



CEPT Report 008

**Report from CEPT to the European Commission
in response to the Mandate on:**

**“The Harmonised uses for the frequency bands
1670-1675 MHz and 1800-1805 MHz (the “TFTS bands”)”**

Final Report on 24 June 2005 by the:



Electronic Communications Committee (ECC)
within the European Conference of Postal and Telecommunications Administrations (CEPT)

Executive summary

CEPT has developed this report in response to the Commission's Mandate of May 2004 which required the CEPT to collect information on the current uses of the 1670-1675 MHz and 1800-1805 MHz frequency bands; to identify possible options for the harmonised use of these bands necessary for the establishment and functioning of the internal market in Community areas; and to develop and propose technical and regulatory provisions for such applications. The report has been developed by the Frequency Management Working Group (WGFM) of ECC, and was approved by the ECC in its 11th meeting, Reykjavik, 20 – 24 June 2005.

At its meeting in Copenhagen, 26-30 April 2004, WGFM considered the issue of possible future uses of the frequency bands which had been reserved for the implementation of TFTS¹ in Europe. As the TFTS is no longer in use, these bands have been under consideration for some time to be used for other applications in Europe. By the adoption of ECC Decision (02)07 the ECC decided to reserve these bands for harmonised European use.

WRC-03 allocated the bands 1518 -1525 MHz (space-to-Earth) and 1668 -1675 MHz (Earth-to-space) to Mobile Satellite Service from 1st April 2007.

The ECC has decided to withdraw ERC Decision (92)01 and to designate the lower TFTS band (1670 - 1675 MHz) to the MSS in Europe. An ECC Decision was developed in this regard by WG FM and was adopted as ECC/DEC(04)09. It entered into force on 12 November 2004. Therefore, the lower TFTS band has been designated to the Mobile Satellite Service (Earth to space) in Europe from 1st April 2007 by this Decision.

In considering the upper band (1800 -1805 MHz) at its April 2004 meeting, WGFM decided that the existing use of this band in Europe had to be further investigated, and in order to do this, a questionnaire would be sent by ERO to the administrations and the industry to request proposals for the future use of this band. A questionnaire was prepared in collaboration with the EC and sent out to all CEPT members.

Responses were received from 23 administrations, 9 private companies, ETSI ERM-RM and ETNO. The results of the analysis of these responses to the questionnaire can be summarized as follows:

- The band 1800-1805 MHz is not used for the moment in most of the countries. 19 administrations replied that the band is not used at all. Three administrations stated that the band is used by the military. 18 administrations stated that they have no plan for any specific use of the band. Therefore, there is potential for the band to be harmonised for use by a suitable system or applications within Europe. However, in some countries the band is still utilized for governmental use.

¹TFTS: Terrestrial Flight Telecommunications System

- For the ECC Decision (02)07, 15 administrations replied that they have already implemented it while a further 7 stated that they will implement the Decision by the end of 2004. This means that the Decision will have been implemented by a significant number of administrations in Europe by the end of 2004, thus providing a basis for possible harmonised future use of the TETS bands.
- Most of the administrations that responded are in favour of harmonised use of the band throughout Europe.
- The responses from the industry showed that they are in favour of using the band for several applications. However, the majority of the responses have come from two groups which aim to use the band for Universal Mobile Telecommunication System (UMTS) and Portable Wireless DSL (PWDSL) System. There are two other systems referred to; Wireless High Data Rate System and Real Time Location System. The industry also places importance on harmonised use of the band. They would even prefer worldwide harmonisation if it is possible. They all claim that there is an urgent market demand for their preferred technologies.
- All parties which replied to the questionnaire would prefer to use the band as a whole, not in parts.

Conclusions

- 1.** No further consideration of the lower TFTS band is required.
- 2.** There is scope for the bands to be harmonised, without major difficulty.
- 3.** The bands could potentially be made available for harmonised use across a number of countries.
- 4.** The 1800-1805 MHz band will be almost fully available by the beginning of 2005, except for the existing military usage in some countries. The uncertainty still exists in those countries. It is likely that the band would be negotiated in some countries with the military or opportunities for coexistence need to be explored.
- 5.** The industry is in favour of using the upper band for several applications and all parties intend to use the band as a whole, not in parts.
- 6.** The industry also notes the importance of harmonised use of the upper band for their preferred application. They would even prefer worldwide harmonisation if it is possible.
- 7.** While some administrations identified a number of applications which would benefit from harmonisation of the upper band, the priorities and preferences vary from administration to administration.
- 8.** In considering the conclusions above, it is evident that possible options for the operation of applications on a harmonised basis in the upper TFTS band need to be further investigated. The proposals for further work are set out in Section 10 below.

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- Annex 1 ECC Decision ECC/DEC/(04)09 of 12 November
- Annex 2 Questionnaire on the use of former TFTS bands in Europe
- Annex 3 Summary of the responses to the questionnaire
- Annex 4 Mandate to CEPT on Harmonised Uses for the “TFTS bands”

1 – Introduction

Because of a perceived urgent need for Aeronautical Public Correspondence (APC) in Europe, to provide public telecommunications facilities between passengers on aircraft and users on the ground, in 1992 the European Radiocommunications Committee (ERC) adopted Recommendation T/R 42-01, which designated the following frequency bands for the Terrestrial Flight Telecommunications System (TFTS):

- 1670 -1675 MHz for ground to air communications (lower band),
- 1800 -1805 MHz for air to ground communications (upper band).

Frequencies in these bands were to be made available for TFTS in a phased manner in accordance with market demands.

Furthermore, in order to give certainty on the availability of the spectrum, ERC adopted a Decision (ERC/DEC/(92)01) in October 1992 on the "frequency bands to be designated for the coordinated introduction of the Terrestrial Flight Telecommunications System (TFTS)". This ERC Decision was implemented by 33 Administrations. Subsequently, the Working Group Frequency Management of CEPT developed a detailed frequency plan, well known as the Schiever Plan, for the deployment of the TFTS in Europe. The Schiever Plan was contained in ERC Decision (97)08 which was implemented by 24 Administrations.

