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Union Activities

ORB-88 adopts plans and regulatory provisions for geostationary satellites

The Second Session of the World Administrative Radio Conference on the use of the geostationary-satellite orbit and the planning of space services utilizing it (ORB-88) opened on 29 August at the Geneva International Conference Centre and completed its work on 6 October 1988.

Introduction

It was attended by 937 delegates from 120 countries and representatives of 15 regional and international organizations: the United Nations, World Meteorological Organization (WMO), International Maritime Satellite Organization (INMARSAT), International Telecommunications Satellite Organization (INTELSAT), International Organization of Space Communications (INTERSPUTNIK), European

Broadcasting Union (EBU), International Amateur Radio Union (IARU), Arab Telecommunication Union (ATU), Pan African Telecommunication Union (PATU), European Space Agency (ESA), Association of State telecommunication undertakings of the Andean Sub-Regional Agreement (ASETA), Arab Satellite Communications Organization (ARABSAT), European Telecommunications Satellite Organization (EUTELSAT), Inter-Union Commission on Frequency

Allocations for Radio Astronomy and Space Science (IUCAF), and International Radio and Television Organization (OIRT).

Objectives and mandate of the Conference

The objective of the Orbit Conference was to provide equitable and guaranteed access by all countries to the geostationary-satellite orbit (GSO) and the space services utilizing this orbit. The Conference was held in two sessions, the First Session having taken place in Geneva from 8 August to 15 September 1985.

The First Session had the difficult task of finding a way to reconcile the principle of guaranteed and equitable access with that of the efficient and economic use of two limited natural resources: the GSO and the radio frequency spectrum. To achieve this objective, the First Session worked out a balanced solution aimed at permitting any Member of the Union to operate a satellite service on a basis of equality and consolidate continuing equitable access to satellite services, while facilitating the development of a sound technological base for the future development of satellite services.

The First Session produced a report that included the principles and methods as well as the technical parameters to be used for planning. It also contained guidelines for the work to be carried out by the permanent organs of the Union in preparation for the Second Session of the Conference.

The Allotment Plan

The mandate of the Second Session of the Conference was essentially to translate the principles adopted by the First Session into a practicable and workable Allotment Plan that would



880175

ORB-88: general view of the meeting room

provide each ITU Member country with one orbital position and associated frequencies for one national satellite providing *domestic* services.

More specifically, ORB-88 had the task of:

- 1) establishing an *Allotment Plan* for certain bands¹ of the fixed-satellite service²;
- 2) drawing up associated procedures to enable the implementation of the Plan;
- 3) drawing up new procedures that would improve the co-ordination process between countries that would be affected by the operation of a new satellite in certain other bands³;
- 4) simplifying the procedures that had been followed so far to access the geostationary-satellite orbit to be applied to the unplanned bands (Articles 11 and 13 of the Radio Regulations).

Feeder Link Plan for the Broadcasting-Satellite Service

The Conference had also the task of drawing up a *Feeder Link Plan for the Broadcasting-Satellite Service* (BSS)⁴ for Regions 1 and 3 (Europe, Africa and Asia)⁵, thus completing a comprehensive world agreement for direct satellite television broadcasting. The various other elements of the agreement such as the down-links for Regions 1 and 3 as well as the feeder links and down-links for Region 2 are already subject to Plans incorporated into the Radio Regulations in 1979 and 1985 respectively.

Structure of the Conference

The Conference was held under the chairmanship of Professor I. Stojanović (Yugoslavia) assisted by seven

Vice-Chairmen: Messrs S. Bouhadeb (Algeria), Zhiyuan Song (China), P. Martín Leyes Hernández (Colombia), A. R. Bahrainian (Islamic Republic of Iran), J. Dondelinger (Luxembourg), A. L. Badalov (USSR) and T. F. Brophy (United States).

Seven Committees and one Working Group of the Plenary were set up.



