

# COMMISSION OF THE EUROPEAN COMMUNITIES

COM(90) 171 final

Brussels, 11 June 1990

Proposal for a  
COUNCIL RESOLUTION

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on the strengthening of the Europe-wide cooperation on  
radio frequencies, in particular with regard to services with a  
pan-European dimension

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(presented by the Commission)

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PROPOSAL FOR A COUNCIL RESOLUTION ON THE STRENGTHENING OF THE  
EUROPE-WIDE CO-OPERATION ON RADIO FREQUENCIES, IN PARTICULAR  
WITH REGARD TO SERVICES WITH A PAN-EUROPEAN DIMENSION

## A SUMMARY

Frequency-based services are one of the fastest developing sectors of telecommunications services in the European Community. With the advent of digital technology which will greatly increase the efficiency of systems and lower the cost of equipment, the new radiocommunications-based telephone systems are expected to revolutionise the telecommunications environment over this decade and to generate, in combination with the traditional fixed telephone systems, universal personal communications, within the reach of every citizen. By the end of this decade mobile and cordless telephone systems are expected to reach more than 100 million subscribers in the Community.

The current transformation therefore means that demands on the frequency spectrum for public telecommunications systems will increase dramatically. At the same time, requirements of the other major users of the spectrum will continue : terrestrial and satellite broadcasting and television, in particular with larger frequency requirements for High Definition Television (HDTV) ; radionavigation, in particular air control ; government requirements, in particular defence-related use ; micro-wave links, in particular for the fixed telephone network.

Given the future central role of frequency-based services, the Community's frequency resource threatens to turn into a bottle-neck of future development. Sufficient availability of frequencies for pan-European services will be essential.

The new complex technologies and the related long and costly development periods underlying the new services now require the early interaction of service providers, industry, users and standards bodies in researching the frequencies best suited for future applications.

Traditionally, the planning, allocation and use of the frequency spectrum has been co-ordinated, at the international level, through the proven mechanisms established by the International Telecommunications Union (ITU) and, in Europe, by the European Conference of Postal and Telecommunications Administrations (CEPT).

Given the new requirements and following discussions in the framework of the co-operation between the Commission and the CEPT, it became evident that a major revision and strengthening of the current co-ordination procedures in Europe was needed.

The CEPT has now initiated a major reform of its activities in this sector. In particular, it has initiated the creation of a European Radiocommunications Office, in order to strengthen frequency planning and co-ordination in Europe.

The Commission considers that the major criteria to be applied to the reform of radiocommunications coordination in Europe should be the following :

- the new structures must meet the new requirements ;
- they must in particular be transparent and open ;
- they must take full account of Community law, in particular of competition rules ;
- the statutes of the newly created European Radiocommunications Office should explicitly guarantee these principles.

The Office should in particular allow participation by all parties concerned, dispose of an appropriate organisational structure, and of the resources necessary to ensure independence of its operations and rapidness of response to demands.

Common planning of radio frequencies is required to allow co-ordination at frontiers, to permit the use of equipment in different countries without change of frequency and without interference and to facilitate the large production runs for the new equipment necessary to make European industry competitive in the world market.

The radiocommunications spectrum is a central resource for the future development of the Community's telecommunications sector. The Commission considers it as essential, at this critical stage of the reform of radiocommunications planning and co-ordination in Europe, that Council sets out a framework and major policy goals in this area.

The Commission therefore proposes the enclosed Resolution for adoption.

## B EXPLANATORY MEMORANDUM

### I. INTRODUCTION

The promotion of "Europe-wide services according to market requirements and appropriate social needs" has been defined by Council in its Resolution of 30 June 1988 on the development of the common market for telecommunications services and equipment up to 1992 as one of the main goals of Community telecommunications policy<sup>1</sup>. In its Resolutions of 14th December 1988<sup>2,3</sup>, the European Parliament has emphasised the need for universal availability of services. The Commission in its Communication of 9th February 1988 on implementing the Green Paper on the development of the common market for telecommunications services and equipment identified a pro-active approach to the development of Europe-wide compatibility and interoperability of telecommunications services, including in particular mobile communications, as a central focus of future activity.

Mobile radiocommunications activities are one of the fastest developing sectors of telecommunications services in the European Community. Pan-European mobile services are essential to respond to the vastly increased requirement for mobility in the 1992 Community internal market.