In many CEPT countries TFTS networks were licensed, however subscriber numbers failed to match the earlier market estimates. Based on a survey carried out by the ERO in 2001, the majority of CEPT countries indicated that there was no interest in continuing the TFTS service.

Therefore, in November 2002, CEPT withdrew the identification of the two bands for TFTS, by adopting ECC Decision (02)07 on the "harmonised European use of the bands 1670 - 1675 MHz and 1800 - 1805 MHz and on the withdrawal of the ERC Decision (92)01", which abrogated ERC (ERC/DEC/(92)01) and reserved the bands 1670 - 1675 MHz and 1800 - 1805 MHz for future harmonised use in Europe. Consequently, the ERC Decision containing the Schiever Plan, ERC/DEC(97)08, was also withdrawn.

The future use of these bands was partly dependent on the outcome of the ITU World Radiocommunication Conference (WRC-03) in respect of the mobile-satellite service (MSS) which was one possible service proposed for the band 1670 - 1675 MHz. Therefore CEPT decided to postpone the identification of new harmonised applications until after the WRC-03.

Meanwhile, CEPT submitted a European Common Proposal (ECP-31) to the WRC-03 on possible allocations to the MSS. By this ECP, it was proposed to make allocations

to MSS (space-to-Earth) in Regions 1 and 3 in the band 1 518-1 525 MHz¹ and to make a global allocation to MSS (Earth-to-space) in the band 1 668-1 675 MHz together with regulatory measures to ensure an appropriate sharing environment between MSS and the already allocated services. As a consequence of making these new MSS allocations, CEPT also proposed to remove the existing allocations to MSS in Region 2 in the bands 1 492-1 518 MHz and 1 675-1 710 MHz.

These proposals were endorsed by WRC-03 and as a result the band 1668 -1675 MHz paired with the 1518 -1525 MHz band was allocated to the Mobile Satellite Service in Region 1.

2 - EC Mandate on the harmonised use of former TFTS bands

In May 2004, the EC issued a mandate to CEPT on “Harmonised uses for the 1670 - 1675 MHz and 1800 -1805 MHz frequency bands (the “TFTS bands”) to fulfil the needs of the EC internal market”. (See **Annex 4**).

The purpose of the mandate was “to collect information on the current uses of the 1670 -1675 MHz and 1800 -1805 MHz frequency bands; to identify possible options for the harmonised use of these bands necessary for the establishment and functioning of the internal market in Community areas; and to develop and propose technical and regulatory provisions for such applications”.

The Mandate states in its “Justification” that in order to meet the needs of Community policies and to foster a more efficient use of the radio spectrum, the harmonised transfer of the identification of the bands from TFTS to other more beneficial applications is required at the earliest possible date. For that purpose, various alternative uses should be reviewed, taking into consideration relevant Community policies. The provision of harmonised spectrum for a number of wireless applications within the TFTS bands would support the achievement of objectives of Community policies related to the Information Society, to Transport and to Research and Development. Economies of scale and consequent benefits will only accrue if an effective single market for the free circulation of such applications is set in place by harmonising spectrum usage rules across the EU.

3 - Requirements for the execution of the Mandate

In execution of the mandate, CEPT is required first of all to explore whether there are any “real requirements” which could be fulfilled via a harmonised approach to the re-use of the TFTS bands.

- Concerning the lower band given the results of WRC-03 and the subsequent publication of ECC Decision (04)09 for MSS including the lower TFTS band (1670 – 1675 MHz), the requirements of the mandate have been fulfilled.

¹ Radio Regulations; 5.348 The use of the band 1518-1525 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. In the band 1518-1525 MHz stations in the mobile-satellite service shall not claim protection from the stations fixed service No. 5.43A does not apply. (WRC-03)

- Concerning the upper TFTS band, it is necessary first to collect information about existing uses and then to undertake a public consultation on possible future spectrum uses. WGFM requested ERO to conduct this public consultation following its Copenhagen 2004 meeting.

The responses to this consultation have been analysed to identify possible future applications for the band that would benefit from the harmonised status of the band.

In January 2005 WGFM established a drafting group to draft the Final Report to the Commission on the Mandate.

4 - Developments in ITU

WRC-03: WRC-03 allocated the bands 1518 -1525 MHz (space-to-Earth) and 1668 - 1675 MHz (Earth-to-space) to Mobile Satellite Service (MSS) in Region 1 from 1st April 2007 on a co-primary basis together with radio astronomy and space research services in the band 1668-1668.4 MHz, meteorological aids, radio astronomy, fixed and mobile (except aeronautical mobile) services in the band 1668.4-1670 MHz, and meteorological aids, meteorological satellite, fixed and mobile services in the band 1670-1675 MHz.

WRC-07: There is one item on the Agenda of WRC-07 Conference which could be of interest for the utilization of “former TFTS bands”:

Agenda item 1.7: to consider the results of ITU-R studies regarding sharing between the mobile-satellite service and the space research service (passive) in the band 1 668-1 668.4 MHz, and between the mobile-satellite service and the mobile service in the band 1 668.4-1 675 MHz in accordance with Resolution 744 (WRC-03).

Resolution 744 (WRC-03). invites ITU-R;

1. to complete studies relating to provisions to protect space research (passive) space stations from harmful interference from mobile earth stations in the band 1668-1668.4 MHz, taking care to avoid undue constraints on either service,
2. to study the use of the band 1668.4-1675 MHz by the mobile service, and to complete any relevant sharing studies between the mobile service and the MSS in this band, taking care to avoid undue constraints on either service.

Within ITU, Working Party 8D has been designated as the responsible Working Party for this agenda item. At this stage, WP8D is trying to gather information from WP 7C and 7D on the first study item and from WP 8A and 8B on the second study item above.

WP 8D produced a Working Document for studies relating to WRC-07 Agenda Item 1.7, which provides sufficient information to allow the commencement of the sharing studies relevant to this agenda item.

