunication Sector may submit, to CCV and to the Radiocommunication Study Groups, contributions concerning vocabulary and related subjects;
- 5 that the Chairman and six Vice-Chairmen, each representing one of the official languages, should be nominated by the Radiocommunication Assembly.

## **Annex 1**

### **Terms of reference for the Coordination Committee for Vocabulary**

- 1 To adopt terms and definitions for vocabulary work, in close collaboration with the General Secretariat (Conferences and Publications Department), including graphical symbols for documentation, letter symbols and other means of expression, units of measurements etc., within the Radiocommunication Sector and to seek harmonization among all concerned Radiocommunication Study Groups regarding terms and definitions.
  - 2 To liaise with the Conferences and Publications Department, and with other organizations dealing with vocabulary work in the telecommunications field, for example with the IEC and the International Organization for Standardization (ISO) as well as the IEC-ISO Joint Technical Committee for Information Technology (JTC 1), in order to eliminate duplication of terms and definitions.
  - 3 To provide Study Groups with relevant unified graphical symbols to be used in documentation, letter symbols, and other means of expression, units of measurements, etc., in order to be used in all Study Group documents.
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## RESOLUTION ITU-R 37

### **Radiowave propagation studies for system design and service planning**

(1995)

The ITU Radiocommunication Assembly,

*considering*

- a) that Radiocommunication Study Group 3 has the task of taking account of the characteristics and variability of radiowave propagation and of advising on prediction procedures suitable for use in service planning and performance evaluation;
- b) that since propagation characteristics depend on geographical location, climate, local environment and atmospheric variability, the development of propagation prediction procedures by Radiocommunication Study Group 3 relies, *inter alia*, on the availability of measurement data and the maintenance of calibrated databanks;
- c) that the acquisition of measurement data, and their subsequent use by Radiocommunication Study Group 3 in the development and improvement of prediction procedures, is a medium- to long-term process,

*recognizing*

- a) that the service Radiocommunication Study Groups often have short-term needs for information for new systems and networks;
- b) that, when designing such systems, relevant propagation data are sometimes submitted directly to the Radiocommunication Study Group concerned;
- c) that these data, whilst fulfilling a particular short-term need, may be of limited value in other circumstances and may require further analysis prior to their use in studies on propagation prediction method development for other applications,

*resolves*

- 1** that, whenever possible, Radiocommunication Study Group 3 should be consulted on the most appropriate propagation information for each purpose that arises, where a current Recommendation may not seem to be wholly applicable;
- 2** that all input contributions to other Study Groups which contain propagation information should be referred to Radiocommunication Study Group 3, so that, in addition to the value of the contribution to the work of the other Study Group, the information may also be used in the future work of Radiocommunication Study Group 3;
- 3** that the series of Questions assigned to Radiocommunication Study Group 3 should be examined by all Study Groups to identify where additional study topics are required.

## RESOLUTION ITU-R 38-3

### Study of regulatory/procedural matters

(1995-1997-2000-2003)

The ITU Radiocommunication Assembly,

*considering*

- a) that the ITU Convention includes among the functions of Radiocommunication Study Groups the study of technical, operational and procedural matters to be considered by World and Regional Radiocommunication Conferences (CV156);
- b) that the Radiocommunication Assembly, 1995 (Resolution ITU-R 38) established a Special Committee to deal with matters relating to regulatory/procedural issues as part of preparations for World Radiocommunication Conferences;
- c) that the Special Committee to deal with matters relating to regulatory/procedural issues has undertaken valuable work in preparation for World Radiocommunication Conferences (WRCs);
- d) that a significant body of work of a regulatory/procedural nature might be identified in preparation for a future WRC and/or Regional Radiocommunication Conference (RRC);
- e) that a mechanism should be put in place to facilitate such preparations,

*recognizing*

- a) that the activation of that mechanism shall be the responsibility of the relevant WRC or RRC, according to the case or the first session of the Conference Preparatory Meeting (CPM),

*resolves*

- 1** to maintain the infrastructure of the Special Committee to address the review of regulatory/procedural matters, the results of which may be used by administrations in their preparation for the relevant WRC or RRC, according to the case;
- 2** that a decision to activate this Special Committee should be taken by a WRC or RRC, according to the case or the first session of the CPM authorized by the WRC;
- 3** that the results of the studies by the Special Committee shall be contained in reports as contributions to the work of the CPM in preparing its report to the relevant WRC or RRC, according to the case;
- 4** that the Special Committee shall be open to all the membership of the ITU-R;
- 5** that the Special Committee shall adopt the working methods of the Radiocommunication Study Groups wherever applicable, and shall be task oriented;
- 6** that the Special Committee shall identify suitable options for completing agenda items assigned to it by the CPM-1, if applicable, and, where appropriate, to draft example regulatory text in accordance with those options;
- 7** that the Special Committee will have a Chairman and at least two Vice-Chairmen appointed by a Radiocommunication Assembly,

*instructs the Director*

- 1** to draw the attention of the next WRC and RRC to this Resolution and invite the Conference or the first session of the CPM authorized by the WRC to identify whether there is likely to be a sufficient body of work of a regulatory/procedural nature in preparation for the following WRC or the subsequent session of RRC, according to the case to justify activating the Special Committee, and if so to task the Special Committee by identifying those agenda items for which attention will need to be given to regulatory/procedural aspects, thereby forming the primary basis of activity of the Special Committee;
  - 2** to take the necessary measures to activate the Special Committee, if needed.
-

## RESOLUTION ITU-R 40-2\*

### Worldwide databases of terrain height and surface features

(1997-2003-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that there is a requirement for planning purposes for improved worldwide methods of predicting field strength which take account of terrain height and surface features (including ground cover such as buildings, vegetation, etc.);
- b) that digital maps of terrain height are now becoming widely available with various data formats and resolutions, and that maps with 3 arc second resolution in latitude and longitude are available on a global basis. Digital maps with better resolution are becoming available nationally;
- c) that propagation predictions may be improved by the inclusion of more detailed information on terrain heights and surface features;
- d) that the availability of digital maps of terrain height and surface features would be of considerable benefit to developing countries in the planning of their existing and newly introduced services;
- e) that the use of terrain height data may optimize technical studies;
- f) that Radiocommunication Study Group 3 has an active work programme concerning the development of improved prediction methods,

*resolves*

- 1 that a terrain database with a 1 arc second horizontal resolution in latitude and longitude is more suitable for worldwide methods of propagation prediction in the frequency range from 30 MHz to 60 GHz;
- 2 that administrations should review the terrain data available in this format, and should provide additional data so as to complete the worldwide extent of the database;
- 3 that administrations should be encouraged to make these terrain databases freely available for ITU purposes;
- 4 that administrations should encourage organizations involved in the production of terrain maps to produce databases of terrain height and surface features with a resolution equal to, or better than, 1 arc second for areas for which such data do not exist;
- 5 that administrations are encouraged to use terrain height for radio propagation prediction;
- 6 that terrain heights should be used according to ITU-R Recommendations.

