

Technical Report 012

EBU Positions on WRC-12 Agenda items related to broadcasting



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EBU positions on WRC-12 Agenda items related to broadcasting

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1. Introduction

The goal of this document is to give an overview to EBU members on the WRC-12 issues related to the use of spectrum for broadcasting and the EBU's positions submitted to the WRC-12. The content of the document is mainly based on the work of the relevant EBU groups dealing with spectrum matters and the views expressed by the Members.

1.1 The WRC-12

Organised by the ITU-R roughly every 4 years, a World Radiocommunication Conference (WRC) is to review, and, if necessary, to revise the Radio Regulations: the international treaty governing the use of the radio-frequency spectrum and the satellite orbits. WRC-12 takes place in Geneva from 23 January to 17 February 2012 and will be followed by one in 2015 or 2016.

The basis of work at the Conference is the CPM (Conference Preparatory Meeting) report resulting from the work of ITU-R Study Groups and the inputs from countries. The CPM report includes the summary of the technical studies and also different methods to satisfy each agenda item.

The structure, programme and approval of radiocommunication studies are defined by the Radiocommunication Assemblies (RA). RAs are normally convened every three or four years and may be associated in time and place with WRCs.

The proposals to the WRC are based on proposals from regional organizations such as the CEPT or from countries.

The CEPT prepares proposals for each agenda item during the period from one conference to the next one. These proposals are called European Common Proposals and an accompanying text for each ECP explaining the background is called a Brief. ECPs are not approved unless at least 10 CEPT members co-sign it and not more than 6 are opposing the proposal going forward as an ECP.

1.1.1 Time schedule for WRC-12

The calendar of major events related to WRC-12 is described in the table below.

	Event	Date
1	1 st Conference Preparatory Meeting, CPM12-1	19 - 20 November 2007
2	1 st ITU-R Information meeting on WRC-12 preparations	24 to 25 November 2010
3	2 nd Conference Preparatory Meeting, CPM12-2	14 to 25 February 2011
4	2 nd ITU-R Information meeting on WRC-12 preparations	07 - 08 November 2011
5	Radiocommunications Assembly 2012, RA-12	16 - 20 January 2012
6	World Radiocommunications Conference WRC-12	23 January to 17 February 2012

The first CPM for the next conference to be held in 2015 or 2016, CPM15-1 or CPM16-1 respectively, is scheduled on the 20 - 21 February 2012.

1.2 How the EBU prepares the WRC-12

1.2.1 Coordination with EBU Members

The EBU prepares positions to ensure the protection of broadcasting services from interference from other services and to guarantee that an adequate amount of spectrum is allocated to ensure the future delivery of broadcasting services and programme-making services, such as ENG.

EBU groups dealing with spectrum issues collect Members views and prepare contributions to relevant CEPT and ITU groups. Full details are available (EBU login required) at: <http://workspace.ebu.ch/display/ecsrap/WRC-12+preparations>.

Annex 1 includes a graph showing how the EBU interacts with the main stakeholders involved in the European preparations for WRCs.

1.2.2 Coordination with WBU-TC

As the technical arm of the World Broadcasting Unions¹, the Technical Committee (WBU-TC) is responsible for technical broadcasting issues of importance to the members of the World Broadcasting Unions. The work of the WBU-TC focuses on issues and areas to which all Unions are welcome to contribute to, and which materially affect broadcasting in all regions of the world.

During the preparatory work for WRC12, the broadcasting Unions have regularly exchanged their particular views on the agenda items that are of importance for more than one Union, with the aim to harmonise their views. When possible, a WBU-TC position is prepared with the aim to be submitted as such to the Conference.

¹ The WBU-TC is the standing technical body of the World Broadcasting Unions, whose members are:

Asia-Pacific Broadcasting Union (ABU), Arab States Broadcasting Union (ASBU), The African Union of Broadcasting (AUB), Caribbean Broadcasting Union (CBU), European Broadcasting Union (EBU), International Association of Broadcasting (IAB), North American Broadcasters Association (NABA) and the Organización de Telecomunicaciones Iberoamericanas (OTI)

2. WRC-12 Agenda items related to broadcasting

The WRC-12 agenda is included in Annex 2 for convenience. The EBU has identified the following agenda items related to broadcasting services:

- Agenda Item 1.2: looking to enhance the international regulatory framework
- Agenda Item 1.4: introduction of new aeronautical mobile systems in the bands 112 to 117.975 MHz
- Agenda Item 1.5: looking for harmonization of spectrum for Electronic News Gathering (ENG) which includes wireless microphones, cameras etc.
- Agenda Item 1.13: Use of the band 21.4 to 22 GHz for the broadcasting-satellite service
- Agenda Item 1.17: to consider sharing studies between the mobile service and other services in the band 790 - 862 MHz
- Agenda Item 1.19: to consider regulatory measures and their relevance, in order to enable the introduction of software-defined radio and cognitive radio systems
- Agenda Item 1.25: additional allocations to the mobile satellite service
- Agenda Item 8.2: to recommend items for inclusion in the agenda for the next WRC

The EBU positions are detailed hereafter; they appear in numerical order with respect the Agenda Item number. For information purposes, the CEPT position and EC views are also included.

2.1. Agenda item 1.2: Enhancing the regulatory framework

- 1.2 *taking into account the ITU-R studies carried out in accordance with Resolution 951 (Rev.WRC 07), to take appropriate action with a view to enhancing the international regulatory framework;*

Resolution 951 (Rev.WRC 07): Enhancing the international spectrum regulatory framework

Issue

This agenda item invites WRC-12 to take appropriate action with a view to enhancing the international regulatory framework. WRC-12 should take into account the studies carried out within the ITU-R in accordance with **Resolution 951 (Rev. WRC-07)**.

