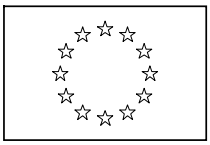

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 8.3.2000
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COMMUNICATION FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

THE EUROPEAN POSITIONS FOR THE WORLD RADIOCOMMUNICATIONS CONFERENCE 2000 (WRC-2000)

SUMMARY

BACKGROUND

Over 2000 radio spectrum managers, representing approximately 190 administrations, industry and inter-governmental organisations, will gather in Istanbul from 8 May to 2 June 2000 for the World Radiocommunications Conference 2000 (WRC-2000). WRC-2000, organised by the International Telecommunication Union (a UN body), is expected to make major decisions on radio spectrum availability for the radio systems of the 21st Century in such areas as communications, broadcasting, transport and R&D.

The Member States and other European countries have prepared European proposals for WRC-2000 in the framework of the European Conference of Postal and Telecommunications administrations (CEPT). The European Commission has participated in the preparatory process of the CEPT in its role of counsellor and will attend the conference as observer. The CEPT will present the European proposals to the conference and seek to co-ordinate the positions of its 43-countries membership throughout the conference. Where required, Community co-ordination will take place in order to ensure that the decisions taken comply with Community policy objectives.

ISSUES AT WRC-2000 WHICH ARE RELEVANT IN THE COMMUNITY CONTEXT

A number of European proposals for WRC-2000 are particularly relevant in the context of Community policies and aim to reach the following objectives:

- **Third generation mobile communications (IMT-2000/UMTS):** WRC-2000 will determine to which extent additional radio spectrum will be made available in a harmonised manner at global level. This is particularly important to facilitate further growth of Europe's prosperous mobile and multimedia market. CEPT's proposal on this issue is in support of this objective. However, due to differences in mobile communications development or to the varying importance countries attach to terrestrial or satellite communications, difficult negotiations are expected.

- **Satellite radio-navigation (Galileo):** the Community political agreement on establishing a European initiative in this area of major strategic and industrial importance now needs to be followed-up in terms of securing radio spectrum to make this action feasible. CEPT's proposal is in support of this objective. However, taking into account that the provision of satellite radio navigation positioning and timing systems is a complicated, strategic and costly matter which requires international co-operation, a major challenge will be to convince Europe's negotiating partners about the benefits of Galileo.

- **Satellite broadcasting:** WRC-2000 will address the issue of how the resources (orbital positions, channels) needed for satellite broadcasting should be distributed in a fair but efficient manner. This issue goes beyond radio spectrum management and preliminary discussions reveal major differences of opinion at a geo-political level between Europe and developing countries.

- **Satellite broadband communications:** these Internet-in-the-sky systems are believed to form part of the backbone of the 21st Century communications infrastructure. It is therefore important to ensure that any technical solutions agreed upon to facilitate satellite broadband communications would allow for the competitive provision of this sort of communications.

- **High-density fixed services (HDFS):** WRC-2000 will consider the spectrum requirements and the conditions of use for HDFS, particularly in respect to sharing with fixed satellite services (FSS). The Community supports the adequate access of HDFS to sufficient spectrum in order to provide reasonably-priced, rapidly-deployed, flexible wireless alternatives to wire-based infrastructures for the channelling of multimedia applications directly to European citizens. Supporting the development of this alternative will help to overcome the risk of a "local-loop bottleneck" for broadband services in Europe.

STRENGTHENING EUROPE'S POSITION AT WRC-2000

Taking into account that the Member States' delegations have the difficult task at WRC-2000 to ensure a suitable balance between the various commercial and non-commercial interests, the Community has a responsibility to set out its priorities for WRC-2000, as explained above.

In order to ensure that the radio spectrum managers at WRC-2000 have clear political instructions with regard to the Community policy objectives to be achieved, European Parliament and Council are invited:

- to endorse the European proposals worked out in the areas mentioned above and to urge the Member States to express clear and active support for these proposals by signing them;

- to urge the Member States to remain altogether coherent in their individual positions on the various issues, even where the dynamics of the negotiations require an adaptation of original negotiating positions. Where required to pursue Community policy objectives, the Commission will co-ordinate the positions of the Member States on the spot.

- to agree with the Commission's intention to discuss the Community's policy objectives and the European proposals with its trading partners in order to achieve an approximation of proposals prior to the start of the conference. This would particularly be required in the areas of IMT-2000/UMTS and satellite radio navigation where major Community policies have been agreed upon.

CONCLUSION

The Member States negotiate in WRC-2000 on an individual basis while co-ordinating their positions in the framework of the CEPT. While representing the Community as observer in ITU, the Commission will seek to ensure the co-ordination of the individual positions of the Member States where required, to pursue agreed Community policy objectives.

In order to establish agreement on the Community objectives to be achieved prior to the start of the conference, European Parliament and Council are invited to take note of the issues outlined in this Communication and to lend political support to the objectives to be achieved and the positions taken by the CEPT, particularly where third generation mobile communications and satellite radio navigation are concerned.

The Commission will report on the results of WRC-2000 in the second half of 2000.

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1. INTRODUCTION

Radiocommunications services are rapidly penetrating the texture of European society and becoming increasingly important to European citizens. Radio-based applications, such as cellular phones, are now major contributors to economic growth in Europe[1], while they also play a role in the integration of the peoples and of the markets of the European Union. However, to operate, radio-based services are completely dependent on the availability of suitable radio spectrum. From 8 May – 2 June 2000, some 190 administrations, including the Member States, will gather in Istanbul for the World Radiocommunications Conference 2000. Here major decisions will be made on the availability of radio spectrum for applications in the areas of mobile (i.e. IMT-2000/UMTS) and satellite communications (i.e. satellite broadband), broadcasting, transport including energy and timing (i.e. satellite radio navigation – Galileo[2]) and R&D.

The importance of radio spectrum availability for Community policies in these areas has been extensively described in previous Commission documents on the subject. The efficient planning of radio spectrum use in Europe is closely related to the frequency-allocation process which takes place internationally via the WRC[3]. The Community seeks to obtain decisions in the WRC-2000 which are compliant with relevant Community policies and which adequately reflect commercial and general interests in the European Union. In line with this objective, this Communication aims to:

- ensure that the European negotiating positions developed by the CEPT for WRC-2000 are consistent with relevant Community policies;

- raise political awareness about the Community issues at stake in WRC-2000 and to seek political support from Council and the European Parliament for the positions to be negotiated.

This Communication is structured in three core sections:

- a description of the importance of WRC-2000 in the context of Community radio spectrum policy (chp. 2);

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1 Some figures for European mobile telephony in 1999: 85% growth; 225 *B€* operator revenue; 65 *B€* spent on infrastructure until 1999, 450.000 workers in direct employment (source: GSM Europe).

2 By 2025, the total benefit of satellite navigation of 135 *B€* and the creation of 146000 jobs is predicted by sales within Europe (source: European Commission). This represents an increase of 47 *B€*, accompanied by 80000 more jobs, compared with the GPS-only scenario.

3 The World Radiocommunications Conference (WRC) is the instrument used by sovereign nations to discuss frequency allocations and sharing arrangements at a global level, and is held by the International Telecommunication Union (ITU) every two or three years. Its outcome are the ITU Radio Regulations, which have the status of an international treaty. For a more detailed description of the conference structure and procedures, see "The World Radiocommunications Conference 2000: Main Issues, European and other Regional Positions, Results (3rd interim report)", a study carried out by the European Radiocommunications Office (ERO) for the European Commission (http://www.ero.dk/eroweb/wrc.html).

- an analysis of the main WRC-2000 negotiating items which affect Community policies and of the European positions developed by CEPT (chp. 3);

- the presentation of a number of recommendations which, if endorsed politically, should ensure coherence of the Community and the CEPT in the conference and which would strengthen Europe's position overall (chp. 4).