CPG is also carrying out some studies on this item like the other WRC-07 agenda items. A draft CEPT Brief on this agenda item was adopted by the CPG at its last meeting in February 2005 to be revisited at the subsequent meetings of CPG.

The studies, referred to above, are all related to the lower TFTS band and there is no ongoing study within ITU on the upper TFTS band (1800-1805 MHz) at the moment.

5 - Existing situation in Europe

At its meeting in Copenhagen, 26-30 April 2004, Frequency Management Working Group (WGFM) considered the issue of possible future uses of the frequency bands which had been reserved for the implementation of TFTS in Europe. As the TFTS system is no longer in use, these bands have been under consideration for some time to be used for other applications in Europe. By the adoption of ECC Decision (02)07 the ECC decided to reserve these bands for harmonised European use as mentioned above.

WRC-03 allocated the bands 1518 -1525 MHz (space-to-Earth) and 1668 -1675 MHz (Earth-to-space) to Mobile Satellite Service from 1st April 2007.

The ECC has decided to withdraw ERC Decision (92)01 and to designate the lower band to the MSS in Europe. An ECC Decision was developed in this regard by WG FM and was adopted as ECC/DEC/(04)09 which is attached in **Annex 1**. It entered into force on 12 November 2004. Therefore, the lower TFTS band (1670 - 1675 MHz) has now been designated to the Mobile Satellite Service (Earth to space) in Europe from 1st April 2007 by this Decision.

In relation to the upper TFTS band (1880-1805 MHz) the result of consultation conducted by ERO shows that there is little current use of this band across Europe. Moreover there is no regulation yet in Europe for the harmonised use of this band.

6 - Use of the TFTS bands in other regions

With regard to the Table of Allocations of the Radio Regulations (RR) of the ITU the band 1 800-1 805 MHz, as part of the band 1 710-1 930 MHz, is allocated to the fixed and mobile service on a primary basis in all three Regions of the ITU. Further, provision RR 5.380 states that the bands 1 670-1 675 MHz and 1 800-1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670-1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1 800-1 805 MHz is limited to transmissions from aircraft stations.

This section gives an overview on the utilization of the band 1 800-1 805 MHz in other regions outside the CEPT. Several countries have been chosen for reference. Among these countries are Australia, Canada, Japan, Korea (Rep. of), New Zealand and the United States of America.

Australia:

The Australian Communications Authority (ACA) issued a consultation paper in April 2004 (ACA 2004a) to seek views regarding whether additional bands might be made available to support the expansion of BWA technologies. The bands that were suggested as potentially suitable included, *inter alia*, the band 1785–1805 MHz. But it was stated that any devices in this band would need to co-exist with neighbouring mobile telecommunications (GSM 1800) services. Responses to that paper indicated that there may be significant commercial interest in at least some of the bands for BWA applications. However, respondents favoured allocating 2010-2025 MHz (currently used for fixed links) and 1900-1920 MHz (currently spectrum-licensed in cities and used for fixed links in regional areas). Respondents generally did not favour allocating 1785-1805 MHz (the ‘mid-band gap’ of the GSM1800 band) and 1880-1900 MHz (the DECT cordless telephone band) due to interference concerns. The ACA currently has an embargo (Embargo 38) on the issue of new licences in the 1785-1805 MHz band and it is proposed that the embargo will continue to apply to the 1785-1805 MHz band for the time being.

Canada:

According to the Canadian Table of Frequency Allocations the frequency band 1 710 - 1 850 MHz is allocated to the fixed and mobile service. Against the mobile service allocation there is a Canadian footnote (C5) which limits this service to the exclusive use of the Government of Canada. Another footnote (C33) states that in the bands 1 670-1 675 MHz and 1 800-1 805 MHz, the use of aeronautical public correspondence in accordance with No. 5.380 may be the subject of a future policy review. Industry Canada has issued a consultation paper on “Proposed Revisions to the Canadian Table of Frequency Allocations (2004 edition)” in December 2004. However, this consultation did not address the relevant frequency band. Therefore, the current status of the band remains and it might be available for the use of aeronautical public correspondence or governmental use with regard to the mobile service.

Japan:

In Japan, according to the Spectrum Chart 2003, the frequency band 1 710-1 850 MHz is assigned for fixed public services, while the frequency band 1 710-1 920 MHz is also identified for the use by terrestrial components of IMT-2000. On request, the Ministry of Internal Affairs and Communications will make the frequency bands given in provision 5.380 of the Radio Regulations available for the implementation of aeronautical public communications systems.

Korea (Republic of)

In the Republic of Korea the frequency bands given in RR 5.380 of the Radio Regulations are assigned for but not used by any aeronautical public correspondence system. However, parts of the band are limited to governmental use only.

New Zealand:

A Radio Frequency Closed Tender was set up by the Communication Sector of the Ministry of Economic Development for the frequency band 1 785-1 805 MHz which was completed on 31 January 2003. The successful bidder is CallPlus Limited (Management Right No. 78) with a high bid of \$31,000 (excl GST). The management rights are granted until 31 March 2021. Currently there are 10 licences registered in the frequency band 1800-1 805 MHz at the Ministry of Economic Development for the

use of frequencies for stations in the fixed service. Some of these licences are valid until 31 March 2021.

U.S.A.:

According to the NTIA Manual of Regulations & Procedures for Federal Radio Frequency Management the frequency band 1755-1850 MHz is allocated to the fixed and mobile service on a primary basis for governmental use only.

The information given above shows that the lower band is allocated to MSS worldwide. In most countries the upper band is not used or reserved for government use. An exception is New Zealand, where the management rights have been granted to successful bidder following a tender.

7- Public consultation on the use of upper TFTS band (1800-1805 MHz)

In considering the upper band (1800 -1805 MHz) at its meeting in April 2004, WGFM decided that the existing use of this band in Europe had to be further investigated, and in order to do this, a questionnaire would be sent by ERO to the administrations and the industry to request proposals for the future use of this band. The annexed Questionnaire (**Annex 2**) was prepared in collaboration with the EC and sent out to all CEPT members.