The main issue on which the ITU-R should find an answer is whether the current international regulatory framework can adequately meet the changing requirements in the radiocommunication spectrum in a way to allow the implementation of new and changing technologies in a timely manner. The agenda item aims at proposing changes to the Radio Regulations that will make the Regulations more responsive to new technological developments and convergence.

In the preparations of the CPM Report, two categories of approaches were developed: one dealing with specific radiocommunication services (Issue A) and the other dealing with general principles (Issue B). Under the specific service approach four methods are proposed to accommodate convergence between applications of the fixed and mobile services. Under the general principles approach, the agenda item is addressed in terms of spectrum allocation principles. Two methods are proposed: Method B1 proposes to keep the current practice and introduces no change to the RR, and Method B2 proposes a WRC Resolution on additional principles of allocating spectrum complementing the existing provisions in the RR. Under Method B2 several diverse options are provided addressing issues in addition to basic principles outlined above.

EBU position

Although Issue A does not address broadcasting services, the EBU is of the view that the current definition of broadcasting services is adequate and should not be modified.

Concerning Issue B, the EBU supports the development of general principles for allocating frequency resources with the aim of making the use of the spectrum more flexible and to facilitate spectrum access to new services and applications. Such principles for allocating frequency resources need to consider the protection and the compatibility with existing services before extending frequency allocations. In particular, the quality and coverage of broadcasting services need to be preserved. To retain a vibrant terrestrial broadcasting platform, spectrum requirements for the future evolution of broadcasting services need to be taken into account.

CEPT position

The CEPT supports the principle of increased flexibility. The CEPT therefore supports actions to improve the international regulatory framework and to increase the flexibility in allocating frequency bands to services, while at the same time ensuring compatibility between services. Allocations should be done in the broadest possible way, under technical, operational and regulatory provisions to ensure technology neutrality as far as possible.

The CEPT is of the opinion that only issues that have international implications should be included in the Radio Regulations.

The CEPT supports as part of the outcome of WRC-12 on Agenda Item 1.2:

- the adoption of a WRC Resolution on the principles for the allocation of frequency bands based on the contents of Recommendation 34;
- that the Radio Regulations should contain appropriate provisions to facilitate the notification of FWA stations while maintaining the present-day balance in sharing conditions and coordination procedures with other services, in particular in bands shared with FSS. The CEPT therefore proposes amendments to the definitions of the fixed service and fixed station as well as associated modifications to Article 11.9 to retain unchanged the situation in bands shared between FS and space services and Appendix 4.

The CEPT further supports that there is no need to change the Radio Regulations under Agenda Item 1.2 at WRC-12 to respond to the convergence of satellite services.

The CEPT is of the view that the provisions described above are sufficient to respond to WRC-12 agenda item 1.2 and that **Resolution 951** should consequently be suppressed.

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that the EU should retain its capability to modernise European spectrum management and encourage the ITU to work towards more flexible approaches.

2.2 *Agenda item 1.4: New aeronautical services in the 112 - 117.975 MHz band*

- 1.4 *to consider, based on the results of ITU-R studies, any further regulatory measures to facilitate introduction of new aeronautical mobile (R) service (AM(R)S) systems*

in the bands 112 - 117.975 MHz, 960 - 1164 MHz and 5000 - 5030 MHz in accordance with Resolutions 413 (Rev.WRC 07), 417 (WRC 07) and 420 (WRC 07);

The EBU only addresses *Resolution 413 (Rev.WRC-07), Use of the band 108 - 117.975 MHz by the aeronautical mobile (R) service*, and in particular the introduction of new aeronautical mobile (R) service (AM(R)S) systems in the band 112 - 117.975 MHz.

Issue

At WRC-07 the allocation to the AM(R)S in the band 108 - 112 MHz was further limited only to ground-based systems that transmit navigational information in support of air navigation functions, while the band 112 - 117.975 MHz was opened to all AM(R)S systems subject to **Resolution 413 (Rev.WRC-07)**. Studies have been completed on the investigation of any compatibility issues between the analogue broadcasting and AM(R) services that may arise from the introduction of AM(R)S systems in the band 112 - 117.975 MHz. These studies indicate that no harmful interference will arise from the introduction of AM(R)S systems in the band 112 - 117.975 MHz into analogue FM broadcasting receivers below 108 MHz and that the both services can operate on a compatible basis. Hence no specific ITU material needs to be developed for the protection of analogue FM broadcasting receivers below 108 MHz from AM(R)S emissions in the band 112 - 117.975 MHz.

Regarding the compatibility with digital broadcasting service below 108 MHz, the matter will be pursued under traditional ITU-R activities and outside the WRC process. The method to satisfy this part of the agenda item proposes modification to **Resolution 413 (Rev.WRC-07)** in such a way that "invites ITU-R" is suppressed.

EBU position

FM radio and digital radio systems should not suffer from increase of interference when new aeronautical systems are introduced in the band 112 - 117.975 MHz.

Any technical or regulatory requirements for protection of new aeronautical systems should not place undue constraints to radio services in Band II.

The EBU supports the results of compatibility studies which showed that no harmful interference will arise from the introduction of AM(R)S systems in the band 112 - 117.975 MHz into FM broadcasting receivers below 108 MHz. EBU also supports that AM(R)S systems operating in the band 112 - 117.975 MHz do not place additional constraints on the broadcasting service or cause harmful interference to stations operating in the bands allocated to the broadcasting service in the frequency band 87 - 108 MHz.