2. WRC-2000 IN THE CONTEXT OF COMMUNITY RADIO SPECTRUM POLICY

The present Communication extends the scope of an earlier Communication[4] on the subject of WRC-2000 by specifically assessing how the negotiating positions developed by CEPT relate to and impact on Community policies. It builds further on the recommendations in the Communication[5] on the results of the public consultation on the Green Paper[6] on spectrum policy. One of these recommendations was that the negotiating positions developed by CEPT would benefit from being politically endorsed at Community level via an explicit, prior analysis of critical Community issues at WRC-2000.

The Community's preparations for WRC are undertaken under the aegis of CEPT[7]. In its role of counsellor to CEPT, the Commission has been an active participant in the process, via direct input to CEPT preparatory meetings by the Commission services concerned with particular topics (such as mobile telephony and satellite radionavigation). The Community will participate in WRC-2000 as observer.

In order to associate European industry more closely to the preparation of WRC-2000, the European Commission has addressed WRC-2000 issues in its regular contacts with individual or representative organisations such as ECTEL, EITIRT, ETP, GSM MoU and with the satellite industry in the context of the Satellite Action Plan, as well as with the UMTS Forum, a clear example of how structured co-operation between industry and administrations can establish the necessary consensus.

In addition and in co-operation with CEPT, three public consultation meetings[8] were held with industry with the aim to discuss the extent to which the draft CEPT positions reflect Europe's industrial interests. Overall, and as compared to previous radiocommunications

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4 Communication from the Commission to the European Parliament and the Council on Radio Frequency Requirements for Community Policies in the context of the World Radiocommunications Conference 1999 (WRC-99), 13 May 1998, COM(1998)298.

5 Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions on Next Steps in Radio Spectrum Policy – Results of the Public Consultation on the Green Paper, 10 November 1999, COM(1999)538.

6 Green Paper on Radio Spectrum Policy in the context of European Community Policies such as telecommunications, broadcasting, transport and R&D, 9 December 1998, COM(1998)596.

7 Details on CEPT's role in preparing negotiating positions for WRC-2000 can be found in the ERO report on WRC mentioned in footnote 3.

8 The first workshop, held on 24-25/6/98 centred on HDFS/FSS, GNSS and IMT-2000. The second meeting, held on 21-22/9/98 consulted on maritime issues. The third meeting (9-10/9/99) addressed the preliminary CEPT positions and draft ECPs on all the main areas to be negotiated at WRC-2000.

conferences, industry was actively involved in the CEPT preparations. Industry is also expected to be increasingly represented in the delegations of the Member States to WRC-2000.

The Commission also discussed issues pertinent to WRC-2000 with the Union's main trading partners with the aim to approximate positions prior to the start of the conference. For its part, CEPT has attended several meetings with other regional telecommunications organisation, such as CITEL (the Americas) APT (Asia-Pacific region) and the Arab League to find common ground prior to the conference[9]. The formal role of the Community in the WRC process is limited by its observer status. However, taking into account that decisions on the availability of radio spectrum increasingly have a direct bearing on Community policies, it requires a continuous assessment as to whether the Community's present role is sufficient to adequately pursue Community policy objectives.

3. WRC-2000 AND COMMUNITY POLICY OBJECTIVES

The Commission identifies five priority Community issues which will be discussed at WRC-2000. This chapter states the Community objectives for these priority issues and presents some strategic considerations to be applied during the negotiations at the conference. Additional background on these issues and a summary of the European negotiating proposals prepared by CEPT[10] can be found in annex II.

From a Community policy point of view, the five key issues at WRC-2000 are:

- **Third generation mobile communications/IMT-2000:** planning for additional spectrum at global level (WRC agenda item 1.6.1);

- **Radio-navigation satellite systems/GNSS:** new bands for GNSS (Global Navigation Satellite Systems) (WRC agenda items 1.9 and 1.15);

- **Satellite Broadcasting:** proposal for a revision of BSS (Broadcasting Satellite Service) plans (WRC agenda item 1.19);

- **Broadband satellite systems:** adoption of power limits for broadband satellite systems allowing spectrum sharing with other services (FSS, BSS: Fixed and Broadcasting Satellite Systems) (WRC agenda item 1.13).

- **High-density fixed services:** spectrum requirements and conditions of use of HDFS in bands above 30 GHz (WRC agenda item 1.4).

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9 ITU subdivides the world in "regions": region 1 is Europe, Africa and the Middle East; region 2 is the Americas; region 3 is Asia-Pacific.

10 European Common Proposals for the Work of the Conference, ITU ref. CMR2000/EUR-E.

3.1. Third generation mobile communications

3.1.1 Community policy objectives

The Community wants to ensure the successful development of third generation mobile communications (IMT-2000/UMTS) by ensuring additional radio spectrum availability at global level. This entails:

- Achieving a timely decision on identifying a sufficient amount of additional radio spectrum to be made available between 2005 and 2010: Since radio spectrum below 3 GHz is already very crowded[11], it is necessary to decide at an early stage which bands will need to be allocated. The Community objective is to reach decisions now, in order to allow for the needed bands to be made effectively available between 2005 and 2010, giving confidence to the sector of a smooth future expansion of third generation systems in Europe.

- Harmonising IMT-2000 bands at global level: As third generation systems are expected to operate globally, the interoperability of systems will be an important factor. Globally harmonised spectrum would allow for cheaper and easier implementation of networks and services and would contribute to the development of a truly global market. If a harmonisation of bands were to fail at the WRC-2000, the Community would need to consider the option of establishing rapidly a regional harmonisation of spectrum for IMT-2000.

- In Europe, the spectrum currently used for second generation systems should not be considered as candidate bands for IMT-2000 extension bands at this juncture. GSM is still evolving in terms of customers, service profile and the forthcoming deployment of GPRS constitutes a significant driver for preparing the ground for the uptake of third generation systems. It is expected that GSM/GPRS will coexist for a number of years with third generation systems.

A successful agreement at WRC-2000 on these issues will enhance the growth prospects of the wireless multimedia market and Europe's global position in this sector. On the other hand, a negotiating failure would indicate some degree of uncertainty to the market and would increase cost of spectrum re-farming at a later date**.**

3.1.2 Priorities and strategy of the Community

Success at the WRC-2000 conference is not assured. The prospect of a rapidly developing 'wireless Internet' with global reach may threaten economic interests in other parts of the world which have a less dynamic mobile communications market than Europe. Some countries may be campaigning for a postponement of a decision on extension bands for IMT-2000 and pleading instead for a discussion on the conditions under which subsequent WRCs could come to a final agreement.

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[11] Essential mission-critical services, such as air traffic management radar, as well as mobile satellite services (MSS) use these bands.

Other countries may not have the economic conditions that would allow a rapid proliferation of mobile multimedia services and may also be motivated to postpone decision making. Even some non-Community members of CEPT have been open to suggestions for such a decision deferment. In addition, developing countries often perceive the debate on extension bands as an attempt by industrialised countries to appropriate spectrum well ahead of the market reality or as being irrelevant to the needs of those countries.

As the stakes are high, it may be expected that the debate on extension of spectrum for IMT-2000 will be highly politicised. In this context, it will be crucial that Member States aim towards a maximum of coherence during WRC-2000 and abide by strict adherence to the Community objectives. An early formal adherence to the ECP by all Member States would constitute a strong political signal reinforcing the Community negotiating position.