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\* This Resolution should be brought to the attention of Radiocommunication Study Group 1 for consideration of the use of a terrain database for national spectrum management purposes.

This Resolution should also be brought to the attention of the Telecommunication Development Sector.

## RESOLUTION ITU-R 43

### **Rights of Associates**

(2000)

The ITU Radiocommunication Assembly,

*considering*

- a) that the rapid pace of change in the radiocommunication environment and industry groups dealing with radiocommunications encourages the increased participation of interested entities and organizations in radiocommunication activities;
- b) that entities or organizations with highly focused areas of activity may be interested only in a small part of the radiocommunication activities but may be discouraged from doing so by the financial obligation incurred by Sector Members;
- c) that Article 19 of the ITU Convention enables the Radiocommunication Sector to admit entities or organizations to participate as Associates in the work of a given Study Group or subgroups thereof;
- d) that Articles 19, 20 and 33 of the Convention contain provisions relevant to the participation of Associates,

*resolves*

- 1** that interested entities or organizations may join the Radiocommunication Sector as Associates, and be entitled to take part in the work of a selected single Study Group and its subordinate groups;
- 2** that Associates may take part in the process of preparing recommendations within a single Study Group, including the roles of participating in meetings, submitting contributions and providing comments before the adoption of Recommendations, if any;
- 3** that Associates shall be granted access to all Study Group documentation in their chosen Study Group and other Study Groups as required by the work programme;
- 4** that Associates shall not be involved in voting for, or approval of Questions and Recommendations;
- 5** that an Associate may serve as Rapporteur (see § 2.11 of Resolution ITU-R 1), within the selected Study Group, except for liaison activities which are to be handled separately,

*invites*

- 1** the Council to determine a financial contribution for Associate membership to share in defraying the expenses of the Radiocommunication Sector and the Study Group concerned as asked for by Article 33 of the Convention and promote wider participation,

*instructs the Director of the Radiocommunication Bureau*

- 1** to take the necessary steps to implement this Resolution as soon as practicable.

## RESOLUTION ITU-R 45-1

### **Application of an alternative approval procedure (AAP) for Recommendations**

(2000-2003)

The ITU Radiocommunication Assembly,

*considering*

- a) that an alternative procedure for the approval of Recommendations to facilitate the work of the Radiocommunication Sector has been envisaged by the Plenipotentiary Conference (Minneapolis, 1998);
- b) that Resolution 82 of the Plenipotentiary Conference (Minneapolis, 1998) invites each Sector to develop its own procedures, if appropriate, for approving Questions and Recommendations using an alternative approval process;
- c) that No. 246A of the ITU Convention indicates that: Member States and Sector Members shall adopt Questions to be studied in accordance with procedures established by the relevant conference or assembly, as appropriate, including the indication whether or not a resulting Recommendation shall be the subject of a formal consultation of Member States;
- d) that No. 246B further states that: Recommendations resulting from the study of the above Questions are adopted by a Study Group in accordance with procedures established by the relevant conference or assembly, as appropriate. Those Recommendations which do not require formal consultation of Member States for their approval shall be considered as approved;
- e) that Nos. 246D, 246E and 246H indicate that the provisions noted above shall not be used for questions and recommendations having policy or regulatory implications such as:
  - Questions and Recommendations approved by the Radiocommunication Sector relevant to the work of radiocommunication conferences, and other categories of Questions and Recommendations that may be decided by the Radiocommunication Assembly;
  - Questions and Recommendations where there is any doubt about their scope;
- f) that the Radiocommunication Sector has successfully applied the alternative procedure a number of times since this Resolution was first established,

*resolves*

- 1** that the alternative procedure established under this Resolution belongs as a permanent and definitive part of the approval processes used within the Sector;
- 2** that the procedure set out below shall be used for the alternative approval of Recommendations;
- 3** that draft Recommendations, resulting from studies of those Questions identified without opposition in Resolution ITU-R 5 at a Radiocommunication Assembly, or those Questions approved without opposition by correspondence, as being suitable for the alternative procedure between radiocommunication assemblies, shall be considered by the Study Group as follows:

**3.1** if the Study Group decides that, despite the previous identification of the Question as being suitable for the alternative procedure, the draft Recommendation has some policy or regulatory implication, then the Recommendation shall be considered for adoption and approval according to the provisions in § 10 of Resolution ITU-R 1;

**3.2** if the Study Group unanimously considers that § 3.1 above, does not apply (i.e. that the Recommendation is suitable for the alternative procedure), then the Recommendation should be considered for adoption using the procedure in § 10.2.3 of Resolution ITU-R 1;

**3.3** Recommendations adopted under § 3.2 above shall be considered as approved. The provisions of § 10.4.5.6 to § 10.4.9 of Resolution ITU-R 1 should apply to Recommendations approved in this way.

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RESOLUTION ITU-R 47-1\*

**Future submission of satellite radio transmission technologies for IMT-2000**

(2000-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that Resolution ITU-R 56 provides that the term “IMT” is the root name that encompasses both IMT-2000 and IMT-Advanced collectively, and that the term “IMT-2000” encompasses also its enhancements and future developments
- b) that universal coverage and seamless global roaming are key IMT objectives, and the satellite component of IMT-2000 will form an essential part in realizing the complete IMT-2000 vision;
- c) that IMT systems are defined by a set of interdependent ITU Recommendations to allow for the introduction into service of IMT subject to user demand
- d) that Recommendation ITU-R M.1034 describes each of the various IMT-2000 satellite radio operating environments;
- e) that the design of satellite Radio Transmission Technologies (RTTs) is based on an extensive range of technical and economical factors, some of which are in common with terrestrial technologies, some are unique to satellite technologies and some require different consideration when applied to satellite technologies;
- f) that following evaluation by the ITU-R, seven satellite RTTs have been adopted as satisfying the evaluation requirements for IMT-2000;
- g) that IMT radio interfaces have been designed to be flexible and are expected to accommodate service requirements for an extended period,

*further considering*

- a) that since satellite systems are particularly resource limited (for example, power and spectrum), satellite RTTs are optimized to the specific scenarios under which the satellite system will be operating and the market and environments to be served;
- b) that, while a prime objective for IMT-2000 has been to minimize the number of radio interfaces, because of the constraints on satellite system design and deployment, a number of satellite RTTs may be required for IMT-2000 (see Recommendation ITU-R M.1167);
- c) that the set of services provided by IMT-2000 service providers and/or operators using a particular satellite system in a given environment is impacted by the particular design constraints for the radio interface for that system;

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\* This Resolution should be brought to the attention of Telecommunication Standardization Study Groups 13 and 19 and the Telecommunication Standardization Advisory Group (TSAG).