EBU supports additional studies on the compatibility of AM(R)S systems with digital sound broadcasting systems.

CEPT position

Based on ICAO/ITU-R studies, DNR ITU-R M.[FMBC-AM(R)S], the CEPT is of the opinion that no harmful interference will arise from the introduction of AM(R)S systems in the band 112 - 117.975 MHz into FM broadcasting receivers below 108 MHz. **Resolution 413** should be amended to reflect the results of those studies.

Studies are still ongoing concerning the interference from digital broadcasting sound systems into AM(R)S. The CEPT is proposing that this matter will be further pursued under traditional ITU-R activities and outside the WRC process. **Resolution 413** should be amended to reflect this.

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, does not express a view on Resolution 413 of Agenda item 1.4.

2.3 Agenda item 1.5: Harmonisation of spectrum for ENG

- 1.5 *to consider worldwide/regional harmonization of spectrum for electronic news gathering (ENG), taking into account the results of ITU-R studies, in accordance with Resolution 954 (WRC 07);*

Resolution 954 (WRC-07): Harmonization of spectrum for use by terrestrial electronic news gathering systems

Issue

This agenda item is to consider worldwide/regional harmonization of spectrum for electronic news gathering (ENG), taking into account the results of ITU-R studies, in accordance with Resolution 954 (WRC 07).

Use of radio equipment by services ancillary to broadcasting and to programme making (SAB/SAP), commonly described as electronic news gathering (ENG), operating terrestrially in appropriate fixed and mobile service bands is an element in the coverage of public events in all countries where the public interest is served by live news coverage of breaking events, especially disasters or potential disasters affecting public safety.

There is increasing demand from the audiences for the quantity and quality of coverage of sound and television ENG and the similar applications of outside broadcasting (OB) and electronic field production (EFP). The results of surveys conducted toward WRC-07 indicate substantial investments in several frequency bands. Several bands used for SAB/SAP operations are overcrowded and in some cases, severely congested.

There are a number of constraints which prevent homogeneity in TV link operations. Many national spectrum regulatory bodies have their own priorities for spectrum sharing. A worldwide band allocation may not always translate into a band free of any sharing constraints. Additionally, in the absence of any meaningful frequency standardisation, there is enormous diversity of SAB/SAP equipment available from manufacturers in a range of frequency bands from 800 MHz - 17 GHz.

As a result broadcasting organizations must possess diverse equipment in many of these frequency bands, consequently there is little standardisation of the link equipment even on a regional scale.

The main frequency bands currently used for ENG in Europe are listed in REC/ERC 25-10.

Four methods have been identified to satisfy the agenda item and can be categorized into three groups:

- rationalization of the spectrum used by ENG. Method A targets this objective;
- harmonization of tuning ranges within frequency bands for ENG. Methods B and C target this goal. Although these methods pursue a similar objective, they differ in their regulatory implementation and their potential effect towards harmonization;
- a combination of both rationalization and harmonization. Method D attempts to achieve this objective.

EBU position

Agenda item 1.5 aims at harmonising spectrum usage for Electronic News Gathering (ENG). This should be the priority of the method to solve the agenda item.

Broadcasters use a wide range of frequencies for ENG applications. These applications are essential for the production of programmes for news, disaster reporting, sports, and entertainment. EBU Members fear a shortage of spectrum in near future for ENG applications: there is a growing demand for such applications, new technologies (e.g. HDTV) require larger bandwidths and there is a reduction of frequency bands available for these applications (e.g. the 790 - 862 MHz, the 2500 - 2670 MHz bands).

Harmonising spectrum usage on a worldwide scale is desirable (economies of scale, facilitates worldwide events) but it may be difficult to achieve this. The EBU supports the harmonisation of frequency ranges over which radio equipment is capable of working, i.e. 'tuning ranges'. This would provide stability for equipment manufacturers. In addition it would help broadcasters and ENG operators, who cover international events, to be able to use their own equipment across borders.

The EBU supports the development of the ITU-R Recommendations and/or reports which list the preferred frequency bands and tuning ranges for ENG applications (Method C of the CPM report). This would provide the required worldwide/regional harmonisation of tuning ranges and offer enough flexibility to enlarge the list as new tuning ranges are considered by equipment manufacturers.

EBU Members are satisfied with the current level of information, related to spectrum use for ENG, made available by national and regional regulatory bodies. When planning their events across Europe they get the information required to manage with success the operations. The EBU does not believe that any additional measure in that respect, e.g. development of databases, would contribute further to the harmonisation of spectrum usage or to the harmonisation of tuning ranges or to solving the issue of spectrum congestion for ENG.

CEPT position

- The CEPT supports the harmonisation of broad tuning ranges for frequencies for ENG to guide administrations and equipment manufacturers across the world.
- The frequency bands considered for the harmonisation of tuning ranges for ENG should already be allocated to the mobile and/or to the fixed and/or to the broadcasting services, at least in Region 1.
- The CEPT supports Method C (no change at WRC-12 except the suppression of Res 954, development of ITU-R Recommendation or Report with harmonised tuning range within the ITU-R study group framework) in the final CPM-Text. The CEPT intends to propose, instead, the approval of an ITU-R Resolution relating to ENG at the Radio Assembly.

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that the EU should maintain that the Radio Regulations should not be changed under this agenda item, but should encourage the work of the ITU-R to identify tuning ranges through an ITU-R Recommendation, leading to increased de-facto harmonisation.