3.2. Satellite radio navigation

3.2.1 Community policy objectives

The Community wants to ensure radio spectrum availability for new satellite radio navigation systems (GNSS/Galileo) which would allow for a prominent role of the community in this area of major strategic and industrial importance. This entails :

- Obtaining equitable access to spectrum allocated to RNSS for Galileo.
- Confirming the existing allocation to RNSS and reinforcing protection where needed.
- Actively support the decision on allocating sufficient additional spectrum for RNSS as basis for a timely and cost-efficient implementation of Galileo.
- Support the definition of protection parameters taking into consideration the need to share the spectrum allocated to RNSS with existing users (such as DME, radio-astronomy and radar) avoiding undue interference.

3.2.2 Priorities and strategy of the Community

The ECP adopted by the CEPT adequately reflects the frequency requirements as they have been assessed at this stage by various working groups set up by the Commission and regularly reporting to the Galileo Steering Committee[12].

Given the pattern of WRC negotiations, it is important to ensure the maximum possible support for Galileo from third countries, international organisations and other regions of the world. The Council has invited the Commission to explore the interest of third countries to co-operate in Galileo which should, *inter alia*, include aspects of infrastructure development, scientific, technical and industrial contributions and support for the necessary frequency allocation to allow the optimal exploitation of GNSS

[12] See COM(1999)54 in footnote 30.

throughout the world. Such an effort will certainly include pre-accession countries in Europe. Galileo is also seen as an important instrument for the EU to access space and ensure independence in this sector.

The Commission will make special efforts to communicate with third countries and inform them on the frequency issues, as far as possible in advance of the WRC but also at the WRC itself. The Commission regards it as essential that Member States help to convince third parties of the benefits which Galileo can bring to all existing and potential GNSS users.

Having established an appropriate ECP will not guarantee a successful outcome at WRC-2000, from the Community point of view, on this issue. It is vital that Member States actively support the ECP during the conference. The Commission, therefore, undertakes to try to ensure active co-ordination of the Community position in the preparatory phase and throughout the conference.

The Council formally requested the Commission to ensure when negotiating with the US and with the Russian Federation an appropriate co-ordination mechanism for the management of the frequencies required for the satellite navigation based systems[13].

In the light of the on-going negotiations with the US and the Russian Federation on GNSS (including the frequency issue) and the importance of the Galileo programme, the Community and the Member States may need to adapt their strategy, both before WRC-2000 and "on the spot." In particular, the CEPT brief, which should guide the European actions at WRC, may need to be updated and modified as the conference progresses. The Commission, therefore, proposes to seek to ensure the necessary co-ordination at Community level during WRC.

3.3. Satellite broadcasting

3.3.1 Community policy objectives

The Community wants to ensure a fair and efficient distribution of resources (orbital positions, channels) needed for satellite broadcasting, including cross-border systems within Europe. With respect to the WRC-2000 debate on re-planning of spectrum allocation for satellite broadcasting, this entails :

- access for European people to various audio-visual and multimedia contents of high quality, taking into account the cultural and linguistic diversity of European nations.
- development of a competitive satellite broadcasting market in Europe.
- equitable access to spectrum as well as orbital slots for existing and new satellite broadcasters taking into account market demand.

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[13] Council Decisions of 6th October 1999, authorising the Commission to open formal negotiations with the United States of America and with the Russian Federation in view of concluding co-operation agreements.

- efficient use of spectrum, avoiding leaving unused large spectrum bands; spectrum planning principles should allow for flexible usage to cater for system deployment tailored to market demand.

- spectrum replanning should take into account the Community's relationship with its immediate neighbours.

3.3.2 Priorities and strategy of the Community

Given the complexity of factors involved in the BSS radio spectrum re-planning, priority should be given to establish a consensus over the methodological approach of re-organizing these spectrum bands rather than proceeding with the re-planning itself at the WRC-2000. Member Sates are invited to take the Community policy objectives into account when negotiating re-planning principles and modalities. Given the anticipated growing role of BSS, WRC-2000 should decide on a clear roadmap for the necessary steps to be undertaken until the next WRC at which a re-planning could be finalised.

The Commission is concerned about the perspective of seeing a major conflict arising at the WRC given the sensitiveness of the issue for many countries of regions 1 and 3. Member States should therefore carefully consider the possible impact of the debate over BSS on other items which will be discussed at WRC.

The debate over BSS band re-planning has shown already at this stage that it is necessary to reflect, within the Community legislation on the provision of television broadcasting activities, on how to allocate spectrum and orbital resources in Europe in conjunction with the obligations resulting from WRC. In the light of the WRC-2000, the Commission will consider taking an initiative in this sense.

3.4. Satellite broadband communications

3.4.1 Community policy objectives

The Community wishes to facilitate the competitive provision of satellite broadband systems while taking due account of existing interests. WRC-2000 is to confirm the power limits and their application conditions and thereby to clear the way for the deployment of broadband satellite systems. The objectives of the Community in this respect are:

- The Community supports the introduction of new services such as NGSO FSS and competition in the provision of telecommunication services while ensuring the protection of GSO FSS, GSO BSS, space sciences and terrestrial systems in operation and their future evolution and growth.

- The Community is interested in seeing a conclusion of the debate on technical conditions allowing for sharing the bands in question, with specifications being adopted to allow for a timely deployment of the proposed systems.

3.4.2 Priorities and strategy of the Community

It is important that all Member States support the adoption of the technical specifications as recommended by the CPM[14], as it is not clear at this stage whether this compromise will be supported by all ITU members.

A failure at WRC-2000 to agree would raise serious concerns because it would impact on the establishment of sufficient competition between different system proposals given that the WRC-97 compromise would be unilaterally changed. Some systems would have access to spectrum on a primary basis whereas others would be subject to complicated co-ordination procedures delaying their introduction. A close CEPT concertation would be required in this eventuality, to find solutions to save the full package as agreed in WRC-97.

3.5. High-density fixed services

3.5.1. Community policy objectives

The Community is engaged in stimulating progress towards the Information Society in Europe by providing cheap, broadband Internet access and usage to European citizens[15]. Because of the high density of the potential user population in Europe, HDFS could be ideally suited as an additional platform to provide such services. It is therefore in the Community's interests to ensure sufficient spectrum for the timely deployment of a reasonably-priced and flexible wireless alternatives to wire-based broadband infrastructures in Europe. This entails:

- Making sure that terrestrial wireless services have access to a sufficient amount of spectrum to support the provision of competitive broadband Internet offerings, while at the same time taking due account of the interests of other services in the same bands (fixed satellite, Earth observation and radio astronomy).

- Spectrum access to be provided preferably by sharing with other services (FSS) while giving priority and adequate protection to HDFS. In the circumstances where co-existence is not realistically feasible, band segmentation needs to be considered.

3.5.2. Priorities and strategy of the Community

WRC-2000 will be an important forum to decide on the use of several bands for HDFS. Member States have had divergent attitudes towards fixed wireless services in the past. However, in order to achieve significant results at WRC-2000, the strategy is to have a common approach, embodied by the ECPs on HDFS. The ECPs prepared by CEPT are

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[14] A Conference Preparatory Meeting, or CPM, is organised before each WRC in order to approximate the positions of the various regions of the ITU. The meeting prepares a "CPM report" on technical and procedural matters which is used as the baseline for the conference. The CPM for WRC-2000 was held in Geneva in November 1999.

[15] See "eEurope: an Information Society for All", communication on a Commission Initiative for the Special European Council of Lisbon, 23 and 24 March 2000.

supported by the Commission, as they provide a good basis to stimulate the provision of competitive broadband wireless services in Europe.

It is likely that some countries outside the EU in regions 1 and 2 will have different positions about this issue at the conference, giving more emphasis to satellite systems. The Member States will therefore need to remain coherent and co-ordinated in their approach to this agenda items in order to obtain sufficient spectrum for HDFS.

