# Union Activities

## The First Session of the African Broadcasting Conference concludes its work

**The First Session of the Regional Administrative Radio Conference for the planning of VHF/UHF television broadcasting in the African Broadcasting Area and neighbouring countries—AFBC(1), which opened on 22 September 1986 at the Kenyatta International Conference Centre, Nairobi, completed its work on 9 October, one day earlier than scheduled.**

Some 190 delegates from 49 countries (47 participants and 2 observers) took part in the Conference which had been convened by the International Telecommunication Union (ITU) in accordance with Resolution No. 509 of the World Administrative Radio Conference of 1979, Resolution No. 1 of the ITU Plenipotentiary Conference (Nairobi, 1982) and Resolution No. 914 of the ITU Administrative Council. In addition, representatives of the United Nations, the International Civil Aviation Organization (ICAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Pan African Telecommunications Union (PATU), the Gulf Cooperation Council for Arab Countries (GCC), Gulfvision, the Union of National Radio and Television Organizations of Africa (URTNA) and the International Amateur Radio Union (IARU) were present.

### Structure of the Conference

The Chairman of the First Session was Mr S. K. Chemai (Kenya) assisted by three Vice-Chairmen: Messrs S. M. Ghandourah (Saudi Arabia), A. Toumi (Morocco) and F. Imounga (Gabon).

Six Committees and one *ah hoc* Working Group of the Plenary as well as several Working and Sub-Working Groups were set up (see the *Telecommunication Journal* of November 1986, page 620).


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*First Session of the AFBC Conference*

### Results of the First Session of the Conference

The outcome of the First Session consists in a technical report addressed to the Second Session scheduled to take place in October 1989. The report comprises 129 pages and is divided into six chapters preceded by a short introduction giving the legal basis for holding this Conference and summarizing the action taken by the First Session; it also includes two Resolutions and six Recommendations.

### Report to the Second Session

After giving a number of definitions of the concepts used (Chapter 1), the report reviews in Chapter 2 the propagation data for the VHF/UHF television broadcasting service. Propagation, which terms the way radio waves travel in the atmosphere, is conditioned by climates, meteorological conditions and topography of the area. For the purpose of propagation, four continental zones (temperate/sub-tropical, desertic, equatorial and maritime regions representing warm seas and low altitude terrestrial zones bordering warm seas), four maritime zones (maritime zones at low altitude displaying various degrees of superrefractivity) and one coastal zone surrounding one of the defined maritime zone of the neighbouring States of the Gulf region have been identified, based on the special radio characteristics prevailing in each of them as a result of climatic and meteorological conditions.

Because data which would allow terrain irregularities to be taken into account is in general not known with sufficient precision to be valuable in the development of a plan, correction for these irregularities have been disregarded for planning purposes and interference calculations.

Propagation curves have been developed for each zone on the basis of which planning can be made more accurately. Chapter 2 also studies propagation curves of other services sharing frequency bands with the broadcasting service (fixed and mobile services) to be in a position to predict the propagation of

signals which could interfere between stations of the different services. This is all the more important since some of the services such as the aeronautical-mobile service, are concerned with the safety of life. For example, radiocommunications between aircraft and control towers should remain free of interference from broadcasting stations to ensure the safety of airline passengers. The curves for the land-mobile service will however need to be completed by the International Radio Consultative Committee (CCIR) in the intersessional period as requested in one of the six Recommendations.

Chapter 3 provides for the technical standards and transmission characteristics to be used, including channel spacing and distribution, modulation standards, emission bandwidth, protection ratios, field strength values and maximum radiated power. The characteristics of transmitting and receiving antennas as well as those of receivers are also given. With regard to channel spacing and distribution, it was agreed that a uniform channel spacing of 7 MHz (for systems using a 7 MHz bandwidth) and 8 MHz (for systems using 8 MHz bandwidth) will be used for bands I and III. For bands IV and V, the channel spacing will be 8 MHz. As a result, band I (47-68 MHz) will be divided into two or three channels depending on whether the bandwidth is 7 or 8 MHz, band III (174-230 MHz) will be divided into eight or nine channels depending on whether the bandwidth is 7 or 8 MHz and bands IV and V (470-862 MHz) will comprise 49 channels, 8 MHz wide. As regards protection ratios, it was agreed that planning should be based on precision offset conditions using tropospheric interference to calculate the nuisance field strength. Continuous interference will be used only in exceptional cases.

Finally, it was decided that administrations wishing either to use two or more sound channels associated to one television service or to additional broadcasting services can do so provided no constraint to planning is introduced in the process.

Chapter 4 addresses the question of compatibility between broadcasting and other services sharing the same bands. Three sharing methods have been proposed: time sharing, band splitting and geographical sharing. It was agreed that a combination of band splitting and geographical sharing constituted the most practical way of sharing bands. It was also agreed that the following sharing criteria had to be established for determining interference: field strength to protect the television broadcasting service against the fixed and mobile services, protection ratios, assessment of multiple interference, receiving antenna discrimination and propagation model.