With the advent of digital technology which will increase substantially efficiency of systems and lower the cost of equipment, the new radiocommunications-based mobile telephone systems are expected to revolutionise the telecommunications environment over this decade and to generate in combination with the traditional fixed telephone systems, universal personal communications, within the reach of every citizen.

Radiocommunications systems are intrinsically dependent on the availability of radio frequencies. The current transformation therefore means that demands on the frequency spectrum for public telecommunications systems will increase dramatically. At the same time, requirements of the other major users of the spectrum will continue : terrestrial and satellite broadcasting, in particular with larger frequency requirements for High Definition Television (HDTV) ; radionavigation, in particular air control ; government, in particular defence-related use ; micro-wave links in particular for the fixed telephone network.

Given the central future role of frequency based services, the Community's frequency resource threatens to turn into the bottle-neck of future development. Sufficient availability of frequencies for pan-European services will be essential.

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<sup>1</sup> Council Resolution of 30 June 1988 on the development of the common market for telecommunications services and equipment up to 1992 (OJ No. C 257, 4.11.1988, p.1)

<sup>2</sup> Resolution of 14 December 1988 on Post and Telecommunications (OJ No. C 12, 16.1.1989, p. 69)

<sup>3</sup> Resolution of 14 December 1988 on the Need to overcome the Fragmentation in Telecommunications (OJ No. C 12, 16.1.1989, p.66)

The Council and the European Parliament have taken initial steps in recognition of this in the past with the adoption of the Commission's proposal on the co-ordinated introduction of public pan-european cellular digital land based mobile communications in the Community. However, given the dramatic growth of demand on the spectrum and its role as a key resource for the Community's future economic development, in 1988 the Commission initiated a global review of frequency co-ordination and market requirements in the Community.

On the basis of the results of this review, consultations started in 1989 with the European Conference of Postal and Telecommunications Administrations (CEPT). At the same time, the radio committee of the CEPT - traditionally the focal point of co-ordination of radio frequencies in Europe - started analysis of the situation and submitted a report in February 1990.

This Communication draws conclusions at this stage and submits the Commission's proposal for a framework for the future approach to this sector.

## II THE CURRENT SITUATION

The radio frequency spectrum is a scarce international resource. International sharing rules exist to guarantee equitable access and to ensure protection of existing uses.

The main arrangements and mechanisms at the international level for the co-ordination of radio frequencies are the international regulations and procedures established by the International Telecommunications Union (ITU), including its International Frequency Registration Board (IFRB), its International Radiocommunications Consultative Committee (CCIR) and its World and Regional Administrative Radiocommunications Conferences (WARCs and RARCs).

In Europe, the main focus for co-ordination activities in this field between the Telecommunications Administrations has been the CEPT radio committee with a number of sub-working groups.

Concerning current allocation of the frequency spectrum in Europe, **Figure 1** shows, in a very simplified form, the major current uses of the spectrum between 30 to 3000 MHz<sup>4</sup> which for physical reasons (propagation modes and low attenuation) represents, with technologies currently available or in development, the part of the spectrum best suited to the new applications.

The spectrum below 30 MHz is used for long-range transmission in maritime and air transport and for international sound broadcasting. For frequencies above 10 000 MHz (10 GHz) attenuation increases very rapidly and most applications do not exceed 30 GHz at this moment.

The main uses of the frequency range of 30 MHz to 1 GHz are radio-broadcasting - mainly the over-the-air-television-channels - and land mobile services. It is within this frequency range that frequencies reserved up to now by Community action are located : 905-914 and 950-959 MHz for the public pan-European cellular digital radio system<sup>5</sup> (later to be expanded to cover the bands 890-915 MHz and 935-960 MHz) and 169.4-169.8 MHz for the pan-European paging system (ERMES)<sup>6</sup>.