2.4 **Agenda item 1.13: Use of the 21.4 - 22 GHz band by the Broadcasting Satellite service**

- 1.13 *to consider the results of ITU-R studies in accordance with Resolution 551 (WRC-07) and decide on the spectrum usage of the 21.4 - 22 GHz band for the broadcasting-satellite service (BSS) and the associated feeder-link bands in Regions 1 and 3;*

Resolution 551 (WRC-07): Use of the band 21.4 - 22 GHz for broadcasting-satellite service and associated feeder-link bands in Regions 1 and 3

Issue

Provisions were made at WRC-92 in Torremolinos to make 600 MHz of BSS spectrum available to future HDTV broadcasting in the year 2007, with provisions for experimental transmissions prior to this date. WRC-12 Agenda item 1.13 addresses three main issues:

- Issue A: Regulatory mechanisms for the use of the BSS in the frequency band 21.4 - 22 GHz (intra-service issues).
- Issue B: The need or otherwise to allocate specific frequency band(s) for feeder links of the BSS in Regions 1 and 3 (feeder-link issues).
- Issue C: Regulatory mechanisms for the protection of/sharing between BSS in Regions 1 and 3, on the one hand, and terrestrial services in Regions 1 and 3 as well as those of Region 2, on the other hand (inter-service issues).

EBU position

The EBU supports flexible use of the band 21.4 - 22 GHz, thus promoting the availability of services by satellite, such as HDTV and ultra HDTV or 3D TV in the future. The EBU is not in favour of a priori planning of satellite services because that could restrict access to spectrum and prevent technological developments.

CEPT position

The CEPT is opposed to any a priori planning of the band 21.4 - 22 GHz, proposes to use the procedures of Articles 9 and 11 of the Radio Regulations to address sharing between BSS satellite networks in the 21.4 - 22 GHz band proposes to reduce the size of the coordination arc from $\pm 16^\circ$ to $\pm 6^\circ$ for applying RR No. 9.7 and supports to improve regulatory mechanisms and transparency and truthfulness of the due diligence procedure, i.e. The CEPT supports Methods A, B and C of the CPM report. The CEPT proposes some regulatory amendments accordingly.

In order to maintain flexibility in the design of satellite systems, the CEPT considers that there should be no limitation on the FSS Earth-to-space bands which may be used for the feeder-links of the BSS in the 21.4 - 22 GHz. To ensure a balance between uplink and downlink spectrum within the 30/20 GHz range in Regions 1 and 3, the CEPT proposes to allocate to the fixed-satellite service (Earth-to-space) the band 24.65 - 25.25 GHz in Region 1 and 24.65 - 24.75 GHz in Region 3 with associated mechanism to avoid heavy constraints for future FS development (i.e. minimum earth station antenna diameter of 3.5m and coordination under 9.17).

The CEPT is of the view that terrestrial services in Regions 1, 2 and 3 and the broadcasting-satellite service in Regions 1 and 3 should enjoy the same primary status and proposes to include pfd limits to ensure mutual-coexistence of these services:

- Table 21-4 of Article 21 of the Radio Regulations to protect terrestrial services from the Regions 1 and 3 BSS.
- pfd limit of $-120.4 \text{ dBW}/(\text{m}^2 \cdot \text{MHz})$ to be met at the border of Regions 1 and 3 countries to protect Regions 1 and 3 BSS Earth station from terrestrial services

If WRC-12 adopts such pfd limits in Article 21 to protect terrestrial services in Regions 1, 2 and 3, The CEPT is of the view that such pfd limits should not be retroactively applicable to BSS satellite systems notified before the end of the Conference.

The CEPT is of the view that fixed services and the broadcasting-satellite service in Regions 1 and 3 should co-exist under specific conditions on the same territory. Therefore the CEPT proposes that administrations in Regions 1 and 3 are encouraged to not deploy stations in the mobile service and are encouraged to limit the deployment of stations in the fixed service to point-to-point links.

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that the EU should oppose any division of the 21.4 - 22 GHz band and associated orbital slots into national ITU member state assignments, which would limit its usability.

2.5 Agenda item 1.17: Sharing with the mobile service in the 790 - 862 MHz band

- 1.17 *to consider results of sharing studies between the mobile service (MS) and other services in the band 790 - 862 MHz in Regions 1 and 3, in accordance with Resolution 749 (WRC 07), to ensure the adequate protection of services to which this frequency band is allocated, and take appropriate action;*

Resolution 749 (WRC-07): Studies on the use of the band 790 - 862 MHz by mobile applications and by other services

Issue

Studies have been carried out by the ITU-R to address the compatibility between the mobile service and other services in the band 790 - 862 MHz, taking into account the most recent characteristics for the services concerned. Three issues have been identified, corresponding to the three different sharing pairs with the mobile service:

- Issue A: broadcasting services;
- Issue B: aeronautical service;
- Issue C: fixed service.

Issue A has been further sub-divided by cases according either to an ITU-Region or to whether countries are Contracting Members of the GE06 Agreement (Regional Agreement relating to the planning of the digital terrestrial broadcasting service in Region 1) or not. Appropriate methods have been proposed for each case.

The protection criteria, methodologies to assess interference, and the studies carried out for each issue under this agenda item can be found in the ITU-R Study Group 6 documentation.

The EBU only addresses Issue A, i.e. compatibility between the broadcasting and mobile services.

EBU position

A significant number of studies have shown the effects of multiple interferences from the mobile service transmitters into broadcasting. The EBU and other organisations have actively contributed to the studies in ITU-R on this subject.