880176

Professor I. Stojanović, Chairman of the Conference

Several Sub-Working Groups were also established on an *ad hoc* basis to resolve specific questions.

Committee 1—Steering Committee

The Chairman of the Steering Committee is the Chairman of the Conference, assisted by the Vice-Chairmen of the Conference as well as the Chairmen and Vice-Chairmen of

all the Committees and the Working Group of the Plenary.

Committee 2—Credentials Committee

Chairman:

Mr S. Sissoko (Mali)

Vice-Chairman:

Mr J. Székely (Hungary)

Committee 3—Budget Control Committee

Chairman:

Mr M. K. Rao (India)

Vice-Chairman:

Mr G. I. Warren (Canada)

¹ 4500-4800 MHz, 6725-7025 MHz, 10.7-10.95 GHz, 11.2-11.45 GHz and 12.75-13.25 GHz.

² The fixed-satellite service (FSS) is a radiocommunication service between two or more fixed points via satellites. Examples of services of FSS include telephony, data transmission, television not intended for individual reception, etc., where the origin of the communication and the destination are at specified permanent locations (as opposed to mobile locations such as ships, aircraft, cars, etc.).

³ 3700-4200 MHz; 5850-6425 MHz; 10.95-11.20 GHz; 11.45-11.70 GHz; 11.70-12.20 GHz in Region 2 between networks of the FSS only; 12.50-12.75 GHz in Regions 1 and 3 between networks of the FSS only; 14-14.5 GHz, 18.1-18.3 GHz between networks of the FSS only; 18.30-20.20 GHz and 27.00-30.00 GHz.

⁴ The BSS is for the transmission of television signals intended for individual reception.

⁵ For the purpose of administrative conferences, the world is divided into three regions: Region 1 covers Europe (including the whole of the territory of the USSR) and Africa, Region 2 covers the Americas and Region 3 covers Asia and Australasia.

Committee 4—Allotment Planning and Associated Procedures Committee

Chairman:

Mr S. Pinheiro (Brazil)

Vice-Chairman:

Mr C. T. N'Diongue (Senegal)

Committee 5—Broadcasting-Satellite Service (BSS) Matters and Associated Procedures Committee

Chairman:

Mr D. Sauvet-Goichon (France)

Vice-Chairmen:

Mr K. Kosaka (Japan)

Mr C. A. Merchán Escalante (Mexico)

Committee 6—Regulatory Procedures (other than for Allotment Planning and BSS Feeder-Links) Committee

Chairman:

Mr J. F. Broere (Netherlands)

Vice-Chairman:

Mr S. K. Kibe (Kenya)

Committee 7—Editorial Committee

Chairman:

Mr P. Aboudarham (France)

Vice-Chairmen:

Dr K. C. Shotton (United Kingdom)

Mr J. A. Prieto Tejeiro (Spain)

Working Group of the Plenary—Technical and Miscellaneous matters

Chairman:

Mr R. Ryvola (Czechoslovakia)

Vice-Chairman:

Mr H. K. Al Shankiti (Saudi Arabia).

Results of the Conference

The results of the Conference are published in the Final Acts signed on 6 October 1988.

The Final Acts enable the partial revision of the Radio Regulations and appendices (see box) and include:

1. A Feeder Link (up-links) Plan for the broadcasting-satellite service for Regions 1 and 3⁶ included in the Radio Regulations as Appendix 30A(Orb-88).

2. An Allotment Plan⁷ for the fixed-satellite service in the bands mentioned in footnote 2, included in the Radio Regulations as Appendix 30B. The Plan consists of two parts: Part A containing the national allotments and Part B containing the networks of existing systems. Existing systems are defined as being those for which information relating to advance publication has been received by the ITU or those for which co-ordination procedure has been initiated prior to 8 August 1985 or those recorded in the Master International Frequency Register.