3.6. Other important Issues

The description of the five preceding topics aims to clarify the main issues for the European Community in WRC-2000, in order to solidify political support for these topics. This particularly concerns the IMT-2000 and GNSS dossiers, where the Community has the clear interests to ensure sufficient spectrum for these services, and where the socio-economic stakes for the European Union are both evident and considerable.

However, WRC-2000 will also address other issues which have a bearing on Community policies, including :

- Radio spectrum requirements for digital maritime communications, as well as for aeronautical and maritime safety systems, where life-critical aspects are paramount. Since the completion of the Community's transport market is highly dependant on the availability of radio spectrum, it is important that due account is taken of relevant Community policies in this area.

  The recent Commission initiative on the creation of the single European sky[16],has been triggered by concerns for the escalating delays and congestion of air traffic in Europe. Securing sufficient access to the radio frequency spectrum for air traffic management at WRC-2000 is a key prerequisite for increasing air capacity and thus alleviate air traffic control delays[17]. WRC 2000 will examine a certain number of questions related to possible sharing of aviation bands. Such sharing might have implications in terms of safety and efficiency of air transport operations. It is therefore imperative that all implications be sufficiently well explored before any decision is taken[18]. It is also imperative to ensure that aviation has sufficient access to spectrum when it is ready to implement the technology break-through necessary to accommodate the traffic increase of the next decade (agenda item 1/10 refers). To

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16 Communication from the Commission to the Council and the European Parliament – The Creation of the Single European Sky, COM(1999)614 final, 1.12.1999.

17 The European Civil Aviation Conference (ECAC) Transport Ministers on 28.01.00 decided the following: "We note the importance to air traffic management in Europe of securing sufficient access to the radio frequency spectrum. In co-operation with ICAO, we shall seek to ensure that decisions made at the World Radio Conference later this year, and at subsequent Conferences, take account of the needs of the aviation community and set aside frequencies for Radionavigation systems and the future Global Navigation Satellite System (GNSS), for instance Galileo".

18 This action is particularly relevant in view of the ECP proposal under agenda item 1.6 (see Annex II, part I) to eventually consider the primary radar band as a candidate for sharing with UMTS.

this effect, WRCs should re-examine periodically the efficiency of measures put in place by the administrations to guarantee this objective.

- Due to the increasing need for radio spectrum by in particular commercial mobile satellite services, spectrum availability for Earth observation and radio astronomy has come under pressure. Taking into account that significant Community policies exist in these areas, it is important to ensure that the requirements of the various sectors are appropriately balanced.

- Radio spectrum requirements for HAPS (High-Altitude Platform Stations) will be discussed. HAPS have the potential to provide infrastructure capabilities for services such as IMT-2000. Although spectrum availability for the mobile satellite service (MSS) is considered sufficient in Europe, WRC-2000 will again address frequency needs for this service, taking future projected demand into account.

- The conference will also discuss which issues to include in the agenda for the conference following WRC-2000 (probably to be held in 2003). In this regard, Europe proposes to deal with radio spectrum requirements for, *inter alia*, aeronautical and maritime mobile services with a view to the introduction of digital technology and for communications services (e.g. HIPERLAN, wireless wide-band multimedia applications, high-density fixed-satellite services).

The decisions taken by the conference on the issues mentioned above will have a direct or indirect bearing on Community policies on a sectorial as well as a horizontal level. It is difficult, however, to politically assess how WRC-2000 might affect these policies, and this renders the establishment of Community agreement on the positions taken and priorities set difficult to achieve. A complicating factor in this regard is the absence of institutional arrangements within the Community where radio spectrum requirements for all Community policies are comprehensively addressed and where the interests of the various policy areas can be appropriately balanced. This matter would require further consideration at policy level, taking the outcome of WRC-2000 into account.

4. POLITICAL ENDORSEMENT OF COMMUNITY OBJECTIVES FOR WRC-2000

At World Radiocommunications Conferences, significant commercial and strategic interests pit themselves against the considerations of other business concerns and of non-commercial services. Because WRC issues are not consistently addressed at political level, it becomes increasingly difficult for WRC negotiators to balance the various interests on a purely technical basis.

It is therefore important that the Member States are fully aware of the extent to which Community policies are affected by the WRC negotiations. For those European positions developed for WRC-2000 which are found to be compatible with such policies, political endorsement of the objectives to be achieved in WRC-2000 would enhance Europe's overall negotiating position.

4.1. Negotiating objectives

With regard to the WRC-2000 agenda items which are particularly relevant in the context of Community policies, the following objectives should be endorsed:

- **IMT-2000/UMTS:** to ensure the successful development of third generation mobile communications in Europe by securing additional radio spectrum availability at global level (WRC agenda item 1.6.1), without jeopardising the safety and efficiency of air transport operations.

- **GNSS/Galileo:** to ensure radio spectrum availability for satellite radio-navigation systems which would allow for a prominent and independent role of the Community in this area of major strategic and industrial importance (WRC agenda items 1.9 and 1.15). Without succeeding in accessing the required spectrum, the EU will compromise a unique opportunity to play a role at global level**.**

- **Satellite broadcasting:** to ensure a fair but efficient distribution of resources (orbital positions, channels) needed for cross-border satellite broadcasting within the Community (WRC agenda item 1.19).

- **Satellite broadband communications:** to facilitate the competitive provision of satellite broadband services while taking due account of the radio spectrum requirements of existing terrestrial and space-based services (WRC agenda item 1.13).

- **High-density fixed services:** to ensure sufficient spectrum for the timely deployment of reasonably-priced and flexible fixed wireless alternatives to wire-based infrastructures for the provision of multimedia applications to European citizens (WRC agenda item 1.4)

4.2. Co-ordination mechanisms

With regard to the co-ordination mechanisms to be respected for WRC-2000, the following practices should be confirmed:

- **Expression of support for initial negotiating positions:** the Member States should sign all European Common Proposals developed by CEPT which are relevant to Community policies, particularly those related to IMT-2000 and to Galileo.

  By signing the ECPs, Europe will enter the negotiations in a coherent manner. It will also help to avoid the fragmentation of positions at a political level, taking into account that political pressure from third parties on particular issues during the conference itself might jeopardise the homogeneity of the European position.

- **Maintenance of support for agreed policy objectives:** the Member States' delegations should endeavour to maintain agreed positions throughout the conference with regard to the Community policy objectives to be reached in WRC-2000.

This is not intended to curtail the flexibility necessary during prolonged negotiations, where "packages" of unrelated issues might be handled across the board, and where a degree of "give and take" might be inevitable. Co-ordination meetings of the CEPT (and of the Community, where required), will be needed during the conference to preserve consensus on the negotiating approach to be followed to reach agreed objectives.

- **The *acquis communautaire* in the negotiations:** Member States shall negotiate in compliance of the Union's *acquis communautaire*, where applicable[19], and take due account of the overall interests of the Community when agreeing to (i) any common amendments to the agreed pre-conference CEPT positions, and (ii) any concerted reaction to new issues raised by third countries, where no common preparatory work by CEPT has been possible.

  In this context, the European Commission's role during the conference will be informed by the relevant Council Conclusions on this subject[20]. In accordance with these Conclusions and in view of the observer role of the EC at WRC, the Commission will monitor the negotiations for the duration of the conference.

- **Ad-hoc Community co-ordination:** ad-hoc co-ordination of the Member State' delegations may be organised in addition to the CEPT framework, where EU interests are at stake and where Community co-ordination is more appropriate to uphold Community interests, particularly in the areas of third generation mobile communications and satellite radio navigation.

- **Joint Declaration:** in accordance with present practice,[21] the Presidency of the European Union shall submit on behalf of the Community a joint Declaration for inclusion in the Final Acts of WRC-2000, stipulating that the delegations of the Member States of the EU declare that they will apply the revision of the Radio Regulations adopted at the conference in accordance with their obligations under the EC Treaty.