Based on the studies, the CPM has concluded that the potential impact of the cumulative effect of interference from base stations, which individually do not trigger the need for coordination with broadcasting, could be significant. However, there is a view that the potential impact of cumulative interference might be less significant in practice. Therefore, it is suggested to draw the attention of the administrations to this unresolved issue.

The EBU considers that the potential impact of the cumulative effect of interference should be taken into account as early as possible in the coordination process in order not to overlook situations where this impact could be significant. This cannot be verified if no consideration is taken during the application of the trigger mechanism of GE06 as implemented by Article 4. Therefore, the preferred option for the EBU is option III (of Method A1 described in section 3/1.17/5.1.1 of the CPM Report, Mandatory arrangements to take account of a potential impact of the cumulative effect of interference from the MS to the BS) because it guarantees a systematic consideration of the cumulative interference.

CEPT position

The CEPT is of the view that there is no need to change the current provisions of the Radio Regulations in force. The provisions of the GE-06 Agreement continue to apply. The CEPT countries support these regulatory provisions and state that these should not be questioned nor reviewed under Agenda Item 1.17.

With respect to the options associated to Method A1 (No Change), CEPT supports option I (no additional arrangements to take account of a potential impact of the cumulative effect of the interference from Ms to BS).

The CEPT acknowledges that Recommendation [JTG 5-6] (WRC-12) may ease coordination between countries at the boundary of the GE-06 area (mobile service in the GE06 area and broadcasting service outside the GE06 area and vice versa) and therefore included one *Recommends* with that respect (*Recommends 1*).

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that all obligations to protect digital broadcasting under the GE-06 agreement should remain in force and no further obligations should be added at the conference.

2.6 Agenda item 1.19: Software defined and cognitive radio systems

- 1.19 *to consider regulatory measures and their relevance, in order to enable the introduction of software-defined radio and cognitive radio systems, based on the results of ITU-R studies, in accordance with Resolution 956 (WRC 07);*

Resolution 956 (WRC-07): Regulatory measures and their relevance to enable the introduction of software-defined radio and cognitive radio systems

Issue

Resolution 956 (WRC-07) resolves to invite the ITU-R to study whether there is a need for regulatory measures related to the application of software defined radio (SDR) and cognitive radio system (CRS) technologies.

SDR and CRS technologies are expected to provide additional flexibility and offer improved efficiency to the overall spectrum use. These technologies can be combined or can be deployed independently and can be implemented in systems of any radiocommunication service. Any system that uses SDR or CRS technologies must operate in accordance with the provisions of the Radio Regulations.

The implementation of SDR and CRS may introduce specific and unique challenges of a technical or operational nature. SDR technology is currently operating in some systems and networks in the LMS, MMS, BS, BSS, FSS and MSS.

Cognitive radio systems are a field of research activity and applications are under study and trial. Systems which use some cognitive features have already been deployed and some administrations are authorizing these systems. These administrations have national equipment approval processes to protect existing services from harmful interference. A radio system implementing CRS technology may, however, have an impact on neighbouring countries and coordination may be needed. Should there be applications in which CRS technology is implemented on a non-interference and non-protection basis, the concerned administration should desirably satisfy itself that interference will not be actually generated.

After the review and analysis of the agenda item, it was concluded that there is no need to modify the Radio Regulations for the implementation of software-defined radios (Method A). For cognitive radio systems, there were two views. The first view was that no changes were needed to the Radio Regulations (Method B1 Option A); however, there is an option to develop an ITU-R Resolution to provide guidance to the ITU-R for future studies on cognitive radio systems (Method B1 Option B). The second view (Method B2) supported the development of a WRC Resolution to provide guidance for future studies and guidance for the implementation of cognitive radio systems and with no further changes to the Radio Regulations.

EBU position

The EBU supports the current regulatory framework for the introduction of SDR and CR devices and the need for sharing studies with existing services. EBU supports the CEPT position of developing an ITU-R Resolution to ask ITU-R study groups to perform sharing studies between CR and other services (CPM text, Method B1 option B).

The introduction of CR devices should be considered in any suitable frequency band (e.g. within the 1 - 6 GHz range) and not only in bands allocated to broadcasting services (e.g. in the white spaces in the 470 - 790 MHz). In addition, it will be important to protect broadcasting and programme-making services.

Broadcasters have interests on SDR & CRSs for broadcasting related applications and the EBU supports research studies in that sense.

CEPT position

The CEPT is of the view that, to satisfy the agenda item, No Change to the Radio Regulations would be required for cognitive radio systems (CRS).

The CEPT supports an ITU-R Resolution to provide guidance for further studies on implementation and use of CRS in any Radiocommunication service within the ITU-R outside the scope of a WRC Agenda item.

The CEPT is also of the view that no regulatory actions would be required for software-defined radio (SDR).

This is based on the following views:

- That SDR and CRS are not radiocommunication services and the definitions of SDR and CRS should not be included into the Radio Regulations.
- That any radio system may implement SDR/CRS techniques within any radiocommunication service as long as it operates in accordance with the provisions of the RR applicable for that specific service in the frequency band allocated to it.
- That SDR and CRS can either be deployed / implemented separately or they can be combined.
- That frequencies or frequency bands (tuning range) for specific applications implementing CRS could be harmonized, as necessary, on worldwide basis in ITU-R Recommendations or regionally.
- That the possible worldwide implementation of a Cognitive Pilot Channel (CPC) could be supported by the development of an ITU-R Recommendation, subject to proper assessment and validation of the merits of this technological approach.