3. Procedures associated with the FSS Allotment Plan relating to:

- the conversion of an allotment into an assignment⁸;
- the introduction of a subregional system⁹;
- additional uses;
- the addition of a new allotment to the Plan for a new Member of the ITU;
- the notification and recording in the Master International Frequency Register of assignments in the planned bands of the FSS.

4. Improved procedures contained in Article 11 of the Radio Regulations. The improved procedures relate to revised provisions of this Article including the possibility of multilateral meetings which may be required to achieve co-ordination between administrations whose satellites may be affected by the decision of another administration to launch a new satellite. These multilateral meetings form part of the co-ordination process in addition to bilateral meetings. New improved procedures were also included in Article 11 of the Radio Regula-

tions, adding the new concept of multi-lateral planning meetings (MPMs).

MPMs may be called, in exceptional cases, when an administration finds it has a major difficulty in obtaining co-ordination otherwise. The essential features of MPMs include the following: an administration which cannot attend an MPM may delegate another administration to represent it; the pertinent provisions of Article 11 will be applied to the network(s) of affected administrations which would be unable to attend an MPM for any reason; the results of an MPM will be considered as co-ordination agreements among the participants without prejudging the rights of non-participating administrations; MPMs will be open to representatives of affected multi-administration systems (such as INTELSAT, INTERSPUTNIK, EUTELSAT, etc.); the costs of participation will be borne by the participants and the ITU may be requested to supply secretarial services under contractual arrangements.

⁶ The BSS Plans are in bands 11.7-12.5 GHz in Region 1, 12.2-12.7 GHz in Region 2 and 11.7-12.2 GHz in Region 3; the Feeder Link Plans are in bands 14.5-14.8 GHz and 17.3-18.1 GHz in Regions 1 and 3, and 17.3-17.8 GHz in Region 2.

⁷ For the purpose of the Plan, an allotment comprises: a nominal orbital position, a service area for national coverage, generalized parameters used for establishing the Plan, a predetermined arc within which the definitive orbital position may be chosen and the frequency bands required to operate the satellite (800 MHz bandwidth).

⁸ When the decision is taken to use the allotment, a definitive orbital position and the specific operating frequencies must be selected. This is called the assignment of the satellite.

⁹ A subregional system is a satellite system created by agreement among neighbouring countries Members of the ITU, or their authorized telecommunications agencies, intended to provide domestic or subregional services within the geographical areas of the countries concerned.

Summary of the revision of the Radio Regulations and Appendices as contained in the Final Acts of ORB-88

The partial revision of the Radio Regulations and Appendices undertaken during ORB-88, as contained in the Final Acts of the Conference, concern the following:

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| <p>Article 1 Terms and Definitions</p> <p>Article 8 Frequency Allocations</p> <p>Article 11 Coordination of Frequency Assignments to Stations in a Space Radiocommunication Service Except Stations in the Broadcasting-Satellite Service and to Appropriate Terrestrial Stations</p> <p>Article 12 Notification and Recording in the Master International Frequency Register of Frequency Assignments to Terrestrial Radiocommunication Stations</p> <p>Article 13 Notification and Recording in the Master International Frequency Register of Frequency Assignments to Radio Astronomy and Space Radiocommunication Stations Except Stations in the Broadcasting-Satellite Service</p> <p>Article 14 Supplementary Procedure to Be Applied in Cases Where a Footnote in the Table of Frequency Allocations Requires an Agreement with an Administration</p> <p>Article 15A Coordination, Notification and Recording of Frequency Assignments to Stations in the Fixed-Satellite Service (Earth-to-Space) in the Frequency Band 17.3-17.8 GHz (in Region 2) Providing Feeder Links for the Broadcasting-Satellite Service and also to Stations of Other Services to Which this Band Is Allocated in Region 2, so far as their Relationship to the Fixed-Satellite Service (Earth-to-Space) in this Band Is Concerned in Region 2</p> <p>Article 27 Terrestrial Radiocommunication Services Sharing Frequency Bands with Space Radiocommunication Services above 1 GHz</p> | <p>Article 28 Space Radiocommunication Services Sharing Frequency Bands with Terrestrial Radiocommunication Services above 1 GHz</p> <p>Article 29 Special Rules Relating to Space Radiocommunication Services</p> <p>Article 69 Entry into Force of the Radio Regulations</p> <p>Appendix 3 Notices Relating to Space Radiocommunication and Radio Astronomy Stations</p> <p>Appendix 4 Advance Publication Information to Be Furnished for a Satellite Network</p> <p>Appendix 28 Method for the Determination of the Coordination Area Around an Earth Station in Frequency Bands Between 1 GHz and 40 GHz Shared Between Space and Terrestrial Radiocommunication Services</p> <p>Appendix 29 Method of Calculation for Determining if Coordination is Required Between Geostationary-Satellite Networks Sharing the Same Frequency Bands</p> <p>Appendix 30A(Orb-88) Provisions and Associated Plans for the Feeder Links for the Broadcasting Satellite Service (11.7-12.5 GHz in Region 1, 12.2-12.7 GHz in Region 2 and 11.7-12.2 GHz in Region 3) in the Frequency Bands 14.5-14.8 GHz and 17.3-18.1 GHz in Regions 1 and 3, and 17.3-17.8 GHz in Region 2 (Articles, Plans and Annexes)</p> <p>Appendix 30B Provisions and Associated Plan for the Fixed-Satellite Service in the Frequency Bands 4500-4800 MHz, 6725-7025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz (Articles, Plan and Annexes)</p> |
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In accordance with its agenda, the Conference took other decisions considered necessary or appropriate, including the review and revision of existing Resolutions and Recommendations and the adoption of various new Resolutions and Recommendations.

In addition to the new provisions of Article 11 on multilateral forms of co-ordination, a resolution on the subject was adopted (COM6/3). In this context, it should be noted that the Conference decided not to retain for planning frequency bands 18.1-18.3 GHz, 18.3-20.20 GHz and 27-30 GHz as initially foreseen under the improved procedures (see footnote 4) and invited the CCIR to continue its studies of the technical characteristics of these bands until a future competent conference may take a decision.

Hence, three ways of acceding to the GSO now exist:

- the pertinent provisions of Articles 11 and 13 if the frequencies to be used are part of the unplanned bands;
- the pertinent provisions of Article 11 for the planned bands under new procedures;
- the implementation of the Allotment Plan.

The Conference adopted 15 Resolutions and four Recommendations and revised four Resolutions of the Radio Regulations. Among the resolutions adopted, one relates to high-definition television (HDTV) (COM5/3) and another to sound satellite broadcasting service (SBSS) intended for individual reception by mobile or portable radio receivers (COM5/1).

As regards HDTV, the Conference resolved that the introduction of satellite HDTV should be effected by means of a frequency allocation on a world-wide basis and that the frequency range 12.7 to 23 GHz should be considered for the choice of an appropriate band to be chosen by a future competent conference.

With respect to SBSS, the Conference decided that the frequency band 500-3000 MHz should be considered for the accommodation of this new service, that further experiments were neces-

sary before the implementation of operational systems could take place, and that a future conference, to be held no later than 1992, should select a band or bands of frequencies in this range 500-3000 MHz with a view to a possible allocation to the SBSS.

Entry into force of the Final Acts

The partial revision of the Radio Regulations which includes the New Plan as

contained in the Final Acts of ORB-88 will enter into force on *16 March 1990* at 00h01 UTC (universal co-ordinated time) except as specifically provided otherwise. The Allotment Plan will remain valid for a period of at least 20 years from the date of entry into force of the Final Acts or until a revision by a competent conference is made. The BSS Feeder Link Plan will remain valid until at least 1 January 1994 or until a revision by a competent conference is made.