The planning principles and methods are given in Chapter 5. The Conference decided that planning should not be made in the upper part of band V (862-960 MHz). Assignments of these frequencies to broadcasting stations will be made in accordance with the procedure set in Article 12 of the Radio Regulations. It was also decided that any assignment including those that were part of the 1963 Plan not notified to the International Frequency Registration Board (IFRB) by 31 October 1987 would be considered as new requirements. The Plan will therefore contain assignments to television broadcasting stations in the following bands:

— 47-68 MHz (54-68 MHz in a number of countries);
— 174-230 MHz;
— 470-790 MHz;
— 790-862 MHz.

The planning principles and methods proposed to the Second Session have been elaborated with a view to guaranteeing to every administration equitable access to television broadcasting by securing the same number of national equivalent coverages for each country. Provisions have also been made so as to minimize coverage area overlapping territories of other countries.

Led by these principles, the Conference decided to recommend the following planning methods: for bands I and III, the planning will be based on a channel spacing of 7 or 8 MHz without overlapping the adjacent bands not allocated to the broadcasting service. For bands IV and V, planning will be based on the use of a theoretical lattice method. The theoretical lattice is a device intended to enable engineers to allocate channels to broadcasting stations in a region in such a way as to provide maximum density of stations on a logical repetitive basis.

Finally, the Conference report, in its Chapter 6, details the essential characteristics to be taken into account by administrations when submitting their channel requirements to the IFRB, the ITU body responsible for the management of the radio frequency spectrum. A time-table has also been established for the preparation of the draft Plan as follows:

— 1 June 1987: deadline for the IFRB to request administrations to submit their frequency requirements;
— 1 February 1988: deadline for submission of requirements by the administrations;
— 1 May 1988: deadline to submit to each administration a comprehensive list of all requirements received by the IFRB;
— 1 August 1988: deadline to communicate to the IFRB any material errors which may have been detected in the comprehensive list;
— 1 November 1988: deadline to submit to administrations the final requirements file.

After having developed the necessary computer software for the preparation of the draft Plan and on the basis of the requirements file, the IFRB will prepare a first draft Plan and send it to administrations no later than 1 February 1989.

After examining the results of the first draft Plan, administrations will be requested to submit any modifications aimed at improving the Plan by 1 June 1989. On the basis of the modifications received, the IFRB will prepare a second draft Plan to be sent to administrations by 1 August 1989, two months before the Second Session of the Conference.

The Conference adopted two Resolutions and six Recommendations:

— Resolution PLEN/1 relates to the approval of the report of the First Session of the Conference;
— Resolution COM5/1 relates to the assistance to be provided by the IFRB to the administrations of the planning area during the period between the two Sessions of the Conference;
— Recommendation COM4/A invites the CCIR to continue studies on propagation and radiometeorological conditions relevant to the planning area;
— Recommendation COM4/B invites the CCIR to continue its studies on sharing criteria for services using the band 790-862 MHz in the planning area;
— Recommendation COM4/C requests the CCIR to pursue studies for the geographical division of the planning area into propagation zones.

On the basis of the results obtained from these CCIR studies, a report will be made to the Second Session to enable it to review some chapters of the report drawn up by the First Session.

The three other Recommendations propose the convening of a two-day regional conference during the Second Session of the AFBC Conference for the Members of the Union in the African Broadcasting Area to abrogate the 1963 Agreement, the invitation to hold the Second Session by one of the administrations of the planning area and the draft agenda of this Second Session which will have to be submitted to the ITU Administrative Council.

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## AFRICA TELECOM 86: an event

The first major telecommunication exhibition to take place on African soil ended on 23 September 1986 at the Kenyatta International Conference Centre in Nairobi after eight days of intense activity.

AFRICA TELECOM 86 was organized jointly by the International Telecommunication Union (ITU) and the Kenya Posts and Telecommunications Corp. (KP&TC), with the support of ITU's 160 Member countries, the Pan African Telecommunications Union (PATU), the Union of National Radio and Television Organizations of Africa (URTNA) and some 50 professional engineering societies.

With its theme "Bridging the missing link", AFRICA TELECOM 86 provided an opportunity for a free-flowing exchange of ideas among the world telecommunication community on key issues of telecommunication development in Africa.

Ninety-four exhibitors representing 22 countries displayed on 2600 $m^2$ both high-quality and economically viable equipment and technology. Over 11 000 entries were registered. Among the personalities who visited the Exhibition and attended the Forum were several Ministers from the Governments of Kenya, Brazil, Cameroon, Italy, Malawi, Mozambique, Rwanda, Swaziland, Tanzania and Zimbabwe; Ambassadors and High Commissioners of countries represented in Kenya, high ranking government officials from several countries including the Governor of the Central Bank of Kenya and the President of the African Development Bank, Postmasters-General and Directors General of both telecommunications and broadcasting from practically all the administrations of Africa, Presidents, Chairmen and Managing Directors of nearly all the leading manufacturers of telecommunication equipment and other senior officials of public and private companies.

Excellent results were reported by exhibitors. For example, the International Maritime Satellite Organization (INMARSAT) representative said that AFRICA TELECOM 86 had been an excellent Exhibition and he was very gratified by the interest shown by the visitors. "The number of visitors, the level of the delegations and the questions raised are testimony of the quality of the Exhibition," he said. INMARSAT has no doubt achieved its objectives at AFRICA TELECOM 86 in having the Organization better known to African countries.

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*Kenyatta International Conference Centre*

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*Inauguration of AFRICA TELECOM 86*