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that the EU should retain its capability to modernise European spectrum management and encourage the ITU to work towards more flexible approaches; on software-defined and cognitive radio, no change in the Radio Regulations seems called for.

2.7 Agenda item 1.25: Spectrum allocations to the mobile satellite service

- 1.25 *To consider possible additional allocations to the mobile-satellite service (MSS), in accordance with Resolution 231 (WRC 07);*

Resolution 231 (WRC-07): Additional allocations to the mobile-satellite service with particular focus on the bands between 4 GHz and 16 GHz

Issue

The ITU-R has undertaken studies of possible bands for new allocations to the MSS in the Earth to space (MSS E-s) and space to Earth (MSS s-E) directions, with particular focus on the range 4 - 16 GHz, taking into account numerous sharing and compatibility aspects and only some bands were identified for further detailed studies. These studies are focused on assessing the feasibility of MSS operations in the following frequency bands: 5150 - 5250 MHz (MSS s-E), 7055 - 7250 MHz (MSS s-E), 8400 - 8500 MHz (MSS E-s), 10.5 - 10.6 GHz (MSS s E), 13.25 - 13.4 GHz (MSS s-E), 15.43 - 15.63 GHz (MSS E-s).

Parts of the 7055 - 7250 MHz and 10.5 - 10.6 GHz bands are used for SAB/SAP applications (video links mainly).

Compatibility studies between the MSS and existing services in the above frequency bands have been performed by the relevant ITU-R Study Groups. Taking into account the cumulative impact of all aspects identified during the studies, the sharing between incumbent services and new MSS applications would practically not be feasible in the frequency bands 7055 - 7250 MHz and 10.5 - 10.6 GHz due to severe operational constraints that MSS systems may suffer to achieve compatibility with affected current and future systems of other services and due to interference that may be caused by MSS to other services to which the frequency band is allocated.

Furthermore provisions of **Resolution 231 (WRC-07)** inviting the ITU-R to place “no undue constraints on existing systems operating in accordance with the Radio Regulations” could not be complied with considering the constraints which would have to be imposed on existing services in order to allow for viable MSS operations.

EBU position

The EBU does not support allocations to the mobile satellite service in the 7055 - 7250 MHz and 10.5 - 10.6 GHz bands. These bands are used for ENG applications; sharing with the mobile satellite service would only be possible under so restrictive conditions that the ENG operation would not be guaranteed with the required quality of service.

Current CEPT position

Based on the results of the relevant ITU-R sharing studies, the CEPT has concluded not to support new MSS allocations in the frequency range 4 to 16 GHz.

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that the EU should defend a position that provides mobile satellite services with the spectrum necessary to deliver services for air traffic management in Europe.

2.8 Agenda item 8.2: Agenda items for next WRC

- 8.2 *to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 806 (WRC 07),*

Resolution 806 (WRC-07): Preliminary agenda for WRC-15

Issue

Standing agenda item for the World Radiocommunication Conferences is to recommend to the ITU Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences.

The principles for the development of the agenda for future World Radiocommunication Conferences are contained in **Resolution 804 (WRC-07)**.

The EBU only addresses at this point of time the proposal from the CEPT for an agenda item on additional spectrum allocations to the mobile service for mobile broadband applications and identification for IMT.

EBU position

The EBU believes that any consideration of extension of mobile services into the broadcasting bands below 790 MHz would substantially hinder the future development of the digital terrestrial television platform. The need for additional spectrum should be studied and any new allocation should be restricted to the 1 - 6 GHz frequency range.

The EBU is of the view that existing linear terrestrial distribution of broadcasting content serving a very large number of consumers requires sufficient frequency resources. In addition, future hybrid forms of distribution of broadcasting content will increasingly be developed and the broadband component of hybrid distribution also requires appropriate spectrum resources. It is expected that the traffic on corresponding mobile service networks will be highly asymmetric, i.e. the network needs to foresee large capacity for individual downlink connections while the corresponding uplinks will give rise to low data traffic only. It has to be checked if spectrum already allocated to the mobile service can be utilized for these kinds of purposes or if spectrum usage can be optimized in order to enable such applications.

To meet the foreseen requirements of wireless broadband it is needed to study which spectrum ranges would provide the foreseen capacities for downlink connections. To this end it is necessary to assess the use of existing allocations to the mobile service with a view of efficient usage and conceivable options for optimisation of spectrum usage.

Compatibility studies between MS and other services as well as studies on spectrum demand should be performed in a Joint Task Group comprising all potentially concerned ITU-R Study Groups.

Band reallocations should only be made with prior favourable results of technical sharing studies while taking into account the spectrum requirements of the currently allocated services.

CEPT position

The CEPT proposes an agenda item on additional spectrum allocations to the mobile service for mobile broadband applications and identification for IMT as follows:

to consider spectrum requirements for the development of terrestrial mobile broadband applications and possible regulatory actions, including additional allocations to the mobile service and identification of bands for IMT, taking into account Resolution [MOBILE]