- **Approximation of regional positions:** the Commission shall promote the Community's key objectives to be reached in WRC-2000 in relevant contacts with third countries, with particular regard to mobile communications and satellite radio navigation.

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19 Most recently the Decisions by Council and by the European Parliament on UMTS, S-PCS, GSM-R, and Galileo.

20 i) Council Conclusions on the Procedures to be followed at the World Administrative Radio Conference (WARC 1992), 3 February 1992; ii) Council Conclusions on the Commission Communication on the World Radiocommunications Conference (WRC-97), 22 September 1997.

21 Council Conclusions on WARC '92.

This can be achieved, for example, in the context of the Community's partnership with developing countries, as cemented by the Lomé Convention[22] as well as other regional co-operation arrangements[23]. In addition, and in order to explain the Community's interests in WRC, the Commission will organise, in concert with CEPT, an information meeting with the missions to the European Community of developing nations shortly before the beginning of the WRC. This will assist in the search for common understanding, in particular with Arab and African nations which share the same ITU region with the European Union (Region 1).

At the same time, a specific dissemination effort will be undertaken by the Commission to promote the Galileo system within the context of the WRC with the aim to ensure the maximum international support for the Community objectives to be reached for this sector.

5. CONCLUSION

Radio spectrum policy is an area of growing attention in the Community. In parallel to the production of this Communication, the Commission is drafting a proposal for an EP and Council Decision on radio spectrum policy in the Community. The aim of this proposal is, on the one hand, to establish a regulatory level playing field where decisions on the use of the radio spectrum are taken in a balanced manner in a legally certain context and, on the other hand, to ensure that Community interests with regard to radio spectrum in the international arena, including with respect to WRC, are appropriately safeguarded.

The issues at stake at WRC-2000 are of such magnitude that the Community should already at this juncture discuss how best to preserve European interests.

As regards the issues to be considered by WRC-2000, political support should be expressed to achieve the Community objectives to ensure sufficient radio spectrum availability for third generation mobile telecommunications systems and for satellite radio navigation. In these areas, agreement has been established in the Community, as far as political orientations or legal requirements are concerned. It is now timely to also endorse the objectives to be achieved from an operational and spectrum management point of view.

As regards the co-ordination mechanisms to be respected when negotiating European positions at WRC-2000, the Community relies for the major part on co-operation within the CEPT. Were this co-operation to fail to produce results which are in support of Community policies, the Commission would co-ordinate the positions of the Member

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22 The fourth ACP-EEC Convention, OJ L229, 17.8.91, expired on 3 February 2000. A new Development Partnership Agreement to succeed Lom**é** is in an advanced phase of negotiation and is tentatively due to be signed in May 2000.

23 See the Council Regulation (EC) No. 148/96 of July 23rd 1996 on the Euro-Mediterranean partnership (MEDA), the Communication on the EU-GCC (Gulf Cooperation Council) Co-operation, COM95(541/7), the framework agreements between the EU and Mercosur, et al.

States on the spot, particularly in the areas of third generation mobile systems and satellite radio navigation.

Following WRC-2000, the Commission intends to prepare a Communication on the results of WRC-2000 with regards to Community policies and on the Community issues at stake at the following conference (due in 2003). Subject to the results of WRC-2000, the Community's approach towards WRC may need to be revisited in the context of the Commission's proposal for a decision on radio spectrum policy in the Community.

ANNEX I

Annotated agenda for WRC-2000

TOPICS	AGENDA ITEM	ISSUES
Mobile communications	1.6	IMT-2000
Satellite communications, fixed and fixed-satellite services	1.4	High density applications in the fixed service above 30 GHz; Conditions of use of igh density applications in frequency bands 31.8-33.4 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz; Use of the frequency band 40.5-42.5 GHz for fixed satellite services;Spectrum requirements for HDFS in the band 37-40 GHz; protection of the radio astronomy service in the band 42.5-43.5 GHz.
	1.5	High altitude platforms
	1.8	Earth stations located on board of vessels in 3700-4200 MHz and 5925-6245 MHz
	1.12	Sharing between feeder links of non-GSO MSS and GSO FSS in 19.3-19.7 GHz and 29.1-29.5 GHz
	1.13	Review and revision of power limits in relation to the sharing conditions between satellite broadband services and other services
	1.14	Feasibility of non-GSO MSS feeder links in 15.43-15.63 GHz
Review of the BSS plans (Appendices S30 and S30A)	1.19, 1.20, 1.21	Progress report from the Director of ITU-R; Progress report on ITU-R studies; Re-planning of Appendices S30 and S30A
Radionavigation-satellite, aeronautical and maritime mobile services, passive services	1.7	Use of HF bands by aeronautical and maritime mobile services
	1.9	Use of the frequency band 1559-1567 MHz and 1675-1710 MHz by the MSS
	1.10	Use of the band 1.5-1.7 GHz by the MSS (Generic Allocation)
	1.15.1	New allocations to radionavigation satellite from 1-6 GHz
	1.15.2	Addition of space-to-space direction to radio-navigation-satellite in 1215-1260 MHz and 1559-1610 MHz
	1.15.3	Status of allocations to services other than radionavigation-satellite service in 1559-1610 MHz
	1.16	Passive allocations above 71 GHz
	1.17	Passive allocations at 18.6-18.8 GHz
	1.18	Digital technology in 156-174 MHz for maritime mobile service
Other mobile-satellite services	1.11	Constraints on existing allocations and additional allocations for non-GSO MSS below 1 GHz
Other services	1.2	Finalise review of Appendix S3 with respect to spurious emissions for space services
	1.3	ITU-R study results of App. S7
	2	Incorporation by reference

ANNEX II

COMMUNITY ISSUES AT WRC-2000

This annex complements the presentation of the five key issues for the Community at WRC-2000 in chapter 3 of the Communication. A more detailed background for each issue is provided, together with an overall description of the European Common Proposal(s) relevant to it.

I. THIRD GENERATION MOBILE COMMUNICATIONS (IMT-2000/UMTS)

Background

The significant economic potential of mobile communications explains the great interest of the industry world-wide in third generation mobile communications (IMT-2000)[24].

A great opportunity exists for the mobile communications industry to be at the forefront of the development of the telecommunications market due to its ability to provide easy and ubiquitous personal access, anywhere and anytime[25]. Recent technical developments will open the perspective for packet-switched wireless transmission of large amounts of data and the usage of mobile data services is expected to exceed the present volumes of mostly voice-based services. This will allow for enhanced services such as faxing or e-mailing, handling electronic transactions, or accessing the Internet whilst on the move. The Internet itself is rapidly emerging as an enabler to e-commerce and information services. Estimates indicate that by 2004, some 60 % of all Internet accesses will be done by wireless or mobile means. Therefore, mobile communications are an important and essential enabler for the realisation of the Information Society.

The availability of further spectrum is a key pre-requisite that will determine the growth prospects for this industry. WARC-92 identified spectrum bands for third generation systems ("IMT-2000 bands") in an effort to harmonise the use of spectrum for systems which were already recognised as being fundamentally global in nature. Most ITU Members have endorsed the ITU recommendation. WRC-2000 will attempt to proceed similarly to WARC-92 in order to identify IMT-2000 extension bands.

Recognising the economic potential offered by new technology developments and by the anticipated market demand, the Community started, at an early stage, to pave the way for third generation systems.

Community RTD programmes supported the preparation of standards in conjunction with the global efforts undertaken in the ITU under IMT-2000. UMTS, a third generation

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[24] International Mobile Telecommunications - 2000 (IMT-2000) is the ITU vision of global mobile access in the 21st century.