- d) that Recommendation ITU-R M.816 recognizes that there may be later phases of IMT-2000 implementation with respect to high data rate of portable computing users and support of enhanced multimedia communications requirements, and further, that other service objectives may be identified in the work of ITU-R and ITU-T;
- e) that for the satellite operating environments shown in Recommendation ITU-R M.1034, the choice of satellite constellation impacts on how operational requirements are met, but for several satellite systems under development choices of the specific satellite constellations have not yet been finalized;
- f) that in Recommendation ITU-R M.1034, the operational scenario includes operation across various IMT-2000 radio operating environments, operation across multiple IMT-2000 operators and multiple types of IMT-2000 operators, and that there may be more than one type of satellite system within IMT-2000 each having a different internal configuration and different ownership;
- g) that as satellite system optimization and development proceeds, in order to adapt to changes in market demands, business objectives, technology developments, and operational needs, and as commonalities with the terrestrial component of IMT are maximized as appropriate, it may be necessary to modify/update relevant ITU-R Recommendations,

*resolves*

- 1 that a proponent with a proposal for a new satellite RTT for IMT-2000 should submit the proposal to the ITU in accordance with Recommendation ITU-R M.1225;
- 2 that three (3) months later, the proponent that submitted an RTT, should submit a self-evaluation report to the ITU, taking into account Recommendation ITU-R M.1225;
- 3 that, based on evaluation reports received from the proponent and other evaluation groups established by Administrations of Member States of the ITU and ITU Sector Members, the ITU-R should evaluate the proposed RTT in relation to Recommendation ITU-R M.1225 and the criteria in Annex 1 below as to whether it qualifies as an IMT-2000 satellite radio interface;
- 4 that as soon as possible, the proponent that submitted a satellite RTT that qualifies as an IMT-2000 satellite radio interface should submit to the ITU the information needed to up-date Recommendation ITU-R M.1457;
- 5 that once this evaluation process is completed by the ITU-R the new satellite radio interface should be entered into Recommendation ITU-R M.1457,

*further resolves*

- 1 that modifications of existing satellite radio interfaces should be submitted to the ITU through an Administration of Member States of the ITU or an ITU Sector Member and after a review by the ITU-R, the modifications should be entered into Recommendation ITU-R M.1457,

*instructs the Director of the Radiocommunication Bureau*

- 1 to inform the Administrations of Member States of the ITU and ITU Sector Members via a Circular Letter of any submission made according to *resolves* 1, and invite evaluation reports based on Recommendation ITU-R M.1225 to be submitted to the ITU within three (3) months of the date of the Circular Letter;
- 2 to implement suitable procedures to meet the requirements of *resolves* 3 above;
- 3 to review the procedures established in respect of this Resolution prior to the next Radiocommunication Assembly.

## **Annex 1**

### **IMT-2000 satellite RTT evaluation criteria**

The minimum performance capability for data services (excluding paging) is a user bit rate of 9.6 kbit/s. However, proponents are encouraged to provide higher user bit rates for applications involving vehicular or nomadic terminals.

Handover is required within a satellite system due to the relative movement between the terminal and the satellite spot beam.

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RESOLUTION ITU-R 48-1

**Strengthening the regional presence in  
the Radiocommunication Study Group work**

(2000-2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that the rights and obligations of Member States and Sector Members are stated in Article 3 of the ITU Constitution and that this includes rights of equal access to participation in the work of ITU-R;
- b) that the Plenipotentiary Conference (Antalya, 2006) modified Resolution 25 directing a greater regional presence in the work of ITU;
- c) the difficulty that many developing countries, and countries remote from Geneva, have in participating in the work of Radiocommunication Study Groups,

*considering further*

- a) that the ITU regional presence should be viewed as an asset to the Union rather than as a liability,

*recognizing*

- a) the difficulty faced by many countries, particularly developing countries with stringent budgetary constraints, in participating in the activities of ITU-R, including the Radiocommunication Study Group meetings;
- b) the decision by the World Radiocommunication Conference, in its Resolution 72 (Rev.WRC-2000), and by the Plenipotentiary Conference, in its Resolution 80 (Rev. Marrakesh, 2002), to instruct the Director of Radiocommunication Bureau to carry out consultations on the means by which assistance can be given to their preparations for future world radiocommunication conferences, and that a significant component of such preparations is done in Radiocommunication Study Groups;
- c) that the resources of the ITU-R and the membership are limited, and that efficiency and effectiveness are therefore key considerations for activities to be undertaken by ITU,

*noting*

- a) that Resolution 25 (Rev. Antalya, 2006) of the Plenipotentiary Conference, which defined the general functions of the regional presence and called for a detailed evaluation of regional presence, with a view to improving its structure and management;
- b) the confirmation by recent Council sessions, stressing the need to adapt the organization and activities of the regional presence to the requirements and priorities of each region, as well as the need to strengthen the regional presence by enhancing its usefulness and effectiveness in all the regions of the world, particularly by broadening the range of its activities, where appropriate, to encompass all the activities undertaken by ITU,

*resolves*

- 1** to request the Director of Radiocommunication Bureau to collaborate in the implementation of Resolution 25 (Rev. Antalya, 2006), in particular in the evaluation, in order to meet the objectives of strengthening the regional presence;
  - 2** to cooperate with the Director of Telecommunication Development Bureau in enhancing the ability of the ITU regional and area offices to provide support for Study Group activities, as well as the necessary expertise, to strengthen cooperation and coordination with the relevant regional organizations and to facilitate the participation of all Member States and Sector Members in the activities of ITU-R.
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## RESOLUTION ITU-R 50-1

### **Role of the Radiocommunication Sector in the ongoing development of IMT**

(2000-2007)

The Radiocommunications Assembly,

*considering*

- a) that the scope of the ITU as a whole, and of the standardization activities within the ITU in particular, is very important to the expanding wireless industry;
- b) that close coordination at the working level between ITU-R and ITU-T should be encouraged;
- c) that Resolution ITU-R 56 provides that the term “IMT” is the root name that encompasses both IMT-2000 and IMT-Advanced collectively,

*noting*

- a) Resolution ITU-R 6 on liaison and collaboration with the ITU Telecommunication Standardization Sector;
- b) Resolution ITU-R 9 on liaison and collaboration with other recognized external organizations,

*resolves*

- 1** that a roadmap for ITU-R activities on IMT be developed by the relevant Radiocommunication Study Group to ensure that this work is progressed effectively and efficiently with organizations external to the ITU;
- 2** that the effective coordination currently established between the ITU-T and ITU-R for IMT, Mobile Telecommunication Networks and Next Generation Networks activities be continued,

*invites*

- 1** the Telecommunications Standardization Sector to develop a complementary roadmap for all ITU-T IMT activities, and to coordinate it with ITU-R to ensure full alignment and harmonization of the work programmes of both ITU-T and ITU-R,

*instructs the Director of the Radiocommunication Bureau*

- 1** to bring this Resolution to the attention of the Telecommunication Standardization Advisory Group and World Telecommunication Standardization Assembly for their consideration and possible action.