Responses were received from 23 administrations, 9 private companies, ETSI ERM-RM and ETNO before the end of the consultation period. The summary of these responses are provided in **Annex 3**.

An analysis has been made by ERO on these responses. The results of this analysis can be summarized as follows:

The band 1800-1805 MHz is not used for the moment in most of the countries. 19 administrations replied that the band is not used at all. Three administrations stated that the band is used by the military. 18 administrations stated that they have no plan for any specific use of the band. Therefore, there is potential for the band to be harmonised for use by a suitable system or applications within Europe. However, in some countries the band is still utilized for governmental use .

For the ECC Decision (02)07, 15 administrations replied that they have already implemented it while a further 7 stated that they will implement the Decision by the end of 2004. This means that the Decision will have been implemented by a significant number of administrations in Europe by the end of 2004, thus providing a basis for possible harmonised future use of the TFTS bands.

The responses from the industry showed that they are in favour of using the band for several applications. However, the majority of the responses have come from two groups which aim to use the band for Universal Mobile Telecommunication System (UMTS) and Portable Wireless DSL (PWDSL) System. There are two other systems referred to; Wireless High Data Rate

System and Real Time Location System. The industry also pays importance to harmonised use of the band. They would even prefer worldwide harmonisation if it is possible. They all claim that there is an urgent market demand for their preferred technologies,

All parties which replied to the questionnaire would prefer to use the band as a whole, not in parts.

Most of the administrations that responded are in favour of harmonised use of the band throughout Europe.

However, during the development of this report, some CEPT administrations pointed out that, in their countries, the legal instruments used to implement ECC Decisions can also lead to inefficient use of spectrum and restrict innovation if they result in spectrum being reserved for an application or technology which does not develop in the way anticipated.

8 - Schedule of work:

The mandate sets the time schedule for the completion of the work by CEPT on the Mandate as follows:

Delivery date	Deliverable	Subject
Nov 2004	First Report from CEPT to the Commission	Description of initial work undertaken under this Mandate, including results of public consultation, and schedule for future work. Presentation of work finalised for lower band (1670-1675 MHz)
June 2005	Final Report from CEPT to the Commission	Description of work undertaken and results achieved under this Mandate.

It was stated in the Mandate that “the final date of completion of the mandate is dependent on the work agreed following the first report”.

In the light of the above facts the possible schedule for the submission of the final report in response to EC Mandate can be as follows:

- 22 - 24 September 2004: Adoption of the first report by WGFM for submission to ECC,
- 08 -12 November 2004: Adoption of the first report by ECC,
- 08 December 2004: Consideration of the first report by RSC,
- 24 - 28 January 2005: Consideration of the preliminary draft final Report by WGFM,
- 23 - 27 May 2005: Adoption of Final Report by WGFM for submission to ECC,
- 20-24 June 2005: Adoption of Final Report by ECC

The final report could be sent to RSC after the June meeting of ECC, however, the RSC-12 has been scheduled for the 1st of June. Thus, it is not possible for ECC to send the final report before the RSC-12. However, in any case, the ECC will be able to send the final report by not later than the end of June 2005 as requested by the mandate.

CEPT also intends to report frequently on the progress of its work pursuant to this Mandate to all the meetings of the Radio Spectrum Committee taking place during the course of the Mandate as requested by the Mandate.

9- Conclusions

1. The lower TFTS band (1670 – 1675 MHz) has been designated by Decision ECC/DEC/(04)09 to Mobile Satellite Services (Earth to space) in Europe from 1st April 2007.

As a result, no further consideration of the lower TFTS band is required.

2. Most of the administrations replied to the questionnaire that they have already implemented the ECC Decision (02)07.

This means that there is scope for the bands to be harmonised, without major difficulty.

3. The responses on time scale for implementation of the ECC Decision (02)07 look more promising. Most administrations in Europe are in favour of keeping the bands harmonised.

The bands could potentially be made available for harmonised use across a number of countries.

4. The band 1800-1805 MHz is not used in most of the countries. Few countries referred to the military usage of the band.

The 1800-1805 MHz band is almost fully available by the beginning of 2005, except for the existing military usage in some countries. The uncertainty still exists in those countries. It is likely that the band would be negotiated in some countries with the military or opportunities for coexistence need to be explored.

5. The majority of the responses from industry have come from two groups which aim to use the upper band for UMTS and PWDSL systems. Other suggestions were for Wireless High Data Rate Systems and Real Time Location Systems.

The industry is in favour of using the upper band for several applications and all parties intend to use the band as a whole, not in parts.

The industry also notes the importance of harmonised use of the upper band for their preferred application. They would even prefer worldwide harmonisation if it is possible.

6. 18 administrations stated that they have no plans for any specific use of the upper band. Some Administrations have proposed applications such as radio microphones, wireless broadband, wireless applications in healthcare, communications from helicopters, sound programme radio links as well as the ongoing military use in a couple of countries.

While some administrations identified a number of applications which would benefit from harmonisation of the upper band, the priorities and preferences vary from administration to administration.

In considering the conclusions above, it is evident that possible options for the operation of applications on a harmonised basis in the upper TFTS band need to be further investigated.

The proposals for further work are set out in Section 10 below.

10- Further work to be done:

The following tasks could be undertaken in order to further investigate possible future use of the upper TFTS band:

- i. Further work should be undertaken to identify preferences and justifications for the applications proposed, in particular those proposed by both administrations and industry as indicated in conclusions 5 and 6 above,
- ii. Possible licence-free and experimental use of the upper band should be further investigated,
- iii. The necessary technical compatibility work between the candidate applications and potentially affected existing or planned radio services both in this band and adjacent ones should be undertaken. This should include scope for coexistence between the candidate applications,
- iv. An appropriate regulatory framework for harmonised use(s) of this band has to be developed,
- v. The opportunities for coexistence in those countries where the band is used for military applications should be investigated further.