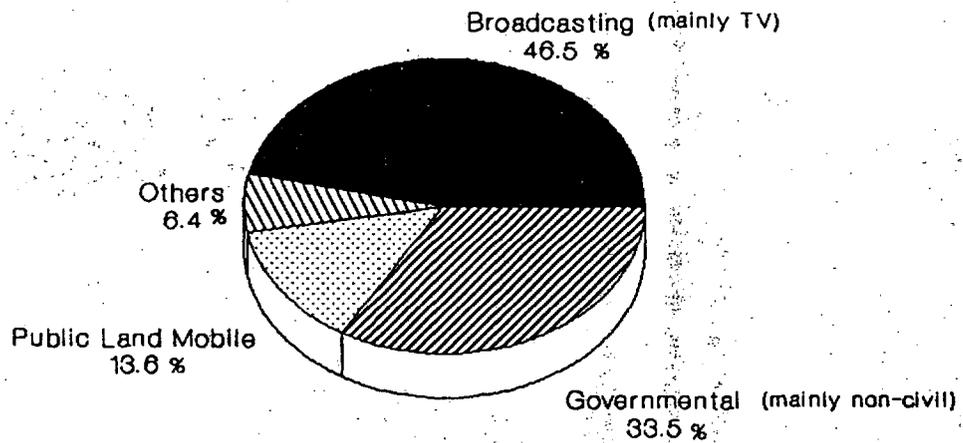
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<sup>4</sup> MHz : Mega Hertz (1 million cycles per second) ; GHz : 1 000 MHz

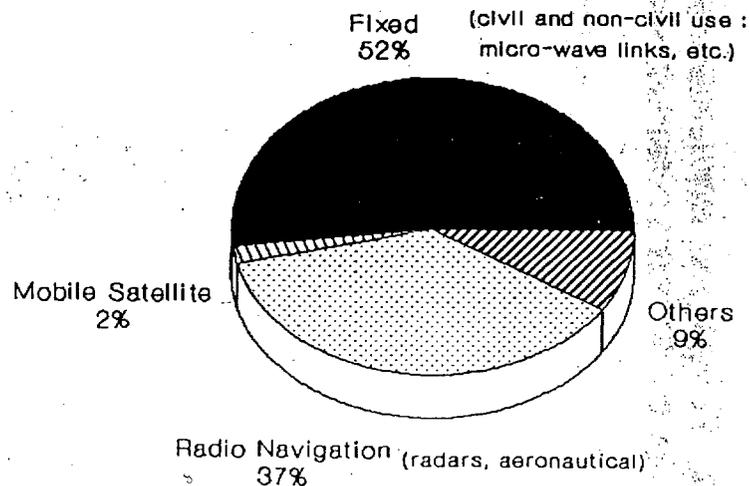
<sup>5</sup> Council Directive of 25 June 1987 on the frequency bands to be reserved for the co-ordinated introduction of public pan-European cellular digital land based mobile communications in the Community (OJL No. 196, 17.7.1987, p. 81)

<sup>6</sup> Proposal for a Council Directive on the frequency bands to be reserved for the co-ordinated introduction of pan-European land-based public radio paging in the Community (COM/89/166 fin. 5.6.1989) (ERMES : European Radio Messaging System)

## FIGURE 1 AVERAGE EUROPEAN DISTRIBUTION OF USES OF THE SPECTRUM (30-960 MHz)



## AVERAGE EUROPEAN DISTRIBUTION OF USES OF THE SPECTRUM (960-3000 MHz)



Source : CEC Study

Note : This figure presents a very simplified presentation of the current distribution of uses. For a more accurate presentation, reference should be made to the detailed national frequency allocation tables.

However, up to now only 13.6% of the usable spectrum in this range is allocated to the high growth sector of public mobile communications (out of which 5.4% for the pan European digital system).

The frequency range of 1 GHz-3 GHz is currently mainly used for radio navigation, micro-wave links, and satellite services. Given the dramatic increase in requirements, these are plans to locate major parts of the future mobile services in this range, in particular the future Digital European Cordless Telephone (DECT) (proposed frequency bands 1880-1900<sup>7</sup>).

The recent report by the Strategic Review Committee on mobile communications of the European Telecommunications Standards Institute (ETSI) proposed the freeing of a global band of 200 MHz in order to make available the substantial bandwidth required for the future universal mobile communications system, developed in particular in the Community's RACE programme.

Given the major new requirements ahead in particular regarding the range of 30 MHz - 3 GHz a major re-allocation of spectrum will have to be arranged, while at the same time the needs of current users will have to be attended to.