## RESOLUTION ITU-R 52

### **Authorization for the Radiocommunication Advisory Group (RAG) to act between Radiocommunication Assemblies (RAs)**

(2003)

The ITU Radiocommunication Assembly,

*considering*

- a) that the Radiocommunication Advisory Group can help to improve coordination of the study process and provide improved working and decision-making processes for the important areas of ITU-R activities;
- b) that, under Article 8 No. 137A of the ITU Convention, adopted by the Plenipotentiary Conference (Rev. Marrakesh, 2002)\* a “Radiocommunication Assembly may assign specific matters within its competence, except those relating to the procedures contained in the Radio Regulations to the Radiocommunication Advisory Group, indicating the action required on those matters”;
- c) that the Radiocommunication Sector has adopted detailed procedures for the approval of Recommendations by correspondence that take into account the fact that the vast majority of ITU-R Recommendations may have policy or regulatory implications and, in conformity with Convention Article 20, are of interest to all Member States,

*further considering*

that the RAG is tasked under Article 11A (Rev. Marrakesh, 2002) of the ITU Convention with reviewing the implementation of the operational plan and advising the Director on necessary corrective measures,

*noting*

that pursuant to Article 11A (Minneapolis, 1998) of the ITU Convention, the RAG shall also review any specific matter directed by a conference of the Union, including a World Radiocommunication Conference, a Radiocommunication Assembly or the Council,

*conscious*

of the fact that the four-year interval until the next Radiocommunication Assembly could effectively preclude the possibility of addressing unforeseen issues requiring urgent action in that period,

*resolves*

**1** to assign, in addition to the provisions of Article 11A, the following specific matters within its competence to the RAG between this Assembly and the next Assembly, and that the RAG should also take into account any specific matters as directed by a WRC to the RAG:

- maintain up-to-date, efficient and flexible working procedures in accordance with Resolutions and decisions approved by the Radiocommunication Assembly;

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\* In force starting 1 January 2004.

- consider and recommend modifications to the programme of work, in relation to the strategic and operational plans;
- keep under review the activities of the Radiocommunication Study Groups;
- decide on the need to maintain, terminate or establish groups other than Study Groups, CCV, Conference Preparatory Meeting (CPM) or Special Committee on regulatory/procedural matters (SC), and appoint their Chairmen and Vice-Chairmen, in accordance with CV136A and CV136B (Marrakesh, 2002);
- consider other specific matters within the competence of the Radiocommunication Assembly, subject to prior consultation with, and to the unopposed agreement of, the Member States;

**2** when dealing with these matters, the decisions taken in the RAG meetings shall be unopposed by any Member State,

*invites the RAG*

**1** in accordance with CV160G, to develop its own working procedures compatible with those adopted by the Radiocommunication Assembly;

**2** to report to the next Radiocommunication Assembly on the results of implementing this Resolution.

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## RESOLUTION ITU-R 53

### **The use of radiocommunications in disaster response and relief**

(2007)

The ITU Radiocommunication Assembly,

*considering*

- a) the importance of disaster management telecommunications/information techniques in providing protection and relief for life and property, subjected to the effects of disasters, particularly at regional and subregional levels in developing countries;
- b) Resolution 136 (Antalya, 2006) of the Plenipotentiary Conference on the use of telecommunications/information and communication technologies for monitoring and management in emergency and disaster situations for early warning, prevention, mitigation and relief,

*considering further*

- a) Resolution 36 (Rev. Antalya, 2006) of the Plenipotentiary Conference on Telecommunications/information and communication technologies in the service of humanitarian assistance;
- b) Resolution 34 (Rev.Doha, 2006) of the World Telecommunication Development Conference on the role of telecommunications/information and communication technology in early warning and mitigation of disasters and humanitarian assistance, as well as the activities being undertaken within Programme 6 – Least Developed Countries and Small Island Developing States and Emergency Communications of the Doha Action Plan;
- c) that recent major disasters have highlighted a requirement for rapid spectrum coordination in the initial stages of the provision of humanitarian assistance to disaster-affected areas;
- d) the welcome initiative of the Secretary-General to create the ITU Inter-sectoral Emergency Communications Team (IECT) to promote coordination and collaboration on emergency communications issues across ITU,

*recognizing*

- a) that disaster response and management comprise a number of different but equally important aspects, such as early warning, prevention, mitigation and relief;
- b) that it is vital that the various necessary radio systems be managed cooperatively amongst administrations in order to predict, detect, mitigate and respond effectively to disaster event situations;
- c) that communication requirements in support of disaster relief, especially in the early stages of relief operations, include the provision of *in situ* terrestrial and satellite communication systems to aid in securing and stabilizing life and property in the disaster-affected area, and that such communication mechanisms must be able to operate without suffering from, or causing, harmful radio-frequency interference;



d) that disaster situations may occur that render a State unable to provide the necessary spectrum regulatory and management support required for effective relief operations for its citizens, and that the development of standard operating procedures and associated spectrum management mechanisms for use in such an event is an important element of emergency planning<sup>1</sup>,

*bearing in mind*

that spectrum management is a State's sovereign right and responsibility,

*taking into account*

- a) Resolutions 644 and 646 of the World Radiocommunication Conference;
- b) other relevant Resolutions adopted by WRC-07,

*emphasizing*

that ITU-R Study Groups have an important role in disaster management through their technical and operational studies and recommendations that support disaster prediction, detection, mitigation and response activities critical to minimizing the loss of life and property and for providing relief to disaster affected areas,

*resolves*

that, given the importance of the effective use of the radio-frequency spectrum for radiocommunications in disaster situations, the concerned ITU-R study groups undertake studies and develop guidelines related to the management of radiocommunications in disaster prediction, detection, mitigation and relief collaboratively and cooperatively within ITU and with organizations external to the Union,

*instructs the Director of the Radiocommunication Bureau*

- 1** in collaboration with the other two Sectors to assist Member States with their emergency radiocommunication preparedness activities such as a listing of currently available frequencies for use in emergency situations for inclusion in a database maintained by the Bureau;
- 2** in consultation with other international organizations, such as the United Nations Office for the Coordination of Humanitarian Affairs, the Working Group on Emergency Telecommunications (WGET) and taking into account the results of studies above, to assist with the development and dissemination of standard operating procedures for spectrum management in the event of disaster situation.