ELECTRONIC COMMUNICATIONS COMMITTEE

ECC Decision
of 12 November 2004
on the designation of the bands
1518 – 1525 MHz and 1670 - 1675 MHz
for the mobile-satellite service

(ECC/DEC/(04)09)



Note:

Please check the Office web site(<http://www.ero.dk>) for the up to date position on the implementation of this and other ECC Decisions.

EXPLANATORY MEMORANDUM

INTRODUCTION

The bands 1626.5-1660.5 MHz and 1525-1559 MHz have been heavily used by MSS for many years prior to 2003, leaving little scope for further expansion in these bands. New systems, some of which are planned for the 1.6/1.5 GHz bands, would therefore have to seek access to other bands. The congestion of the 1.6/1.5 GHz band MSS spectrum has been confirmed by successive 1.6/1.5 GHz MSS operators' review meetings.

To respond to these issues and based on European proposals, WRC-03 allocated the bands 1518-1525 MHz and 1668-1675 MHz to the MSS. The band 1518-1525 MHz, which is used by the fixed and mobile service in a number of European countries, was allocated to the MSS at WRC-03 with the internationally applicable provision that MSS shall not claim protection from the fixed service (see RR footnote 5.348).

BACKGROUND

ECC Decision ECC/DEC/(02)07 withdrew the “ERC Decision on the frequency bands to be designated for the coordinated introduction of the Terrestrial Flight Telecommunications System (TFTS)” (ERC/DEC/(92)01) and reserved the bands 1670-1675 MHz and 1800-1805 MHz for harmonised European use. ECC/DEC/(02)07 however also noted that “Since the future use of these bands will partly depend on the results of WRC-03 on MSS which is one possible service proposed for the band 1670 - 1675 MHz, it is suitable to postpone the identification of new harmonised applications until after the WRC-03.”. With the decision of WRC-03 to allocate spectrum to the MSS it is now appropriate to designate the bands 1518-1525 MHz and 1668-1675 MHz to the MSS.

According to the ITU SRS database, globally there are about 30 radio astronomy stations operating in the band 1668-1670 MHz, of which 18 are in CEPT countries. Protection of the radioastronomy stations would require separation distances of the order of 500 km. In view of the number of radio astronomy stations in Europe operating in this frequency band sharing between radio astronomy and MSS would be hardly feasible in most of the CEPT area, whereas sharing elsewhere on a global basis would be feasible considering the large areas outside CEPT where there are no radio astronomy stations operating in this band.

ITU-R studies conducted prior to WRC-03 concluded that if the unwanted emission limits of Recommendation ITU-R M.1480 are used as a guide for the level of unwanted emissions for MESS operating above 1670 MHz, then in order to protect radio astronomy in the band 1660-1670 MHz, separation distances in the range of about 20 to 58 km are required to meet the protection criteria of Recommendations ITU-R RA.769 and RA.1513. Hence, exclusion zones would be required with regard to radio astronomy stations operating in the band 1660-1670 MHz. Due to the number and distribution of radio astronomy sites in CEPT that operate in the band 1668-1670 MHz, this band is not included with those designated for harmonised MSS operations.

RESOLUTION 744 (WRC-03) “*Sharing between the mobile-satellite service (Earth-to-space) and the space research (passive) service in the band 1 668-1 668.4 MHz and between the mobile-satellite service (Earth-to-space) and the fixed and mobile services in the band 1 668.4-1 675 MHz*” notes “*that MSS systems in the band 1668-1675 MHz are not expected to become operational prior to 2007.*”. This is in accordance with the ECP for WRC-03 Agenda Item 1.31.

REQUIREMENT FOR AN ECC DECISION

Following the WRC-03 decision to allocate the bands 1518-1525 MHz and 1668-1675 MHz to the MSS an ECC Decision is now appropriate to facilitate the harmonised introduction of the MSS in these bands in Europe and beyond. The allocation or designation of a frequency band for its use by a service or a system under specified conditions in CEPT member countries is laid down by law, regulation or administrative action. The ECC recognises that for the successful global expansion of the MSS, manufacturers and operators must be encouraged to make the necessary investments in this global radiocommunication system and service. An ECC Decision in advance of the expected date of deployment of 2007 would provide this confidence for the MSS community.

**ECC Decision
of 12 November 2004**

**on the designation of the bands 1518-1525 MHz and 1670 - 1675 MHz for the mobile-satellite
service**

(ECC/DEC/(04)09)

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that, recognising the MSS congestion in the bands 1525-1559 MHz and 1626.5-1660.5 MHz, the CEPT proposed to extend these allocations at WRC-03;
- b) that WRC-03 allocated the bands 1518-1525 MHz and 1668-1675 MHz to the mobile-satellite service;
- c) that ECC Decision (02)07 reserved the band 1670-1675 MHz for harmonised European use, but postponed the identification of new harmonised applications until after the WRC-03;
- d) that the band 1668-1670 MHz is heavily used by the radio astronomy service in Europe and therefore in order to protect radio astronomy use, it is not appropriate for the mobile-satellite service to operate in the band 1668-1670 MHz within CEPT countries;
- e) that, in a number of European countries, the band 1518-1525 MHz is also used by the fixed and mobile services, and according to ITU RR 5.342, by telemetry services in the aeronautical mobile service in a number of European countries;
- f) that in accordance with ITU RR 5.348, MSS shall not claim protection from the fixed service and is subject to technical conditions for coordination given in Appendix 5 in respect of ITU RR 5.342;
- g) that administrations may take measures in order to reduce the impact of terrestrial systems on MSS operations in the bands 1518-1525MHz and 1670-1675 MHz;
- h) that the majority of fixed links currently operating in the band 1670-1675 MHz within CEPT countries are expected to be removed by 1st April 2007;
- i) that MSS systems in the band 1668-1675 MHz are not expected to become operational prior to 2007;
- j) that Resolution 744 of WRC-03 invites ITU-R to study the use of the band 1668.4-1675 MHz by the mobile service, and to complete any sharing studies between the mobile service and the mobile satellite service in time for WRC-07.