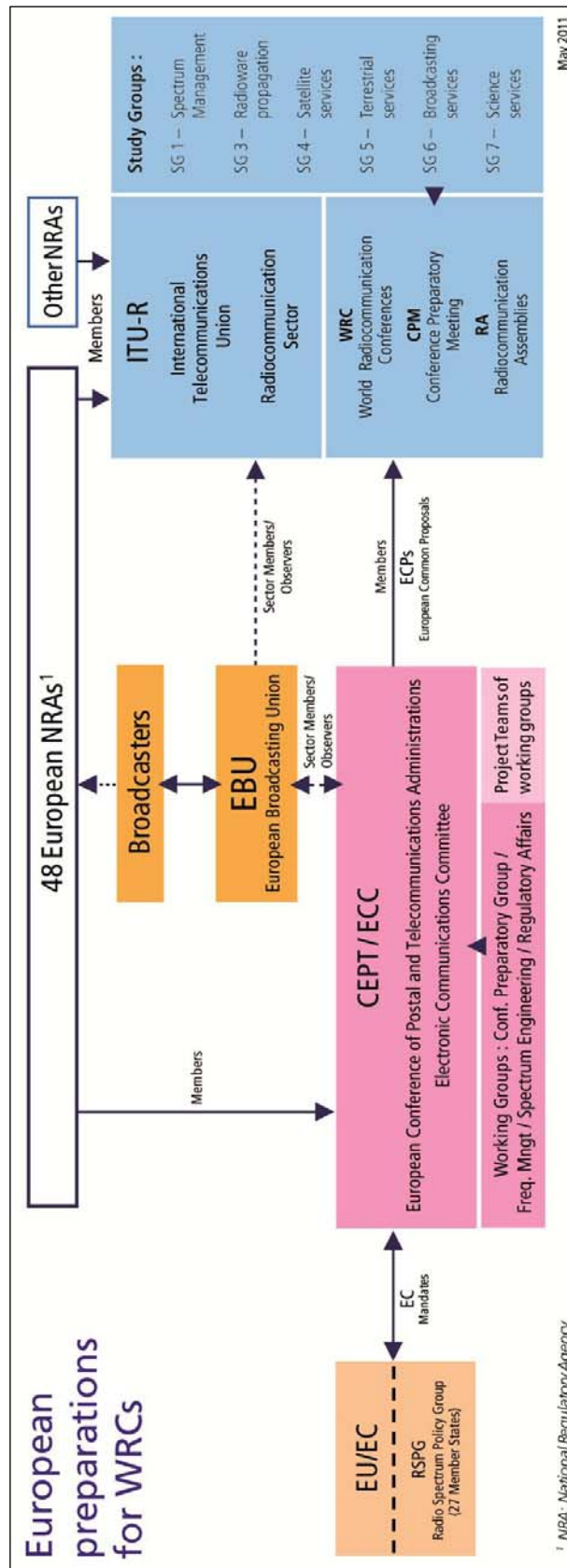
The Resolution [MOBILE], which gives detail of the studies to be performed:

- does not mention any specific frequency band,
- asks for studies to define capacity requirements for wireless broadband applications and to analyse the different technical possibilities to satisfy them,
- asks to take into account the most efficient technologies and optimise the use of exiting spectrum allocations to the fixed and/or mobile services and
- asks to take into account the spectrum needs for existing services, as well as evolving needs

EC views

The European Commission, in its communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions COM(2011) 180 final, expresses the view that the next WRC-15 agenda, which will be set in 2012, should address potential spectrum needs arising from important EU policies. In particular, it should include an item to respond to possible capacity constraints on the provision of wireless broadband in line with the aims of the Digital Agenda for Europe.

Annex 1: European preparations for WRCs



Annex 2: Agenda for WRC-12

RESOLUTION 805 (WRC-07)

Agenda for the 2012 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2007),

considering

- a) that, in accordance with No. 118 of the ITU Convention, the general scope of the agenda for a world radiocommunication conference should be established four to six years in advance and a final agenda shall be established by the Council two years before the conference;
- b) Article 13 of the ITU Constitution relating to the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention relating to their agendas;
- c) the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

recognizing

- a) that this Conference has identified a number of urgent issues requiring further examination by WRC-12;
- b) that, in preparing this agenda, many items proposed by administrations could not be included and have had to be deferred to future conference agendas,

resolves

to recommend to the Council that a world radiocommunication conference be held in 2012 for a period of four weeks, with the following agenda:

- 1 on the basis of proposals from administrations, taking account of the results of WRC 07 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the bands under consideration, to consider and take appropriate action with respect to the following items:
 - 1.1 to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account **Resolution 26 (Rev.WRC 07)**;
 - 1.2 taking into account the ITU-R studies carried out in accordance with **Resolution 951 (Rev.WRC 07)**, to take appropriate action with a view to enhancing the international regulatory framework;