[25] Strategy and policy orientations with regard to the further development of mobile and wireless communications (UMTS), Communication from the Commission, COM(97)513, 15 October 1997.

system proposal, was submitted to ITU and is now recognised as part of theIMT-2000 family of recommendations about to be finalised by the ITU.

The Community adopted the UMTS Decision[26] which harmonises the regulatory conditions governing the introduction of third generation systems in Europe. It notably establishes the legal basis for harmonising the spectrum in view of introducing third generation systems in the Community.

In order to make spectrum for IMT-2000 available in a timely manner, CEPT, following mandates pursuant to the UMTS Decision, has harmonised the radio spectrum bands to be used for IMT-2000, on the basis of the WARC-92 Recommendations.

Third generation mobile systems based on the ITU IMT-2000 recommendations are expected to be introduced by 2002. It is generally accepted that enough radio spectrum for launch of service will be available. Nevertheless, WRC-2000 will be crucial to decide on the long term availability of further radio spectrum (extension bands) for third generation systems. Large investment costs for third generation deployment would only be justifiable if the availability of further radio spectrum is expected for the longer perspective.

WRC-2000 will attempt to find an agreement on extension bands for IMT-2000.

European Common Proposals developed by CEPT:

CEPT with the assistance of the UMTS Forum assessed the future multimedia services market and estimated the amount of spectrum that would be needed. The CEPT refined a model proposed by the UMTS Forum[27] , together with accompanying spectrum estimates, and forwarded them for consideration by ITU which endorsed them.

In March 1999, ITU-R, as a result of its studies, identified a projected spectrum requirement for terrestrial mobile communications of an additional 160 MHz by the year 2010 for all regions. The requirement for additional spectrum is over and above the spectrum already identified for terrestrial mobile communications and should be met by identifying a limited number of contiguous bands. This decision has been forwarded to the WRC Conference Preparatory Meeting (CPM) of the ITU and forms a key part of the CPM report to the Conference[28].

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26 Decision of the European Parliament and of the Council on the coordinated of a third-generation mobile and wireless communications system (UMTS) in the Community, No 128/1999/EC, 14 December 1998.

27 Report by the UMTS Forum on UMTS/IMT-2000 spectrum (Report No. 6, 1998) and on candidate extension bands for UMTS/IMT-2000 terrestrial (Report No. 7, 1999).

28 CPM Report on technical, operational and regulatory/procedural matters to be considered by the 2000 World Radiocommunications Conference, ITU Radiocommunication sector, Geneva, 1999.

Pursuant to the UMTS Decision, the Commission has issued a mandate to the CEPT[29] requesting CEPT to prepare a European Common Proposal.

In response, the CEPT and in particular its Conference Preparatory Group prepared a European Common Proposal (ECP) for identification of an additional 160 MHz of spectrum, to be made available starting from 2005 in Europe and 2010 at the latest in the rest of the world, depending on market demand[30].

The ECP (part 1A) stipulates that for the terrestrial component of IMT-2000, the WRC-2000 should find global bands valid for all 3 Regions of the world to meet the requirement of 160 MHz of additional spectrum. It argues that globally harmonised spectrum will facilitate world-wide roaming and reduce cost and complexity of IMT-2000 terminals.

The ECP notes that the location of existing spectrum for IMT-2000 is not common to all 3 Regions. Therefore, the location of additional spectrum for IMT-2000 may similarly vary and as a result, some flexibility in the identification of additional globally harmonised spectrum for IMT-2000 may be needed.

The ECP identifies the 2500 – 2690 MHz band as the main candidate for use on a world-wide basis for IMT-2000 extension band. Furthermore, the ECP proposes to carry out studies into the possibility of further increasing spectrum availability. These studies will consider the feasibility of sharing with other services, such air traffic management radar, an essential component of aeronautical safety. A draft WRC Resolution has been prepared accordingly.

II. RADIO-NAVIGATION SATELLITE SYSTEMS

Background

Satellite positioning systems, originally conceived for military purposes, are today highly relevant for a number of civil applications involving navigation and positioning with a high economic potential.

At present, there are two global RNS systems, GPS and GLONASS, operated by the US and Russian governments respectively. These systems have a number of weaknesses from the point of view of civil user, including a lack of any guarantee of service, lack of information on error rate of the system and unpredictable temporary service gaps.

Suitable radio spectrum bands have been allocated to RNSS at previous WRCs. GPS and GLONASS utilise a considerable proportion of the available frequencies; new RNS systems may not disrupt existing services.

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[29] Mandate to the CEPT for the development of a common plan to identify additional frequency spectrum for a terrestrial third-generation mobile and wireless communications system (UMTS) in the Community, ERC TG1(99)121.

[30] ECPs on Agenda Item 1.6, Doc CPG2000-7, (2000)26 Rev 2.

The next generation global systems are already being planned and developed by the US, the Russian Federation and Western Europe (the European Union and the European Space Agency). In particular, the EU has initiated the Galileo project. The aim is to design a new RNS-based system under civil control which will be operationally independent from, but compatible and interoperable with, existing radio-navigation satellite systems. Consequently, Galileo will contribute very significantly to the robustness, availability and overall performance level of the Global Navigation Satellite System (GNSS). This is especially necessary for safety-of-life and other critical applications which rely on a robust, reliable and therefore redundant system.

The positioning and navigation network is an important element of the overall Trans-European Transport Network. The European Parliament and the Council of EU Ministers accepted that it should be based around the satellite systems, together with certain terrestrial systems. The Commission identified a number of major policy reasons for developing a new European satellite-based navigation and positioning system (Galileo), as opposed to relying on existing third countries' systems for the future, and made its recommendations in February 1999[31].

These recommendations were approved and the Galileo initiative was launched by the EU Transport Ministers which adopted a Resolution on 19 July 1999[32] which outlines the policy behind the decision to proceed with Galileo and the requirements set for it.

- Galileo is seen as a key element for the setting-up of a multi-modal infrastructure for all forms of aviation, water and land transport, potentially making a major contribution to an effective use of transport infrastructure, to an increase in safety, to a reduction in environmental pollution and to the setting-up of an integrated transport system with crucial importance for the Single Market.

- A European satellite navigation system will have a positive impact on information and telecommunications industries, in particular in developing a European market for location based services.

- Satellite positioning, navigation and timing can develop their full use only as a global system; international co-operation is necessary by means of which world-wide interoperable and compatible services can be offered.

User requirements and user demands should be of key importance in deciding on the development of a European satellite navigation system and on its characteristics, taking into account requirements developed by other relevant international bodies, such as ICAO, IMO, ITU as well as the WTO.

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31 Communication from the Commission to the European Parliament and Council on Galileo: Involving Europe in a New Generation of Satellite Navigation Services, February 10th, 1999, COM(1999)54.

32 Council Resolution of 19 July 1999 on the involvement of Europe in a new generation of satellite navigation services – Galileo – Definition phase, 1999/C 221/01, 3.8.1999.

The Council defined the work to be done by December 2000 when the first phase of the project will be completed. This includes, as recognised by Council, urgently carrying out, in co-operation with all States involved and the CEPT, necessary steps for frequency allocation and to simultaneously initiate necessary steps for preparation of the WRC in relation with all concerned bodies.

After the launching of Galileo, the second phase of the project is envisaged from the beginning of 2001 onwards, leading to initial deployment of the satellite constellation from 2005 and full operational capability of Galileo by 2008.

European Common Proposals developed by CEPT:

WRC-2000 will take several major decisions, which will impact on the future Radio-Navigation Satellite Service (RNSS) and Aeronautical Radio-navigation Service (ARNS). In particular it will decide on new frequency bands to be allocated to RNSS which will directly affect the development of Galileo and the evolution of the US Global Positioning System (GPS) and Russian Federation's Global Navigation Satellite System (GLONASS).