DECIDES

- 1. to designate the band 1518-1525 MHz to the mobile-satellite service (space-to-Earth) and the band 1670-1675 MHz to the mobile-satellite service (Earth-to-space) from 1st April 2007;
- 2. that this Decision will enter into force on 12 November 2004;
- 3. that CEPT Administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented.”

Note:

19

Please check the Office web site(<http://www.ero.dk>) for the up to date position on the implementation of this and other ECC Decisions.

Annex 2

QUESTIONNAIRE ON THE USE OF FORMER TFTS BANDS IN EUROPE

BACKGROUND

At its meeting in Copenhagen, 26-30 April 2004, Frequency Management Working Group (FM) of ECC has considered the possible use of frequency bands reserved for the implementation of Terrestrial Flight Telecommunications System (TFTS) in Europe. Since the TFTS system is no longer in use, these bands have been under consideration for some time to be used for some other systems in Europe. By the adoption of ECC Decision (02)07 “on the harmonised use of the band 1670-1675 MHz and 1800-1805 MHz, and on the withdrawal of the ERC Decision (92)01 on the frequency bands to be designated for the coordinated introduction of Terrestrial Flight Telecommunications System (TFTS)” the ECC decided to reserve these bands for Harmonised European use.

In the meantime, the Radio Spectrum Committee (RSCoM) of the European Commission has adopted a working document on the “New Harmonised Uses for the 1670-1675 MHz and 1800-1805 MHz frequency bands (the TFTS bands) to fulfil the needs of the EC internal market. At its recent meeting in Copenhagen, WG FM has also considered this working document and the draft EC Mandate to CEPT annexed to the document and concluded that a decision on the possible future use of TFTS bands should be linked to market requirements, and the correct timing for an EC Mandate is important. For the moment, WG FM is of the opinion that it is too premature to consider a Mandate on harmonisation in particular on the upper band. However, the European Commission considers that the provision of harmonised spectrum for a number of wireless applications within the TFTS bands could support the achievement of objectives of Community policies related to the Information Society, to Transport and to Research and Development. The Radio Spectrum Committee will consider a way forward on this issue at its June 2nd meeting and may agree to the mandate, the first element of which would be a public consultation on current uses and future needs for the upper band. The rest of the work pursuant to the mandate would be subject to the results of this public consultation.

Taking into consideration that the World Radiocommunication Conference (WRC-03) allocated the bands 1518-1525 MHz to Mobile Satellite Service (space-to-Earth) and 1670-1675 MHz (Earth-to-space) from 1st April 2007 and that ECC has withdrawn the ERC Decision (92)01 “on the frequency bands to be designated for the coordinated introduction of Terrestrial Flight Telecommunications System (TFTS)”, WGFM has developed a draft ECC Decision during its meeting in Copenhagen, to designate these bands for MSS in Europe. The meeting has adopted this draft ECC Decision for

approval by administrations to proceed to public consultation. (The draft ECC Decision can be found at www.ero.dk/consultation).

In the preliminary discussions in WGFM it was proposed that this band could be used for medical telemetry. It was also noted that this band is a candidate band for IMT-2000 systems and beyond. After some consideration WGFM decided that this issue had to be further investigated, and a questionnaire should be sent to the administrations and the industry to request proposals for the future use of this band.

The following Questionnaire has been prepared for this purpose. Administrations are requested to reply the questions in Part 1 and send the responses to ERO, and communicate the questions in Part 2 to the relevant industry and user groups in their country and encourage them to reply to the questionnaire and send their responses directly to ERO not later than 24th of June 2004.

QUESTIONNAIRE

Part 1: Questions for the administrations:

Question 1: Has your administration implemented the ECC Decision (02)07 including the commitment to keep the band 1800-1805 MHz harmonised?

Yes

No

Question 2: What is the timescale for implementing the ECC Decision (02)07 in your country? Please state month/year in your response.

Question 3: Is the band 1800-1805 MHz in use in your country?

Yes

No

If yes; For which purpose is the band used?

Question 4: Does your administration have plans for any specific use of the band 1800-1805 MHz?

Yes

No

If yes; For which service or application?

Question 5: When could the band be made available for harmonised use? Please state month/year in your response.

Question 6: Any other comments?

Part 2: Questions for the industry and user groups:

Question 1: As an industry or user group, do you have any proposals for the future harmonised use of the band 1800-1805 MHz in Europe, to support the implementation of common European Community policies, such as the

development of the Information Society, transport policy, RTD policy, and the strengthening of the single market for equipment and services?

Yes

No

If yes;

i. For which service/application?

ii. Which part of the band? Please also state other operating conditions?

iii. When?

Question 2: Is harmonized use (i.e. throughout Europe) of the band important for your planned usage?

Yes

No

If yes; What is the reason? How would it assist in the achievement of European Community policy goals?

Question 3: How would your proposal support innovative applications and approaches?

Question 4: Would it also foster global harmonization?

Question 5: Any other comments?

Summary of the responses to the questionnaire:

Part 1: Responses from administrations:

Question 1: *Has your administration implemented the ECC Decision (02)07 including the commitment to keep the band 1800 -1805 MHz harmonised?*

15 administrations responded YES; while 5 said NO. 2 stated that they have committed themselves to implement and 1 administration responded "YES but partly".

Question 2: *What is the timescale for implementing the ECC Decision (02)07 in your country? Please state month/year in your response.*

14 administrations responded that they have already implemented the decision while 2 stated they have not. The rest 7 declared that they will implement the decision by January 2005 at the latest.

Question 3: *Is the band 1800-1805 MHz in use in your country?*

19 administrations responded NO, while 4 stated YES.

If yes; for which purpose is the band used?

Out of these 4 administrations 3 stated that the band is used for military purposes and 1 stated that the band is used by mobile service on a temporary basis.

Question 4: *Does your administration have plans for any specific use of the band 1800-1805 MHz?*

18 administrations said NO, while 5 stated YES.

If yes; For which service or application?

2 administrations indicated that they have plans to use the band for "medical telemetry"; 1 for "radio microphones"; 3 for UMTS; 1 for "air-to-air or air-to-ground communications from helicopters"; 2 for "mobile broadband"; one for "fixed service" and one for "military".