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<sup>7</sup> CEPT Recommendation T/R 22-02

### III NEW REQUIREMENTS FOR THE CO-ORDINATION OF FREQUENCIES IN EUROPE

These major future re-arrangements of the use of the radio frequency spectrum in Europe will have to take place while facing a substantial more complex environment :

- the new complex technologies and the related long and costly development periods underlying the new services require now the early interaction of service providers, industry, users and standards bodies in researching the frequencies best suited for future applications ;
- as a consequence, co-ordination with a large number of bodies outside CEPT is needed ;
- in particular, agreement on common frequency bands for radio communications systems is an essential basis for technical standardisation. Close co-operation and interaction with the European Telecommunications Standards Institute (ETSI) is needed ;
- major shifts in frequency usage require time given existing uses of the frequency spectrum. Long term planning becomes an essential element.

Up to now such long-term studies have been carried out on a national level and no substantial progress has been made in the development of long-term plans on a European basis ;

- As previously mentioned, the use of the frequency spectrum must comply with the requirements laid down in the International Radio Regulations. These regulations are agreed at the World and Regional Administrative Radio Conferences (WARCs and RARCs). The agreements reached at WARC's are often a compromise between many various proposals. Individually, Member States may have difficulty in achieving their aims. Collectively the chances are much improved. Good European preparation and co-ordination of proposals for WARC's greatly enhances the prospect of success ;
- finally, as Telecommunications Administrations and other service providers start to compete in the provision of frequency based services , a clear separation of regulatory and operational functions becomes indispensable.

Given these new requirements and following discussions in the framework of the co-operation between the Commission and the CEPT, it became evident that a major revision and strengthening of the current co-ordination procedures in Europe was needed.

Common frequency bands are required to allow co-ordination at frontiers, to permit the use of equipment in different countries without any change of frequency and without interference and to facilitate the large production runs for the new equipment necessary to make European industry competitive in the world market.

Efficient frequency co-ordination in Europe becomes a prerequisite for the take-off of a major part of future telecommunications services. This applies in particular to the problem of frequency assignment for projects of common European interest.

Current co-ordination procedures must be accelerated and strengthened.

#### IV TOWARDS AN ENLARGED AND STRENGTHENED FRAMEWORK OF COOPERATION FOR FREQUENCY PLANNING IN EUROPE

In order to match the new requirements set out above, the Commission considers the following as essential elements of an enlarged framework for frequency planning in Europe. The new framework should :

- be opened up to a substantially broadened participation by all parties concerned : frequency experts from national authorities responsible for frequency management, Telecommunications Administrations and other service providers, industry, and users ;
- build on the existing co-ordination mechanisms of the CEPT and be open to participation by its members ;
- provide a forum for common research towards identifying frequencies most suited for services and applications, taking due account of the other demands on the spectrum, market requirements, and development of products ;
- on this basis, work out in particular suitable frequencies for services with pan-European characteristics and forward, on request, appropriate recommendations to the national regulatory authorities or to the Community, as appropriate ;
- co-operate and interact closely, at all stages, with the European Telecommunications Standards Institute (ETSI) and with the other standardisation bodies concerned, in order to take full account of the close link between standards development and assignment of frequency bands ;
- undertake research into long-term requirements for frequencies, in order to promote long-term planning of frequency use according to market needs, and forward corresponding recommendations to the regulatory authorities and to the Community where appropriate ;
- undertake research in preparation of common positions at the ITU conferences on radio frequencies where required, in order to facilitate the working-out of common positions ;
- dispose of the resources to carry out analyses of long-term market and technology implications of frequency recommendations at the European level, and of an appropriate organisation structure.

At its meeting of 20/21 February 1990, the CEPT's Telecommunications Commission initiated, as a result of the discussions and the review set out above, a major reform of its radiocommunications activities. The main elements are :

- strengthening of the CEPT radiocommunications structure under a new European Radiocommunications Committee while, at the same time, streamlining its methods of working aiming at improved efficiency ;
- establishment of a framework for consultation and involvement of the wider interests ;

- creation of a permanent body of experts to be known as the European Radiocommunications Office, in order to undertake the essential long-term planning studies, to identify research studies for external funding and to assist in the process of consultations ;
- provision for strengthening agreements throughout CEPT in the field of radiocommunications.

The committee requested to undertake consultations with the Commission to work out further details.

## V CONCLUSIONS

The Commission considers that major criteria to be applied to the reform of radiocommunications coordination in Europe should be the following :

- the new structures must meet the requirements set out above ;
- they must in particular be transparent and open ;
- they must take full account of Community law, in particular competition rules ;
- the statutes of the newly created European Radiocommunications Office should explicitly guarantee these principles.