CEPT has developed two ECPs (part 2A and part 2D) on the agenda items of WRC-2000 directly related to GNSS (items 1.9 and 1.15, respectively). They partially cover the same frequency bands, so they are dealt with together :

- The ECPs propose to allocate new RNSS bands for space-to-earth, for space-to-space and for earth-to-space communication along with, where appropriate, power flux density (pfd) limits and other measures to avoid interference with existing users of these bands (such as aeronautical radio-navigation or radio location services, space-borne receivers or radio-astronomy services).

The ECPs adequately reflect the frequency requirements as they have been assessed at this stage by various working groups set up by the Commission regularly reporting to the Galileo Steering Committee. They will also not prejudice the continued provision, development and protection of existing services (particularly aeronautical Distance Measuring Equipment (DME) and surveillance radar).

- The ECPs conclude that allocating Mobile Satellite Services (MSS) in the 1559-1567 MHz band on a shared basis with RNSS is not possible and that no MSS allocation in the band should be authorised. WRC-2000 should consequently ratify the present development of RNSS in the 1559-1567 MHz band. If WRC-2000 cannot accommodate MSS spectrum requirements in another band, the issue of MSS allocation in the 1559-1567 MHz band could be reviewed at a future Conference.

- The ECPs support the introduction of the new space-to-space direction, with a footnote indicating that space-borne receivers shall not claim protection from existing RNSS systems or those for which advance publication information has been received by the ITU Bureau of Radiocommunication (BR), as of the end of WRC-2000. This

provision will ensure that GPS, GLONASS and Galileo will not be affected by the need to protect the space-borne receivers of existing or planned RNSS systems.

Concerning these two issues, the ECPs take into account the necessary protection for RNSS applications while confirming the need to provide MSS with additional spectrum.

III. BROADCASTING SATELLITE SERVICES (BSS)

Background

Satellite broadcasting is an important means of reaching the TV end user in Europe. Today, over 25 million European TV households are equipped with satellite dishes[33]. Along with cable TV distribution, satellite broadcasting has significantly increased competition within the commercial TV sector and thereby contributed to diversify programmes and develop the content industry in Europe.

Spectrum for satellite broadcasting is subject to ITU co-ordination. Scarce resources in this respect are both frequencies and orbital slots. Spectrum planning is carried out by allocating quota per country, disregarding whether the spectrum is actually used or not.

WARC-77 adopted a spectrum plan (contained in Appendix S30 of the ITU Radio Regulations) for the broadcasting-satellite service in Regions 1 and 3. WARC-85 adopted the corresponding feederlink plan for the fixed-satellite service (contained in Appendix S30A of the RR). The 1977 Plan foresees 5 channels for each country in Region 1 and 4 channels for each country in Region 3. The channel width is calculated on the assumption of analogue TV signal transmission, which increasingly becomes questionable with the introduction of digital satellite TV allowing for more transmission channels per spectrum unit[34].

Several issues are related to satellite broadcasting spectrum planning, such as spectrum efficiency (planned bands vs. allocation on demand, effect of digitalisation), the aggregation of spectrum quota (e.g. regional BSS systems vs. national systems), as well as indirectly the question of national sovereignty over allowing transmission of broadcast content over national territories.

In Europe, satellite broadcasting is not used at national level. Three broadcasting satellite operators provide services on a pan-European basis. This is possible under the ITU rules as long as it is not opposed by individual countries claiming their radio spectrum quota.

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33 1999 Reference Report to the Commission " Development of Digital Television in the European Union", (source IDATE).

34 In the short term, this will not necessarily free up spectrum, since a period of analogue-digital simulcasting will be necessary (phasing out of analogue TV sets).

The free circulation of programmes is governed in the EU by the Directive on TV without Frontiers[35]. This Directive guarantees the freedom to provide broadcasting services within the European Union by co-ordinating certain provisions laid down in the Member States. The Directive lays down EU-wide rules for meeting general interest objectives relating to content. The WRC process takes into consideration primarily the technical feasibility of spectrum allocation. However, since satellite broadcasting spectrum is thus far allocated in the ITU per country, there is, especially in certain countries neighbouring but not associated to the Community, the concern to see programmes entering without control their national territory, in particular via broadcasts by regional satellite systems[36].

European Common Proposals developed by CEPT:

Some countries in Region 1 and 3 have asked for BSS re-planning in order to obtain more channels per country to be dedicated to national coverage. They expect WRC-2000 to carry out this re-planning exercise. Indeed, resolution 532, adopted by WRC-97, stipulates that the feasibility of such re-planning should be studied. Some studies have already been carried out, but they are deemed to be insufficient by most CEPT countries. However, some countries of regions 1 and 3 of the ITU regard this issue as one of their priorities. WRC-2000 will therefore need to decide whether there is consensus to start a re-planning at this juncture. In a second step, modalities for re-planning will need to be agreed, as well as a timetable established.

At the time of writing, an ECP on the BSS spectrum band re-planning issue is still under preparation by CPG, which has expressed strong reservations against the idea of BSS re planning as early as WRC-2000 and proposes by default to keep the current plan unless an agreement on how to adapt the plan can be found.

To prepare the re-planning, two alternative proposals are considered. One would allow for increasing the spectrum capacity allocated to each country of region 1 and 3 from the current 5 channels to 10, albeit while applying a series of principles which would also cover regional or sub regional BSS systems within a single plan. Another possibility discussed by CPG foresees to establish two separate plans, one to cover national allocations and one to accommodate additional filings such as regional or sub-regional BSS systems or specific plan modifications.

CPG also intends to propose new compatibility criteria which would facilitate the compatibility assessment of BSS systems with respect to other services and thereby ease the re-planning itself. Finally, CEPT suggests that a number of technical studies be undertaken to take into account recent technological improvements and possibilities.

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35 Council Directive 89/552/EEC of 3 October 1989 on the co-ordination of certain provisions laid down by law, Regulation or Administrative Action in Member States concerning the pursuit of television broadcasting activities, OJ L298, 17.10.89.

36 Most of the countries with which the EU has concluded association agreements are under the obligation to co-ordinate and, where appropriate, harmonise their policies on the regulation of cross-border broadcasting, audiovisual technical standards and the promotion of European audiovisual technology.

IV. SATELLITE BROADBAND COMMUNICATIONS

Background

Broadband satellite systems such as Skybridge or Teledesic currently under development offer a large transmission capacity that can be re-distributed to individual users within the potentially large footprint of satellites. The Community has an interest in seeing these systems develop in the context of its policy to promote the realisation of the Information Society supported by an adequate infrastructure.

In the context of the S-PCS Decision[37] the Commission has recently mandated CEPT to start the investigation on measures which would be necessary to prepare for a harmonised deployment in the EU of systems operating above 3GHz. Broadband satellite systems are among these.

Currently planned broadband satellite systems operate, *inter alia*, in the 10-18 GHz ("Ku-band") and 18-30 GHz ("Ka-band") spectrum ranges which are otherwise heavily used by terrestrial fixed systems (FS) as well as by geostationary broadcasting or fixed satellites (GSO BSS, GSO FSS). The introduction of broadband satellite systems which use non-geostationary satellites (NGSO) in the same bands therefore requires special technical measures to limit the potential of interference and therefore allow for coexistence between these systems.

One of the possible techniques consists in introducing power limits to NGSO emissions. This new approach was proposed by CEPT at WRC-97.

Given the global nature of broadband satellite systems, global agreements on such power limits are essential. The assumption of this approach is that, provided NGSO systems comply with these specifications, no further co-ordination is necessary and NGSO networks can therefore go into operation without having to co-ordinate with GSO networks, and vice versa. Also, FS systems would be protected.