In some countries more than one use were referred to in their plans. This is why the summary of the plans given above refers to services more than the number of the administrations responded YES.

Question 5: *When could the band be made available for harmonised use? Please state month/year in your response.*

14 administrations responded that the band is “already available”. 4 stated it will be available by “January 2005”, while 1 said “by June 2005”. 4 administrations had “no comment”.

Question 6: Any other comments?

21 administrations are in favour of harmonised approach for the use of these bands throughout Europe.

2 administrations refer to specific use, however, one of them states “also harmonised use will be accepted with some conditions”. The other can not make any comment since the military use of the band could continue for some more years.

Part 2: Responses from the industry and user groups:

In analysing the responses from the industry and user groups, it was recognised that there were 11 responses but only 4 proposals for the future harmonised use of the band 1800-1805 MHz in Europe. These are;

- 1) Designation of the whole band for “UMTS”,
- 2) Designation of the whole band for “PWDSL”,
- 3) Designation of the whole band for “Wireless, high data rate”,
- 4) Designation of the whole band for “Real time location system”.

Therefore, the analysis of these 11 responses was made by classifying them into four groups. And the responses to all five questions were analysed under separate headings for each of these 4 groups below:

Group 1) Proposing the designation of the whole band for “UMTS”:

5 responses out of 11 were in favour of designating the band for UMTS usage.

Question 1: *As an industry or user group, do you have any proposals for the future harmonised use of the band 1800-1805 MHz in Europe, to support the implementation of common European Community policies, such as the development of the Information Society, transport policy, RTD policy, and the strengthening of the single market for equipment and services?*

They all responded YES.

If yes;

- ii. *For which service/application: UMTS*
- iii. *Which part of the band? Please also state other operating conditions: Whole band*
- iv. *When: According to market demand*

Question 2: *Is harmonized use (i.e. throughout Europe) of the band important for your planned usage:*

All five responded YES.

If yes; what is the reason? How would it assist in the achievement of European Community policy goals?

Harmonized use is important for interoperability, roaming, cross-border coordination and equipment manufacturers (same specifications throughout Europe). It contributes to increased economies of scale for all parties involved; the manufacturers, network operators and consumers. The designation of the band to UMTS/IMT-2000 would assist the European Community policy goals regarding the achievement of widespread access to new services and applications of the information society.

Question 3: *How would your proposal support innovative applications and approaches?*

The evolution of UMTS will lead to enhanced communication services with high data rates offering mobile broadband access for Europe. The designation of this band to UMTS would contribute towards meeting the expected spectrum demand and possible shortages in the coming years.

Question 4: *Would it also foster global harmonization? YES.*

This proposal fosters global harmonization because this band is already identified for UMTS (or IMT-2000) in the ITU Radio Regulations and in some European countries e.g. Germany, reserved for future land mobile service applications.

Question 5: Any other comments? No.

Group 2) Proposing the designation of the whole band for “PWDSL”:

4 responses out of 11 were in favour of designating the band for PWDSL usage.

Question 1: They all responded YES.

- i.* Portable Wireless DSL (PWDSL)
- ii.* Whole band, (in addition to 1785-1800 MHz which is intended to be used for this purpose, which means that the total amount of spectrum to be used for this system is 20 MHz).
- iii.* As soon as possible

Question 2: All four responded YES.

The Reason is summarized as follows:
Use of TFTS frequencies together with the 15 MHz PWSDL band (1785-1800 MHz) will provide the ability to maximize the economies of scale. Users could take advantage of the ability to use PWDSL in different countries within

Europe. This will also provide intelligence, industrial competitiveness, social benefits. It will form a basis for providing medical telemetry, surveillance, utility, distance learning services and development of new terminals and applications.

Question 3: The concept of PWDSL will overcome many disadvantages of earlier FWA/BFWA approaches at lower cost than other high mobility systems.

Question 4: It is desirable but not possible to harmonize the use of these frequencies for this purpose over all regions, however, European harmonization would be preferable.

Question 5: These views also reflect the views of “iBurst” Forum, promotes the interests of manufacturers, developers, operators, consultants and user groups. iBurst Forum also supports the ongoing work of IEEE 802,20 for which this technology is being considered.

Group 3) Proposing the designation of the whole band for “Wireless, high data rate”:

Only 1 response out of 11 was in favour of designating the band for this usage.

Question 1: YES.

- i.* Wireless high data rate
- ii.* Whole band
- iii.* As soon as possible

Question 2: YES.

The Reason: For mobility and new opportunities in telecommunications market.

Question 3: New antenna technology and signal processing would lead to better spectrum efficiency and management, and better quality of service.

Question 4: YES, sure.

Question 5: No

Group 4) Proposing the designation of the whole band for “Real time location system”:

Only 1 response out of 11 was in favour of designating the band for this usage.

Question 1: YES.

- i. Real time location system
- ii. Whole band
- iii. No comment

Question 2: YES.

The Reason: It will provide live stock management, security, wild life research, tracking domestic animals

Question 3: it is a new development and a new innovative system

Question 4: YES

Question 5: No

Summary of the responses from the industry:

Some comments in the responses from industry were similar in nature and these common points are summarised below:

Question 1: *All of them are in favour of harmonised use even if they prefer some different applications. They all prefer to use the whole band.*

Question 2: *They all consider that the harmonised use is important.*

Question 3: *They all refer their proposals as innovative technologies and there is an urgent market demand.*

Question 4: *They all responded that they would prefer global harmonisation.*

Question 5: *There are generally no other comment except for those in favour of PWDSL. They provide some more details on their proposed technology.*



EUROPEAN COMMISSION
Information Society Directorate-General

Communications Services: Policy and regulatory Framework
Radio Spectrum Policy

Brussels,
DG INFSO/B4/(2004)

Brussels, xx xx
2004

MANDATE

Mandate to CEPT on Harmonised Uses for the 1670-1675 MHz and 1800-1805 MHz frequency bands (the “TFTS bands”) to fulfil the needs of the EC internal market

Purpose

Pursuant to art. 4 of the Radio Spectrum Decision, CEPT is mandated to collect information on the current uses of the 1670-1675 MHz and 1800-1805 MHz frequency bands; to identify possible options for the harmonised use of these bands necessary for the establishment and functioning of the internal market in Community areas; and to develop and propose technical and regulatory provisions for such applications.