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<sup>1</sup> Taking into account, for example, the ITU-R Special Supplement on emergency and disaster relief.

RESOLUTION ITU-R 54

**Studies to achieve harmonization for short-range  
radiocommunication devices (SRDs)**

(2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that there is increasing demand for, and use of short-range radiocommunication devices (SRDs) for a wide variety of applications throughout the world;
- b) that such devices generally operate with low power;
- c) that, according to operational requirements, the radio parameters for such devices vary;
- d) that the implementation of regulations for SRDs is a matter for national administrations;
- e) that national regimes for implementation are in general as simple as possible, in order to minimize the burden on administrations and users of SRDs;
- f) that in general such devices shall neither cause harmful interference to, nor claim protection from, any service operating in accordance with the Table of Frequency Allocations;
- g) that, by their nature, SRDs are being used on a worldwide basis, either as an independent device or as an integral part of other systems, and are often carried and used across national borders;
- h) that some agreements have been reached by some groups' administrations, resulting in the mutual recognition of certified measurement laboratories,

*recognizing*

- a) the benefits such as:
  - increased potential for interoperability;
  - a broader manufacturing base and increased volume of equipment, resulting in economies of scale and expanded equipment availability;
  - improved spectrum management and planning by each administration/region; and
  - enhanced cross-border arrangements and circulation of equipment;
- b) that the trend is to increase the use of advanced spectrum access and interference mitigation technologies,

*noting*

- a) that information about the technical and operating parameters and spectrum requirements for short-range radiocommunication devices is given in Recommendation ITU-R SM.1538;
- b) that Recommendation ITU-R SM.1538 is still a compilation of technical and operational parameters as they are in use in various countries or regions of the world, and rarely specifies common parameters for use throughout the world,

*resolves*

- 1 that ITU-R, taking into account “*considering f*”, continue its studies to enable implementation of advanced technologies for SRDs, thereby in particular focusing on a strategy for the future;
  - 2 that in particular the following studies should be conducted:
    - a) to collect information on SRDs which use advanced spectrum access and frequency tuning range techniques in order to understand their capabilities, meanwhile ensuring protection to radiocommunication services;
    - b) to advise on a mechanism, based on 2 a) above, that may ease the use of relevant frequency bands and/or frequency tuning ranges, preferably on a global or regional basis, suitable for SRDs;
  - 3 to invite the membership to contribute to these studies.
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## RESOLUTION ITU-R 55

### **ITU studies of disaster prediction, detection, mitigation and relief**

(2007)

The ITU Radiocommunication Assembly,

*considering*

- a) the importance of radiocommunication systems in assisting disaster management through techniques for early warning, prevention, mitigation and relief;
- b) that ITU-R Study Groups play an important role in disaster management, particularly in the prediction, detection, mitigation and relief activities necessary to survive the event and to minimize the loss of life and property;
- c) that each ITU-R Study Group brings expertise to the complex mechanisms required to provide relief for the affected area;
- d) that it is vital for the various necessary radio systems to have access to the radio spectrum, in order to effectively predict, detect, mitigate and relieve disaster event situations,

*noting*

- a) Resolution 34 (Rev.Doha, 2006) of the World Telecommunication Development Conference on the role of telecommunications/information and communication technology in early warning and mitigation of disasters and humanitarian assistance;
- b) paragraph 91c) of the Tunis Agenda of the World Summit on the Information Society (WSIS) which states: “Working expeditiously towards the establishment of standards-based monitoring and worldwide early-warning systems linked to national and regional networks and facilitating emergency disaster response all over the world, particularly in high-risk regions”,

*taking into account*

- Resolution ITU-R 53 on the use of radiocommunications in disaster response and relief;
- other relevant Resolutions adopted by WRC-07,

*recognizing*

- a) Resolution 136 (Antalya, 2006) of the Plenipotentiary Conference on the use of telecommunications/information and communication technologies for monitoring and management in emergency and disaster situations for early warning, prevention, mitigation and relief resolved to instruct the Directors of the Bureaux:
  - 1) to continue their technical studies and to develop recommendations, through the ITU Study Groups, concerning technical and operational implementation, as necessary, of advanced solutions to meet the needs of public protection and disaster relief telecommunications/ICTs, taking into account the capabilities, evolution and any resulting transition requirements of existing systems, particularly those of many developing countries, for national and international operations;

- 2) to support the development of robust, comprehensive, all-hazards emergency and disaster early-warning, mitigation and relief systems, at national, regional and international levels, including monitoring and management systems involving the use of telecommunications/ICTs (e.g. remote sensing), in collaboration with other international agencies, in order to support coordination at the global and regional level;
  - 3) to promote implementation by appropriately alerting authorities of the international content standard for all-media public warning, in concert with ongoing development of guidelines by all ITU Sectors for application to all disaster and emergency situations;
  - 4) to continue to collaborate with organizations that are working in the area of standards for emergency telecommunications/ICTs and for communication of alert and warning information, in order to study the appropriate inclusion of such standards in ITU's work and their dissemination, in particular in developing countries;
- b) that disaster management in the field of radiocommunications comprises the following, equally important, aspects:
- 1) early warning and prevention, through:
    - disaster prediction, including the acquisition and processing of data concerning the probability of future disaster occurrence, location and duration;
    - disaster detection, including the detailed analysis of the topical likelihood and severity of a disaster event;
  - 2) disaster mitigation including the rapid promulgation of imminent disaster information and corresponding alerts to disaster relief agencies;
  - 3) post-disaster relief radiocommunications, including the provision of *in situ* terrestrial and satellite communication systems to aid in securing and stabilizing life and property in the affected area,

*recognizing further*

that, generally, the mitigation of a disaster event on the territory of a developed country may have less of an impact on the local economy than that of a similar disaster event on the territory of a developing country,

*resolves to invite*

the Study Groups to take into consideration the scope of ongoing studies/activities outlined in Annex 1 and information provided by the Bureau on related activities of the other two Sectors and the General Secretariat, in the development of their work programmes in order to avoid duplication of effort.