The Office should in particular allow participation by all parties concerned, dispose of a an appropriate organisational structure, and of the resources necessary to ensure independence of its operations and rapidness of response to demands.

The radiocommunications spectrum is a central resource for the development of the Community's telecommunications services. The Commission considers it as essential, at this critical stage of the reform of radiocommunications planning and co-ordination in Europe, that Council sets out a framework and major policy goals in this area.

The Council is therefore invited to adopt the attached proposal for a Resolution.

Proposal for a  
COUNCIL RESOLUTION

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on the strengthening of the Europe-wide cooperation on  
radio frequencies, in particular with regard to services with a  
pan-European dimension

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THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the proposal from the Commission,

Whereas the Council Resolution of 30 June 1988<sup>1</sup> on the development of the common market for telecommunications services and equipment has called for the promotion of the creation of Europe-wide services in line with market requirements and relevant social needs;

Whereas certain categories of radio-communications services are increasingly an essential component of these services, and are particularly vital for citizens on the move in the Community;

Whereas such services require increasingly intensive use of the radio frequency spectrum and the limitation of the spectrum reserved for these services constitutes an acute problem ;

Whereas the radio frequency spectrum is a scarce resource and there are other important demands on its use, such as use for government, defence and broadcasting purposes, including television<sup>2</sup> ;

Whereas radio frequency usage in Europe is currently in accordance with the radio regulations of the International Telecommunications Union (ITU) and there must be flexibility in taking account of national situations ; whereas, however, there is an indispensable requirement for co-ordination at the European level, in particular in the field of the new public mobile communications systems and that of satellite applications ;

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1 OJ No C 257, 4.11.1988, p.1

2 See also section 111 of Chapter 1 of the Radio Regulations annexed to the Convention of the International Telecommunications Union

Whereas agreement on common frequency bands for radio communications systems with pan-European characteristics is an essential basis for technical standardisation in the field of radio equipment and the Council Resolutions of 30 June 1988 and of 27 April 1989<sup>3</sup> have recognized the importance of measures regarding common standards in the telecommunications sector;

Whereas common frequency bands are required in order to permit the use of equipment in different countries, to minimise co-ordination problems at frontiers and to facilitate the large production runs for equipment necessary to make European industry competitive on the world market;

Whereas the systems of frequency allocation in the Member States have developed historically and due account must be taken of international arrangements and mechanisms which have been established in the field of frequency planning;

Whereas this concerns in particular the international regulations and procedures established in this field by the ITU;

Whereas at the European level a co-ordinated approach to frequency allocation for Europe-wide systems has been developed within the framework of the European Conference of Postal and Telecommunications Administrations (CEPT) ;

Whereas given the growing complexity of market, technology and standards the determination of frequency band and spectrum allocation for services of Europe-wide dimension requires participation on a broader basis ;

Whereas such Europe-wide participation is indispensable to allow establishment of standards, development of equipment by European industry, and timely service introduction by the Telecommunications Administrations and other providers, particularly in the field of mobile and satellite communications ;

Whereas co-ordination of radio frequencies must respect the principle of the separation of regulatory and operational duties;

Whereas the allocation of frequencies must therefore remain with the authorities charged with the management of the frequency spectrum, according to this principle;

Whereas the planning and allocation of frequency spectrum must be subject to objective, transparent, and non-discriminatory conditions and ensure equality of market opportunities to all service providers ;

Whereas any restrictions concerning the availability of radio spectrum must be justified and be in accordance with Community law ;

Whereas the most efficient use of the frequency spectrum which is a scarce natural resource, requires the early participation of service providers, industry, users, and standards bodies in researching the frequencies best suited for future applications, in order to take full account of long-term market and industrial applications and the requirements of other users of the radio spectrum ;

Whereas, therefore, the current mechanisms should be equipped with the necessary resources to undertake long-term analysis of frequency requirements, taking account of market demand, standards requirements and development of products and the requirements of other users of the radio spectrum ;

Whereas such a framework should be able, with the participation of frequency experts from national authorities responsible for frequency management, Telecommunications Administrations, and other service providers, Industry and users to identify, in particular, those frequencies best suited for services with pan-European characteristics and to forward recommendations to the regulatory authorities, or to the Community where appropriate;

Whereas such a framework would need close co-operation and interaction with the European Telecommunications Standards Institute (ETSI), in order to ensure the vital link between frequency planning and standards;

