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PLENARY MEETING

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Note by the Secretary-General

WBU-TC VIEWS ON WRC12 AGENDA ITEMS 1.2, 1.4, 1.10, 1.13, 1.14, 1.15, 1.17, 1.19, 1.25 AND 8.2

I have the honour to bring to the attention of the Conference, at the request of the World Broadcast Unions' Technical Committee (WBU-TC) the annexed information paper.

Dr Hamadoun I. TOURÉ
Secretary-General

Annex: 1 (English only)

English only

ANNEX

Introduction

The World Radiocommunication Conference (WRC-12) being held in Geneva, Switzerland, from January 23 to February 17, 2012, will make decisions on new frequency allocations to Radiocommunication Services, amendments to the Radio Regulation and adopt a draft agenda for the next WRC.

A number of the WRC-12 Agenda Items are pertain to changes to the RR which may affect the broadcasting industry and the ability of broadcasters to deliver and distribute content to their audiences in an efficient and cost effective manner.

This paper outlines the views of the WBU-TC[1] on WRC-12 Agenda Items which may affect the operations of the WBU-TC members.

In order to respond to the challenge, this contribution documents WBU-TC views for each conference Agenda Item of interest to the world broadcasting community.

[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)
- Organizacion de Telecommunicaciones Iberoamericanas (OTI)

AGENDA ITEM 1.2

*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*

Background

ITU-R carried out studies in accordance with Resolution 951 (Rev.WRC-07). General allocation or procedural issues relating to general spectrum management solutions for enhancing the Radio Regulations (RR) have been examined to meet the demands of current, emerging and future radio applications, while taking into account existing services and usage. Extensive ITU-R studies were undertaken and various solutions have been developed which reflect the differing views. Beyond the general analysis of the four options in Resolution 951 (Rev.WRC-07), different studies related to the issue(s) of convergence and how to reflect current and future technologies in the international spectrum regulatory framework have been addressed. These studies reviewed the current regulatory framework with the view to address the objectives in specific (Issue A) or generic (Issue B) manner. The attempt to develop broad regulatory changes that would apply across a significant portion of the Radio Regulations has been challenging.

Two categories of approaches were developed, one dealing with specific Radiocommunication Services and the other dealing with general principles. Under the specific service approach, four methods are proposed to accommodate convergence between applications of the FS and MS. Method A1 proposes to keep the current practice and introduces no change to the RR. Method A2 proposes changes to the definitions to the FS, fixed station, mobile station, and land station. Method A3 proposes changes to the definition of the FS and other related provisions in the RR (Article 11 and Appendix 4). Method A4 proposes modifications of Appendix 4 of the RR related to the FS without proposing any changes to the definitions. 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 the basic principles outlined above.

WBU-TC VIEW

WBU-TC supports maintaining the existing Broadcasting Service definition in the Radio Regulations. Regarding possible changes by WRC-12 to the definitions of the Terrestrial Fixed or Mobile Services, WBU-TC is of the view that such changes may not be enacted without the benefit of a thorough technical, operational and regulatory review of their impact on the BS, BSS and FSS (CPM method A1).

AGENDA ITEM 1.4

*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, 960-1 164 MHz and 5 000-5 030 MHz in accordance with Resolutions **413 (Rev.WRC-07)**, **417 (WRC-07)** and **420 (WRC-07)**;*

Resolution 413 (Rev.WRC-07)

Use of the band 108-117.975 MHz by the aeronautical mobile (R) service

Background

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 further ITU-R studies are needed towards the development of technical criteria 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.

To enable the performance of the studies, the final CPM report includes an example modification of Resolution 413 (Revision WRC-07) to invite the ITU-R to study the compatibility between AM(R)S and digital audio broadcasting systems and develop new or revised Recommendations on the AM(R)S/Digital Sound Broadcasting compatibility. The example modified Resolution in the final CPM report fully reflects WBU-TC's views and, if adopted by WRC-12, will ensure the performance of future ITU-R studies on the compatibility between Digital Sound Broadcasting systems and AM(R)S would not impose additional constraints to Digital Sound Broadcasting systems.

WBU-TC VIEW

WBU-TC fully supports the findings of the CPM report on the use of the band 108-117.975 MHz by the aeronautical mobile (R) service and Resolution 413 (Rev.WRC-07) (Method A in the CPM Report).

AGENDA ITEM 1.10

Agenda Item 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)**;*

Resolution **357 (WRC-07)**: *Consideration of regulatory provisions and spectrum allocations for use by enhanced maritime safety systems for ships and ports*

WBU-TC VIEWS

1. According to the CPM report the issue of regulatory status of AIS 1 and 2 will impact on the existing fixed and mobile services. In some countries in Region 3 ENG applications in the mobile service are used in the portions of the band 156.8375 to 174 MHz.

2. WBU-TC is of the view that since regulatory modifications on the review of AIS 1 and AIS 2 must not cause any severe impact on ENG applications in the mobile service in the adjacent bands 156.8375-174 MHz, Method A2 may be acceptable. WBU-TC suggests in adoption of Method A1 prudent action will be required in order to confirm the current exclusive usage of AIS1 and AIS 2 in the bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz.