## Annex 1

### **The scope of ongoing studies/activities within each pre-Radiocommunication Assembly 2007 Study Group in support of disaster prediction, detection, mitigation or relief radiocommunication systems**

- SG 1 Studies on spectrum management aspects and requirements in support of disaster radiocommunications fall within the scope of Study Group 1. Considering that administrations may have different operational needs and spectrum requirements, depending on circumstances, there is a need to define the appropriate mechanism(s) for the identification and registry of spectrum resources. Exploration of monitoring techniques is another key responsibility of SG 1 and such work could be especially beneficial when applied to all phases of disaster radiocommunications (prediction, detection, mitigation, and relief).
- SG 3 Study Group 3 will undertake the necessary studies to assess the propagation conditions for the frequency bands and services used for disaster warning and disaster relief, especially those identified as regionally harmonized bands (Res. 646 (WRC-03)). It will further study possible changes in the local propagation conditions associated with the disaster itself.
- SG 4 In the event of natural disasters, epidemics and famines, etc., there is an urgent need for a reliable communication link for use in relief operations. Satellite appears as the most appropriate means to quickly set up a communication link with remote facilities. Assuming the system is to operate in the fixed-satellite service (FSS), it is desirable that a small earth station, such as a fixed VSAT, a vehicle-mounted earth station or a transportable earth station, with access to an existing satellite system, should be available for transportation to, and installation at, the disaster area. It is also desirable that the system relies on widespread standards so that equipment is readily available and interoperability and reliability are ensured.
- Study Group 4 is working on these issues and has completed work on revised Recommendation ITU-R S.1001-1 "Use of systems in the fixed-satellite service in the event of natural disasters and similar emergencies for warning and relief operations" which provides guidelines on the use of satellite networks in the event of natural disasters and similar emergencies. This Recommendation provides information about the overall system and terminal design which is suitable for disaster relief telecommunication.
- SG 6 The Study Group initially focused on the means by which the broadcasting-satellite service (BSS) can assist in warning the public of impending disasters and in disseminating information relating to relief operations, followed by the approval of Question ITU-R 118/6, entitled "Broadcasting means for public warning and disaster relief". In response, the Study Group has developed Recommendation ITU-R BO.1774/BT.1774 on the use of satellite and terrestrial broadcast infrastructures for public warning, disaster mitigation and relief, the aim of which is to help permit the rapid deployment of equipment and networks currently available in the terrestrial and satellite-broadcasting services. These services can provide means for alerting the public, for informing them of preventive measures and for disseminating information on the coordination of rescue procedures. The Recommendation gives technical guidance on the improved usage of terrestrial and satellite broadcast services in cases of natural disasters.

Study Group 6 continues to work on these issues and has completed work on revised Question ITU-R 118-1/6, entitled “Broadcasting means for public warning, disaster mitigation and relief” and revised Recommendation ITU-R BO.1774-1/BT.1774-1, the latter containing additional information regarding an emergency warning system (EWS).

SG 7 Disaster prediction and detection are major fields of study within Study Group 7. Utilizing remote sensing systems (both passive and active), operating in frequency bands pre-determined by the laws of physics, Study Group participants acquire, analyse and process the data that provides prediction and detection of meteorological and climatic conditions that are the basis for major natural disasters.

Disaster mitigation is aided by the provision of high-technology satellite communication systems developed by other Study Group participants including technologies such as tracking and data relay satellites.

The Study Group works closely with ITU-D and is currently responding vigorously to ITU-D Question 22/2.

SG 8\* The mobile, mobile-satellite, amateur and amateur-satellite services have proven to be of huge importance in the fields of disaster prediction, detection, mitigation and relief.

Like broadcasting, mobile service cellular applications may be used in an early warning system, as they enable authorities to establish direct contact with the citizens having a mobile receiver.

The maritime mobile service is familiar with the Global Maritime Distress and Safety System (GMDSS).

Disasters may demolish radiocommunication infrastructures; in such cases mobile-satellite service applications can still be used. Also the amateur and amateur-satellite services enable communication links in areas affected by natural disasters to be maintained.

Study Group 8 is working on these issues via Study Questions ITU-R:

209-2/8 – Contributions of the mobile and amateur services and associated satellite services to the improvement of disaster communications;

227/8 – Technical and operational characteristics of emergency communications in the mobile-satellite service.

SG 9\* Study Group 9 has approved two new Questions (ITU-R 238/9 and ITU-R 239/9) dealing with the field of disaster mitigation and relief. These involve the study of fixed wireless service systems, with particular emphasis on the MF/HF bands, that can be used to assist in disaster mitigation and relief operations. In addition, SG 9 has revised Recommendation ITU-R F.1105 (fixed wireless systems for disaster mitigation and relief operations) with the addition of an appendix on a Regional Digital Simultaneous Communication System (RDCSS). This RDCSS can be used to collect data or information relating to disaster by a central system for subsequent transmission (of alerts) to residents. It also provides simultaneous individual or group communications between the central station and residents. There are also Reports ITU-R F.2061 and ITU-R F.2087 which discuss the role of HF radiocommunication systems in disaster relief operations.

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\* Studies to continue as relevant in Study Groups 4 and 5.

## RESOLUTION ITU-R 56\*

### **Naming for International Mobile Telecommunications**

(2007)

#### **Introduction**

International Mobile Telecommunications-2000 (IMT-2000) systems provide access to a wide range of telecommunication services, supported by the fixed telecommunication networks (e.g. PSTN/ISDN/IP), and to other services which are specific to mobile users.

To meet the ever increasing demands for wireless communication, and the expected higher data rates needed to meet user demands, IMT-2000 is being continually enhanced and systems beyond IMT-2000 are envisaged. The framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000 are described in Recommendation ITU-R M.1645.

Resolution 228 (Rev.WRC-03) notes that appropriate naming is to be developed for the future development of IMT-2000 and systems beyond IMT-2000. Thus the term “systems beyond IMT-2000” has been used as a temporary name. This Resolution clarifies the relationship between the terms “IMT-2000” and “the future development of IMT-2000” and gives the new name to those systems, system components, and related aspects that include new radio interface(s) that support the new capabilities of systems beyond IMT-2000. Additional Recommendations and Reports will be developed to address other issues related to these systems in more detail.

#### **Related Recommendations**

- |                              |  |
|------------------------------|--|
| Recommendation ITU-R F.1399: | Vocabulary of terms for wireless access.   |
| Recommendation ITU-R M.1224: | Vocabulary of terms for International Mobile Telecommunications-2000 (IMT-2000).                           |
| Recommendation ITU-R M.1457: | Detailed specification of the radio interfaces of International Mobile Telecommunications-2000 (IMT-2000). |
| Recommendation ITU-R M.1645: | Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000.        |
| ITU-T Recommendation Q.1702: | Long-term vision of network aspects for systems beyond IMT-2000.   |

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\* This Resolution should be brought to the attention of ITU-T Study Group 19.