Justification

In all current Member States, the use of the bands 1670 1675 MHz and 1800 -1805 MHz was reserved by ERC Decision (92)01 for Terrestrial Flight Telecommunications Services (TFTS). However, as a result of the lack of commercial success of this concept, these bands are currently not used at all for TFTS applications. CEPT therefore withdrew the identification of the two bands for TFTS in November 2002 (ECC Decision (02)07). At the same time, it agreed to preserve the harmonised character of the two bands.

In order to meet the needs of Community policies and to foster a more efficient use of the radio spectrum, the harmonised transfer of the identification of the bands from TFTS to other more beneficial application is required at the earliest possible date. For that purpose, various alternative uses should be reviewed, taking into consideration relevant Community policies. While options are completely open for the 1800-1805 MHz band, the ITU World Radiocommunication Conference WRC-2003 has allocated the band 1668 -1675 MHz paired with the 1518-1525 MHz band to the Mobile Satellite Service (MSS) in Region 1, and this decision is expected to be confirmed and implemented in Europe.

The provision of harmonised spectrum for a number of wireless applications within the TFTS bands would support the achievement of objectives of Community policies related to the Information Society, to Transport and to Research and Development. Economies of scale and consequent benefits will only accrue if an effective single market for the free circulation of such applications is set in place by harmonising spectrum usage rules across the EU.

The new EU regulatory regime for electronic communications lays down certain rules as to radio spectrum allocation and assignment. Pursuant to Article 9 par. 1 of the Framework Directive², allocation and assignment of radio frequencies by national regulatory authorities must be based on objective, transparent, non-discriminatory and proportionate criteria. Pursuant to Article 8 of the same Directive, national regulatory authorities shall take the utmost account of the desirability of making regulations technologically neutral and shall promote competition in the provision of electronic communications networks and services by encouraging efficient use and ensuring the effective management of radio frequencies. Any measure should encourage the most efficient operation and greatest uptake of the band in order to optimise use of the scarce resource.

Order and Schedule

1. This mandate is intended to provide a general framework for the development of a common European view on the re-use of the TFTS bands. CEPT is hereby mandated to undertake all relevant work to identify new harmonised conditions of use of the 1670-1675 MHz and 1800-1805 MHz bands in the European Union for specific applications supporting Community objectives in the Information Society, in Transport and in RTD. To do so, the technical feasibility of coexistence of new applications with other radio services shall be explored in detail.

CEPT should also undertake this mandate in full awareness of the results of WRC-03 and of the agenda of WRC-07, as well as of the developing regulatory context outside Europe and of the potential benefits to consumers of achieving globally-compatible conditions of use for the TFTS bands. It is also requested to take into account the state of progress in the development of standards for possible new applications, without making the use of such standards compulsory, to fulfil technology neutrality requirements.

2. In order to achieve the above, CEPT is mandated to:

- schedule the work pursuant to this mandate to take into consideration the different state of progress in identifying new harmonised uses between the lower band, where the implementation of a WRC-03 decision on this band is already underway, and the upper band where no substantial work has been carried out to date to identify new harmonised uses.
- collect information on the existing uses of the bands 1670-1675 MHz and 1800-1805 MHz from European Community Member States, acceding countries and EEA Members, including on legal or other impediments to a Community harmonisation of these bands.
- collect views on possible future spectrum uses by means of a public consultation to be undertaken in collaboration with the European Commission; consider first whether to limit the consultation to the upper band only.
- identify possible future applications for these bands that would benefit from the harmonised status of the bands, taking into account coexistence with other existing services and the need to optimise the use of radio spectrum; in particular the possibilities of accommodating the needs for spectrum to implement European Community policies, such as the development of the Information Society, transport policy, RTD policy, and the strengthening of the single market for equipment and services, should be investigated;

² Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.4.2002, p.33.

- develop and propose a limited list of options for the operation of applications on a harmonised basis in the two bands under investigation, with an indication of preferences and justifications, as well as technical and regulatory provisions as appropriate, justifying this selection on the basis of clear criteria, notably industry and societal demand and potential impact of the chosen applications on Community policies;
- in this context, foster innovative applications and approaches, by for instance analysing licence-free and experimental uses of portions of the bands under consideration, where appropriate;
- undertake all the necessary technical compatibility work between possible new services using either of the two bands and other potentially affected radio services required to develop a new harmonised regulation in the European Union;
- consider the existing and developing regulatory environment, in particular the results of WRC-03 and on-going ITU activities, in the context of studies carried out for agenda item 1.7 of WRC-07;
- summarise the results on the above-mentioned tasks in its reporting to the Commission, including concerning any possible ECC Report(s), Recommendation(s) or Decision(s) covering either band.

3. CEPT is mandated to provide deliverables according to the following schedule:

Delivery date	Deliverable	Subject
Nov 15 th 2004	First Report from CEPT to the Commission	Description of initial work undertaken under this Mandate, including results of public consultation, and schedule for future work. Presentation of work finalised for lower band (1670-1675 MHz)
June 2005*	Final Report from CEPT to the Commission	Description of work undertaken and results achieved under this Mandate.

* The final date of completion of the mandate is dependent on the work agreed following the first report.

In addition, CEPT is requested to report on the progress of its work pursuant to this Mandate to all the meetings of the Radio Spectrum Committee taking place during the course of the Mandate.

4. The results of this Mandate can be made applicable in the European Community pursuant to Article 4 of the Radio Spectrum Decision².

In implementing this Mandate, the CEPT shall, where relevant, take the utmost account of Community law applicable.

² Decision 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community, OJ L 108 of 24.4.2002, p.1.