- 1.3 to consider spectrum requirements and possible regulatory actions, including allocations, in order to support the safe operation of unmanned aircraft systems (UAS), based on the results of ITU-R studies, in accordance with **Resolution 421 (WRC 07)**;
- 1.4 to consider, based on the results of ITU-R studies, any further regulatory measures to facilitate introduction of new aeronautical mobile (R) service (AM(R)S) systems in the bands 112 - 117.975 MHz, 960 - 1164 MHz and 5000 - 5030 MHz in accordance with **Resolutions 413 (Rev.WRC 07), 417 (WRC 07) and 420 (WRC 07)**;
- 1.5 to consider worldwide/regional harmonization of spectrum for electronic news gathering (ENG), taking into account the results of ITU-R studies, in accordance with **Resolution 954 (WRC 07)**;
- 1.6 to review No. 5.565 of the Radio Regulations in order to update the spectrum use by the passive services between 275 GHz and 3000 GHz, in accordance with **Resolution 950 (Rev.WRC 07)**, and to consider possible procedures for free-space optical-links, taking into account the results of ITU-R studies, in accordance with **Resolution 955 (WRC 07)**;
- 1.7 to consider the results of ITU-R studies in accordance with **Resolution 222 (Rev.WRC 07)** in order to ensure long-term spectrum availability and access to spectrum necessary to meet requirements for the aeronautical mobile-satellite (R) service, and to take appropriate action on this subject, while retaining unchanged the generic allocation to the mobile-satellite service in the bands 1525 - 1559 MHz and 1626.5 - 1660.5 MHz;
- 1.8 to consider the progress of ITU-R studies concerning the technical and regulatory issues relative to the fixed service in the bands between 71 GHz and 238 GHz, taking into account **Resolutions 731 (WRC 2000) and 732 (WRC 2000)**;
- 1.9 to revise frequencies and channelling arrangements of Appendix 17 to the Radio Regulations, in accordance with **Resolution 351 (Rev.WRC 07)**, in order to implement new digital technologies for the maritime mobile service;
- 1.10 to examine the frequency allocation requirements with regard to operation of safety systems for ships and ports and associated regulatory provisions, in accordance with **Resolution 357 (WRC 07)**;
- 1.11 to consider a primary allocation to the space research service (Earth-to-space) within the band 22.55 - 23.15 GHz, taking into account the results of ITU-R studies, in accordance with **Resolution 753 (WRC 07)**;
- 1.12 to protect the primary services in the band 37 - 38 GHz from interference resulting from aeronautical mobile service operations, taking into account the results of ITU-R studies, in accordance with **Resolution 754 (WRC 07)**;
- 1.13 to consider the results of ITU-R studies in accordance with **Resolution 551 (WRC 07)** and decide on the spectrum usage of the 21.4 - 22 GHz band for the broadcasting-satellite service and the associated feeder-link bands in Regions 1 and 3;
- 1.14 to consider requirements for new applications in the radiolocation service and review allocations or regulatory provisions for implementation of the radiolocation service in the range 30 - 300 MHz, in accordance with **Resolution 611 (WRC 07)**;
- 1.15 to consider possible allocations in the range 3 - 50 MHz to the radiolocation service for oceanographic radar applications, taking into account the results of ITU-R studies, in accordance with **Resolution 612 (WRC 07)**;

- 1.16 to consider the needs of passive systems for lightning detection in the meteorological aids service, including the possibility of an allocation in the frequency range below 20 kHz, and to take appropriate action, in accordance with **Resolution 671 (WRC 07)**;
- 1.17 to consider results of sharing studies between the mobile service and other services in the band 790 - 862 MHz in Regions 1 and 3, in accordance with **Resolution 749 (WRC 07)**, to ensure the adequate protection of services to which this frequency band is allocated, and take appropriate action;
- 1.18 to consider extending the existing primary and secondary radiodetermination-satellite service (space-to-Earth) allocations in the band 2483.5 - 2500 MHz in order to make a global primary allocation, and to determine the necessary regulatory provisions based upon the results of ITU-R studies, in accordance with **Resolution 613 (WRC 07)**;
- 1.19 to consider regulatory measures and their relevance, in order to enable the introduction of software-defined radio and cognitive radio systems, based on the results of ITU-R studies, in accordance with **Resolution 956 (WRC 07)**;
- 1.20 to consider the results of ITU-R studies and spectrum identification for gateway links for high altitude platform stations (HAPS) in the range 5850 - 7075 MHz in order to support operations in the fixed and mobile services, in accordance with **Resolution 734 (Rev.WRC 07)**;
- 1.21 to consider a primary allocation to the radiolocation service in the band 15.4 - 15.7 GHz, taking into account the results of ITU-R studies, in accordance with **Resolution 614 (WRC 07)**;
- 1.22 to examine the effect of emissions from short-range devices on radiocommunication services, in accordance with **Resolution 953 (WRC 07)**;
- 1.23 to consider an allocation of about 15 kHz in parts of the band 415 - 526.5 kHz to the amateur service on a secondary basis, taking into account the need to protect existing services;
- 1.24 to consider the existing allocation to the meteorological-satellite service in the band 7750 - 7850 MHz with a view to extending this allocation to the band 7850 - 7900 MHz, limited to non-geostationary meteorological satellites in the space-to-Earth direction, in accordance with **Resolution 672 (WRC 07)**;
- 1.25 to consider possible additional allocations to the mobile-satellite service, in accordance with **Resolution 231 (WRC 07)**;
- 2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with **Resolution 28 (Rev.WRC 03)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex 1 to **Resolution 27 (Rev.WRC 07)**;
- 3 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the Conference;
- 4 in accordance with **Resolution 95 (Rev.WRC 07)**, to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

- 5 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention;
- 6 to identify those items requiring urgent action by the Radiocommunication Study Groups in preparation for the next world radiocommunication conference;
- 7 to consider possible changes in response to **Resolution 86 (Rev. Marrakesh, 2002)** of the Plenipotentiary Conference: "Advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks", in accordance with **Resolution 86 (Rev.WRC 07)**;
- 8 in accordance with Article 7 of the Convention:
 - 8.1 to consider and approve the Report of the Director of the Radiocommunication Bureau:
 - 8.1.1 on the activities of the Radiocommunication Sector since WRC 07;
 - 8.1.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and
 - 8.1.3 on action in response to **Resolution 80 (Rev.WRC 07)**;
 - 8.2 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account **Resolution 806 (WRC 07)**,

resolves further

to activate the Conference Preparatory Meeting and the Special Committee on Regulatory/Procedural Matters,

invites the Council

to finalize the agenda and arrange for the convening of WRC-12, and to initiate as soon as possible the necessary consultations with Member States,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a report to WRC-12,

instructs the Secretary-General

to communicate this Resolution to international and regional organizations concerned.