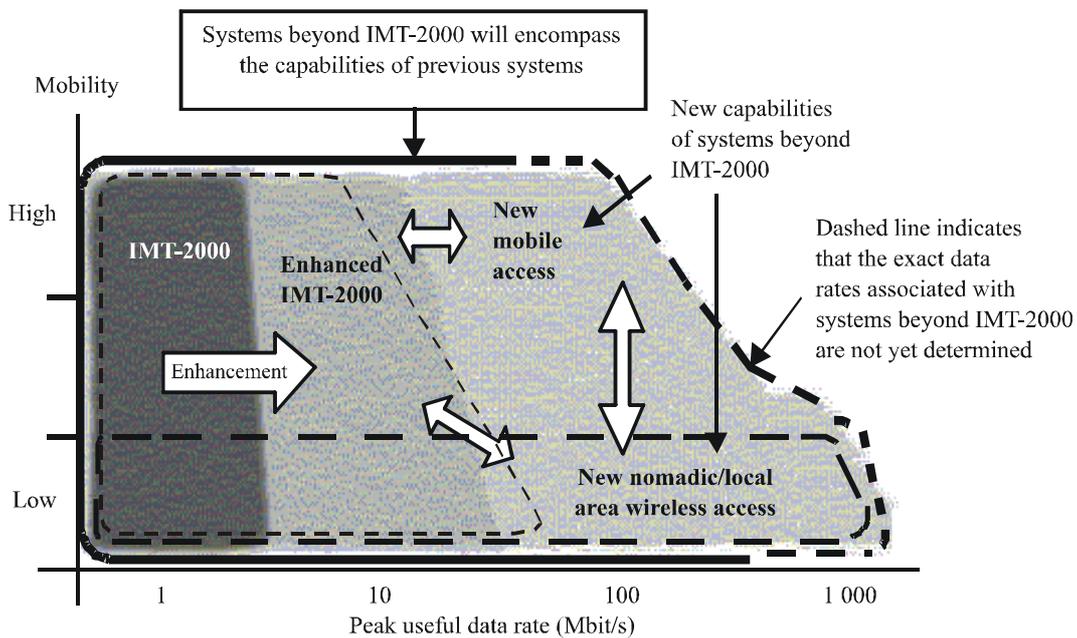


The ITU Radiocommunication Assembly,

*considering*

- a) Resolution 228 (Rev.WRC-03) *noting d*), which states “that ITU-R has already begun considering appropriate naming for the future development of IMT-2000 and systems beyond IMT-2000, for a decision in advance of WRC-07”;
- b) the framework for the future development of IMT-2000 and systems beyond IMT-2000 is described in Recommendation ITU-R M.1645, and Fig. 1 below, copied from this Recommendation, illustrates the capabilities of IMT-2000 and systems beyond IMT-2000;

FIGURE 1  
**Illustration of capabilities of IMT-2000 and systems beyond IMT-2000**



↔ Denotes interconnection between systems via networks, which allows flexible use in any environment without making users aware of constituent systems

⊖ Nomadic/local area access systems

⊖ Digital broadcast systems

Dark shading indicates existing capabilities, medium shading indicates enhancements to IMT-2000, and the lighter shading indicates new capabilities of systems beyond IMT-2000.

The degree of mobility as used in this Figure is described as follows: low mobility covers pedestrian speed, and high mobility covers high speed on highways or fast trains (60 km/h to ~250 km/h, or more).

1645-02

- c) that there is a need for a root name to cover the capabilities of “IMT-2000, future development of IMT-2000 and systems beyond IMT-2000”;
- d) that the use of “IMT-2000” remains the designation appropriate to describe IMT-2000;
- e) that developing a new term to identify the enhancements or future developments of IMT-2000, without any time limitation, would create confusion and is unnecessary;

- f) that the new name would benefit from not being time limited or date specific,  
*recognizing*
- a) that ITU is the internationally recognized entity that has sole responsibility to define and to recommend the standards and frequency arrangements for IMT systems, with the collaboration of other organizations such as standard development organizations, universities, industry organizations and with partnership projects, forums, consortia and research collaborations;
- b) that wireless access technologies that may address some of the capabilities of systems beyond IMT-2000 have been or are being developed for deployment within or prior to the timeframes expressed in Recommendation ITU-R M.1645;
- c) that ITU works globally in accordance with Resolution ITU-R 9-2 to create a unified wireless mobile communications future;
- d) that ITU may specify its processes and principles for the development of systems beyond IMT-2000;
- e) that the detailed specifications of the radio interfaces of International Mobile Telecommunications (IMT-2000) are defined in Recommendation ITU-R M.1457 and that future revisions of this Recommendation will also define the future development of IMT-2000;
- f) that Recommendations and Reports will be developed to define the radio interfaces of systems beyond IMT-2000, taking into consideration the framework established in Recommendation ITU-R M.1645, “Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000”,

*resolves*

- 1** that the term “IMT-2000” encompasses also its enhancements and future developments<sup>1</sup>;
- 2** that the term “IMT-Advanced” be applied to those systems, system components, and related aspects that include new radio interface(s) that support the new capabilities of systems beyond IMT-2000<sup>2</sup>; and
- 3** that the term “IMT” be the root name that encompasses both IMT-2000 and IMT-Advanced collectively.

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<sup>1</sup> The detailed specifications of the IMT-2000 radio interfaces are in Recommendation ITU-R M.1457.

<sup>2</sup> As described in Recommendation ITU-R M.1645, systems beyond IMT-2000 will encompass the capabilities of previous systems, and the enhancement and future developments of IMT-2000 that fulfil the criteria in *resolves* 2 may also be part of IMT-Advanced.