Whereas the CEPT has commenced and in some instances completed work in this area ; whereas ETSI, for its part, has also started work in this area ;

Whereas such a framework should also support long-term frequency planning at the European level and make recommendations for global shifts in frequency use, taking account of the fact that significant time may be needed to phase out or relocate existing uses, given the substantial investment in existing radiocommunications systems ;

Whereas such a framework must be operated in compliance with Community law, in particular with the competition rules ; whereas to this end it may be necessary in certain cases to apply for a clearance under Council Regulation No 17<sup>4</sup> ;

Whereas an appropriate representation of the Commission of the European Communities in such a framework should be ensured ;

Whereas such a framework should facilitate the working-out of common positions at the international level concerning frequencies, in particular with regard to the ITU and its Conferences on radio frequencies, in line with the Council Resolution of 30 June 1988 ;

Whereas such a framework should draw on the experience of the existing co-ordination mechanisms of the CEPT, must be Europe-wide and be open to participation by any member of the categories set out above ;

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4 OJ No 13, 21.2.1962, p.204/62

CONSIDERS THE FOLLOWING POINTS AS MAJOR POLICY GOALS IN THIS AREA :

1. Strengthening European co-operation in the field of radio frequency co-ordination with the objective of providing for sufficient frequency spectrum for new services, according to the needs of the European market and taking account of the requirements of existing services ;
2. Working in particular towards the timely allocation of sufficient frequency resources to mobile and satellite applications while taking due account of the other demands on the spectrum of other users ;
3. Promoting the most efficient use of the frequency spectrum by the early taking account of service, industrial, user, and standard requirements ;
4. Working out of common European positions in relation to the use of the frequency spectrum concerning international frequency co-ordination, in particular with regard to the International Telecommunications Union (ITU) and its relevant Conferences on radio frequencies;
5. In order to facilitate the achievement of these objectives, encouraging the creation of a framework of co-operation between frequency experts from national authorities responsible for frequency management, Telecommunications Administrations, and other service providers, industry and users, building on the existing co-ordination mechanisms of the European Conference of Postal and Telecommunications Administrations. Such a framework should :
  - be open to participation by any member of the categories mentioned above ;

- provide a forum for common research towards identifying the frequency spectrum most suited for services and applications, taking due account of market requirements, the development of products, and the needs of other users of the radio frequency spectrum ;
- on this basis, work out in particular suitable frequencies for services with pan-European characteristics and forward, on request, appropriate recommendations to the regulatory authorities or to the Community, as appropriate;
- cooperate and interact closely, at all stages, with the European Telecommunications Standards Institute (ETSI) and with the other standardisation bodies concerned, in order to take full account of the close link between standards development and allocation of the frequency spectrum ;
- undertake research into long-term requirements for the frequency spectrum, in order to promote long-term planning of frequency use according to market needs, and forward corresponding recommendations to the regulatory authorities and to the Community where appropriate;
- undertake research in preparation of common positions at the ITU conferences on radio frequencies where required in order to facilitate the working-out of common positions;
- dispose of the resources to carry out analyses of long-term market and technology implications of frequency recommendations at the European level, and of an appropriate organisational structure.

NOTES WITH SATISFACTION :

6. The current reform of radio frequency planning and coordination mechanisms undertaken by the European Conference of Postal and Telecommunications Administrations, and in particular the decision to create a European Radiocommunications Office ;

INVITES THE COMMISSION, THE MEMBER STATES, AND THE EUROPEAN CONFERENCE OF POSTAL AND TELECOMMUNICATIONS ADMINISTRATIONS :

7. To develop the new structures with the objective that they :
- meet the requirements for a new framework of cooperation set out under 5., taking full account of the requirement for the provision of sufficient frequency spectrum for pan-European services ;
  - be in particular transparent and open ;
  - take full account of Community law, in particular competition rules ;
  - provide for the new European Radiocommunications Office to allow for broad participation by all parties concerned, to dispose of an appropriate organisation and statute and to be availed of the resources necessary to ensure the independence of its operation and the rapidity of its response to demands.

Done at Brussels,

For the Council

COM(90) 171 final

# DOCUMENTS

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Catalogue number : CB-CO-90-279-EN-C  
ISBN 92-77-61304-1

PRICE	1 - 30 pages: 3.50 ECU	per additional 10 pages: 1.25 ECU
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Office for Official Publications of the European Communities  
L-2985 Luxembourg