WRC-97 decided to include power limits in Articles S21 and S22 in order to ensure coexistence among non-GSO FSS, GSO FSS, GSO BSS, Space science and terrestrial systems in the frequency referred to above. WRC-97 adopted the concept of "hard limits" in these bands, and the regulatory conditions associated to these limits, subject to review and possible revision of the levels of these limits at WRC-2000.

The compromise reached at WRC-97 was as follows: the frequency band earmarked for Teledesic was increased by 100 MHz (RES 120), thus giving Teledesic primary access to the 500 MHz it requested for its operation. Across the Teledesic band, the power limit approach would not apply. Power limits were introduced in all other parts of the Ku and Ka band. The power limits specifications were however provisional, and subject to further studies.

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[37] Decision 710/97/EC of the European Parliament and of the Council on a co-ordinated authorisation approach in the field of satellite personal communications services in the Community, 24.3.97, OJ L105/4 of 23.4.97.

European Common Proposals developed by CEPT:

Agenda item 1.13 ofWRC-2000 deals with the conditions under which future satellite broadband systems shall be allowed to operate in certain frequency bands.

The issue has been the subject on long and detailed studies carried out by ITU since 1997 on the equivalent power flux density (epfd) limits specifying the limits on non-GSO FSS emissions in all cases. These studies have validated the technical and regulatory proposals that formed the basis of WRC-97 decisions. The issue may have been resolved at the Conference Preparatory Meeting, with Canada offering a compromise solution between the power limit option A (supported by most Delegations) and option B (supported by the U.S. and Israel). Both NGSO and GSO operators concerned have signalled their agreement to the compromise proposal.

The ECP for this item (part 3) supports the findings of these studies on the review of the limits in the frequency band covered by Resolutions 130 (WRC-97), 131 (WRC-97) and 538 (WRC-97), and in particular:

- The modifications proposed to Article S21, concerning the limits on non-GSO FSS systems to protect the Fixed Service and the suppression of Resolution 131 (WRC-97),

- The modifications proposed to Section II of Article S22, concerning the "validation", "operational" and "additional operational" limits on non-GSO FSS systems to protect the GSO FSS and GSO BSS systems,

- The need to control the aggregate interference caused into operational GSO earth stations by all the non-GSO FSS systems, through a Resolution.

- The exemption of both GSO and non-GSO systems from the national or sub regional restrictions appearing in S5.488 and S5.491.

V HIGH DENSITY FIXED SERVICES

Background

In the long-distance European telecommunications market, the development of competition following liberalisation in 1998 has already brought substantial benefits to customers in terms of choice and value for money. However, this “success story” has not been repeated at the local level. At the present time, the growth in European exposure to the Internet is slowed down by the dominance of incumbent telecom operators in the “local loop”, i.e. in the wireline infrastructure entering the users’ premises (homes, schools, most businesses, etc.). This leads to relatively high access and usage prices for Internet use, whilst the availability of broadband Internet is insufficient. The result is a slower user take-up of Internet applications in Europe than in North America.

To address this matter, one of the basic objectives of the eEurope digital initiative promoted by the European Commission is to support actions aiming to bring European citizens on-line as quickly as possible. The eEurope initiative considers, inter alia, how to remove the bottlenecks to Internet use in Europe. While it tackles this issue by promoting the "unbundling" of the local loop from incumbent operators, and by simplifying and speeding up the licensing process for new services across the EU, it also supports the allocation of harmonised frequencies to multimedia wireless systems, leading to greater competition in the broadband access market, greater choice and ultimately lower prices for consumers.

In spectrum bands above 30 GHz, HDFS meets the demand of the fast-growing market for new broadband services and applications. It allows new operators to deploy rapidly alternative infrastructures in a flexible and cost-effective way. It provides enhanced data rates from the current narrow-band telephone networks and is a viable alternative platform for multimedia services from other broadband access technologies, such as DSL and cable modems. HDFS can also be used as the infrastructure for the mobile sector in Europe, for GSM and IMT-2000 services. The potential for growth of fixed wireless, and the associated benefits to the European citizen, are both substantial, and its spectrum requirements need therefore to be protected.

European Common Proposals developed by CEPT

Three ECPs have been prepared by CEPT for agenda item 1.4 of WRC-2000:

In the first ECP (part 6A1), Europe supports the use of HDFS in the **37-39.5 GHz** band, which is already heavily used in Europe. Moreover, Europe also supports the use of the band **39.5-40.5 GHz** for FSS, so that both FS and FSS have the opportunity to use the 38 GHz range.

In the second ECP (part 6A2), Europe supports the use of HDFS in the bands 31.8-33.4 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz. For the b*and **31.8-33.4 GHz**,* Europe supports the CPM conclusion that sharing between FS and other services is feasible by applying some appropriate mitigation techniques, and therefore proposes that WRC-2000 confirm the FS allocation in this band. In the band ***51.4-52.6 GHz,*** Europe also support the CPM conclusion that FS can share the band with EESS (Earth exploration satellite services) and with RA (radio astronomy) sites in remote places – no change in allocation needed. For the band ***55.78-59 GHz,*** sharing is feasible with EESS. Europe also proposes to limit the ISS (inter-satellite services) use in this band to GSO satellites and LEO satellites with specific pfd limits, while some power limits are also applied to FS – no change in allocation needed. For the band ***64-66 GHz,*** HDFS can share with other systems – no change in allocation needed.

In the third ECP (part 6A3), concerning the use of the band **40.5-42.5 GHz** by the fixed service, Europe opposes the introduction of FSS in Region 1 and proposes to delete the BSS allocation in Region 1, since there are serious doubts as to whether co-existence between multimedia wireless systems (MWS) and uncoordinated FSS/BSS Earth stations is feasible in this band in Europe, given that they operate in the same high-density urban environments.

ANNEX III

GLOSSARY

APT	Asia-Pacific Telecommunity
ARNS	Aeronautical Radio-Navigation Service
BSS	Broadcast Satellite Service
CEPT	European Conference of Postal and Telecommunications Administrations
CITEL	Commission of Inter-American Telecommunications Administrations
CPG	Conference Preparatory Group of CEPT
CPM	Conference Preparatory Meeting
DME	Distance Measuring Equipment
ECP	European Common Proposal, to be adopted by CEPT/CPG
ECTEL	Association of the European Telecommunications and Professional Electronics Industry
EESS	Earth Exploration Satellite Services
EITIRT	European Information Technology and Telecommunications Industries Roundtable
ERC	European Radiocommunications Committee
ERO	European Radiocommunications Office of CEPT
ESA	European Space Agency
ETP	European Technology Platform
EU	European Union
FS	Terrestrial fixed systems
FSS	Fixed Satellite Service
GALILEO	European satellite-based navigation and positioning system
GLONASS	Global Orbiting Navigation Satellite System of the Russian Federation
GNSS	Global Navigation Satellite System
GPRS	General Packet Radio Service
GPS	Global Positioning System of the United States
GSM	Global System for Mobile Communications
GSM-R	GSM for rail applications
GSO	Geostationary Orbit
HDFS	High-Density Fixed Service
ICAO	International Civil Aviation Organisation
IMO	International Maritime Organisation
IMT-2000	International Mobile Telecommunications for the year 2000
ITU	International Telecommunications Union
ITU-R	Radiocommunication Sector of the ITU
MSS	Mobile Satellite Service
NGSO	Non-Geostationary Orbit
RA	Radio Astronomy service
RNS	Radio Navigation System
RNSS	Radio Navigation Satellite System

RR	Radio Regulations of the ITU
RTD	Research & Technological Development
S-PCS	Satellite Personal Communications Services
S-UMTS	Satellite UMTS
UMTS	Universal Mobile Telecommunications System
WARC	World Administrative Radiocommunications Conference
WRC	World Radiocommunications Conference
WTO	World Trade Organisation