## RESOLUTION ITU-R 57

### **Principles for the process of development of IMT-Advanced**

(2007)

The ITU Radiocommunication Assembly,

*considering*

- a) that Resolution 228 (Rev.WRC-03) invites ITU-R to further study technical and operational issues relating to the future development of IMT-2000 and IMT-Advanced, and develop Recommendations and Reports as required;
- b) that Question ITU-R 229/8 addresses the future development of IMT-2000 and IMT-Advanced;
- c) that Recommendation ITU-R M.1645 defines the framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000 for the radio access network based on the global user and technology trends, and the needs of developing countries;
- d) that Resolution ITU-R 56 specifies the nomenclature for the future development of IMT-2000 and systems beyond IMT-2000 through names uniquely associated with the advancement and continuation of International Mobile Telecommunications (IMT);
- e) that the future development of IMT-2000 and IMT-Advanced is foreseen to address the need for higher data rates than those of currently deployed IMT-2000 systems;
- f) that, for global operation and economy of scale, which are key requirements for the success of mobile telecommunication systems, it is desirable to agree on a harmonized time-frame for developing common technical, operational and spectrum-related parameters of systems, taking account of relevant IMT-2000 and other experience;
- g) that maximizing the commonality between IMT-Advanced air interfaces may lead to reduced complexity and a lower incremental cost of multi-mode terminals;
- h) that consensus-building is used to facilitate agreements within ITU-R,

*noting*

- a) that pursuant to Article 44 of the ITU Constitution, Member States shall endeavour to apply the latest technical advances as soon as possible;
- b) that globally harmonized spectrum for IMT-Advanced is desirable;
- c) that the ITU process for IMT-2000 standardization has been essentially beneficial to the development of mobile telecommunications,

*recognizing*

- a) that ITU-R has policies regarding Intellectual Property Rights (IPR) as expressed in Resolution ITU-R 1 as well as in Administrative Circular CA/148 (dated 15 April 2005), in which “attention is drawn to the importance of early disclosure and declaration of patents in order to avoid potential problems in the approval and eventual application of ITU-R Recommendations”;

- b) that a consensus-building process should ensure the potential for wide industry support of the radio interfaces that are developed for IMT-Advanced and that there is an expectation that the development of candidate radio interface technologies will take into account the objectives recommended in Recommendation ITU-R M.1645;
- c) the importance of facilitating global circulation;
- d) that the IMT-Advanced standardization process should be streamlined to incorporate the latest technology innovations to address user needs;
- e) that the term “IMT-Advanced” be applied to those systems, system components, and related aspects that include new radio interface(s) that support the new capabilities of systems beyond IMT-2000<sup>1</sup>;
- f) that ITU is the internationally recognized organization that has sole responsibility to define and to recommend the standards and frequency arrangements for IMT systems, with the collaboration of other relevant organizations such as standard development organizations, universities, industry organizations and with partnership projects, forums, consortia and research collaborations;
- g) that wireless access technologies that may address some of the capabilities of systems beyond IMT-2000 have been or are being developed for deployment within or prior to the time-frames expressed in Recommendation ITU-R M.1645;
- h) that adequate spectrum identification on a global basis is a prerequisite for the success of the future development of IMT-2000 and systems beyond IMT-2000, although new technologies might assist in this task;
- j) that the details related to IMT-2000, future development of IMT-2000 and systems beyond IMT-2000 will be specified in Recommendations and Reports to be developed taking into account the framework established in Recommendation ITU-R M.1645, “Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000”;
- k) that particular needs of developing countries must be considered with the aim of bridging the existing digital divide, with the objective of facilitating interoperability of different radio interfaces,

*resolves*

- 1** to develop the Recommendations and Reports for IMT-Advanced, including Recommendation(s) for radio interface specifications;
- 2** that the development of Recommendations and Reports for IMT-Advanced shall be an ongoing and timely process with defined outputs that take into account developments external to ITU-R;
- 3** that radio interface technologies that are proposed to be considered for IMT-Advanced shall be developed based on submissions from Member States, Sector Members and Associates of relevant ITU-R study groups, and may additionally be based on submissions invited from external organizations, in accordance with the principles set out in Resolution ITU-R 9-3;

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<sup>1</sup> As described in Recommendation ITU-R M.1645, systems beyond IMT-2000 will encompass the capabilities of previous systems, and the enhancement and future developments of IMT-2000 that fulfil the criteria in *resolves* 2 of Resolution ITU-R 56 may also be part of IMT-Advanced.

- 4 that the process for developing Recommendations and Reports for IMT-Advanced shall give equal opportunity to all proposed technologies to be evaluated against the requirements for IMT-Advanced;
- 5 that new radio interfaces that are developed over time should be considered for inclusion in IMT-Advanced in a timely fashion, and, if appropriate, that the relevant Recommendations be revised;
- 6 that, in light of the above *resolves*, this process shall include:
- a) the definition of minimum technical requirements and evaluation criteria, based on the framework and overall objectives of IMT-Advanced, that support the new capabilities expressed in Recommendation ITU-R M.1645, taking into account end-user requirements and without unnecessary legacy requirements;
  - b) an invitation for Members of ITU-R, through a circular letter, to propose candidate radio interface technologies for IMT-Advanced;
  - c) additionally, an invitation to other organizations to propose candidate radio interface technologies for IMT-Advanced, under the scope of liaison and collaboration with such other organizations through Resolution ITU-R 9-3. In such invitations the attention of these organizations shall be drawn to the current ITU-R Intellectual Property Rights (IPR) policies;
  - d) an evaluation by ITU-R of the radio interface technologies proposed for IMT-Advanced to ensure that they meet the requirements and criteria defined in 6 a) above. Such an evaluation may utilize the principles for interaction of ITU-R with other organizations as detailed in Resolution ITU-R 9-3;
  - e) consensus-building with the objective of achieving harmonization in response to the *considering* and *recognizing* paragraphs of this Resolution and which would have the potential for wide industry support of the radio interfaces that are developed for IMT-Advanced;
  - f) a standardization phase where ITU-R develops the IMT-Advanced radio interface specification Recommendation(s) based on the results of an evaluation report (defined in *resolves* 6 d)) and of consensus-building (defined in *resolves* 6 e)) ensuring that the specifications meet the technical requirements and evaluation criteria as defined in 6 a) or 6 g). In such a standardization phase, work may proceed in cooperation with relevant organizations external to ITU in order to complement the work within ITU-R, using the principles set out in Resolution ITU-R 9-3;
  - g) reviews of the minimum technical requirements and evaluation criteria defined in 6 a), taking into account technology advances and end-user requirements changing with time. As the minimum technical requirements and evaluation criteria are changed, these will be designated as separately identifiable versions for IMT-Advanced. The process will include review of existing versions to determine whether they should remain in force;
  - h) an ongoing and timely process where new radio interface technology proposals may be submitted and existing radio interface specifications can be updated. The process should have flexibility to allow proponents to seek evaluation against any version of the approved criteria currently in force,

*instructs the Director of the Radiocommunication Bureau*

- 1** to ensure that proponents of IMT-Advanced radio interface technologies and standards are aware of ITU-R IPR policy pursuant to Resolution ITU-R 1-5;
  - 2** to provide the necessary support and to implement suitable procedures to meet the requirements of the *resolves* above, including the sending of a circular letter calling for radio interface technologies proposals.
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