3. WBU-TC supports Method A1 which introduces primary allocation to the maritime mobile service and secondary allocations to the aeronautical mobile and mobile-satellite (Earth-to-space) services in the Table of Frequency Allocations) in the bands 161.9625-161.9875MHz and 162.0125-162.0375MHz and suppressing RR No.5.227A.

AGENDA ITEM 1.13

*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;*

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*.

WARC-92 allocated the band 21.4-22.0 GHz in Regions 1 and 3 to the BSS to be implemented after 1 April 2007. The use of the band since 1992 was subject to an interim procedure in accordance with Resolution **525** (**WARC-92** and **Rev.WRC-03**).

In the interim procedures of Resolution **525 (Rev.WRC-07)** it is indicated that after 1 April 2007 all services other than the BSS in the band 21.4-22.0 GHz in Regions 1 and 3 operating in accordance with the Table of Frequency Allocations may operate subject to not causing harmful interference to BSS (high-definition television (HDTV)) systems nor claiming protection from such systems.

Resolution **551** (**WRC-07**) *resolves* that ITU-R continue technical and regulatory studies on harmonization of spectrum usage, including planning methodologies, coordination procedures or other procedures, and BSS technologies, in preparation for WRC-12, in the 21.4-22 GHz band and the associated feeder-link bands in Regions 1 and 3, taking into account *considering h)* and *i)*. Resolution **551** (**WRC-07**) also *resolves* that WRC-12 review the results of the studies and decide the usage of the 21.4-22 GHz band and the associated feeder-link bands in Regions 1 and 3.

WBU-TC VIEWS

1. The 21.4-22.0 GHz band has been recognized as one of the most favourable frequency bands in which advanced digital satellite broadcasting applications which require larger bandwidth capacity than ever before can be successfully implemented. Those applications include UHDTV (Ultra High Definition Television), 3DTV (Three Dimensional Television), VIS (Digital Multimedia Video Information System), Multi-channel HDTV, LSDI (Large Screen Digital Imagery) and EHRI (Extremely High Resolution Imagery) which have been studied in Study Group 6 to enhance the broadcasting services.

2. The WBU-TC generally supports current technical and regulatory studies in ITU-R in accordance with Resolution 551 (WRC-07) to decide on the technical arrangements and spectrum usage of the 21.4–22.0 GHz band for the broadcasting-satellite service.

4. The arrangements arrived at WRC-12 should take into account the need for ensuring the availability of the 21.4-22 GHz band BSS spectrum to all countries, as appropriate.

5. In order to overcome the large rain attenuation in Region 3 countries, the pfd value of - 105 dB(W/(m^2·MHz)) should be considered as the maximum pfd at the Earth's surface in studies on sharing for the BSS in the band 21.4-22.0 GHz.

6. The WBU-TC recognizes the status of 'super primary' which is provided to Regions 1 and 3 BSS in the band 21.4-22.0 GHz, with respect to other services in Regions 1 and 3 in accordance with Resolution 525 (Rev. WRC-07).

7. The WBU-TC supports a continuous band of 600 MHz that can be used for associated feeder-links of the BSS in the band 21.4-22.0 GHz, without a reduction of the frequency band already allocated to the FSS for use by BSS feederlinks.

AGENDA ITEM 1.14

Agenda Item 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)**;*

Resolution **611 (WRC-07)**: *Use of portion of the VHF band by the radiolocation service*

It should be noted that *resolves parts of* **Resolution 611 (WRC-07)** are;

"1 that WRC-11 consider a primary allocation to the radiolocation service in the portion of the band 30-300MHz for the implementation of new applications in the radiolocation service, with bandwidth no larger than 2MHz, taking into account the results of ITU-R studies;

"2 that the introduction of new systems in the radiolocation service shall be avoided in the frequency bands 156.4875-156.8375MHz and 161.9625-162.0375 MHz, which are used by distress and safety applications in the maritime mobile service;

WBU-TC VIEWS

1. The long protection distance between radiolocation services and existing FS/MS services will not be practical because this may require additional coordination among relating countries. Furthermore, the protection distances for mobile services and radiolocation service varies depending on the location of the mobile stations, therefore, the determination of the distance will not be practical.

2. WBU-TC is of the view that since regulatory modifications of allocating new frequency band for radiolocation services must not cause any severe impact on ENG applications in and the adjacent bands. WBU-TC suggests in adoption of Method D (**NOC** and suppression of **Resolution 611(WRC-07)**).

AGENDA ITEM 1.15

Agenda Item 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)**;*

Resolution **612 (WRC-07)**: *Use of the radiolocation service between 3 and 50 MHz to support high-frequency oceanographic radar operations*

WBU-TC VIEWS

1. WBU-TC supports the view that the new spectrum allocation for radiolocation service for oceanographic radar must not cause any impact on broadcasting service. In addition, new frequency allocations in the band for MS especially ENG applications on 26.574 MHz, 38.96 MHz, and a band 40.68 – 47.27 MHz should be avoided because as described in Recommendation ITU-R M.1824, these bands are often used with live broadcasting program. Therefore, WBU-TC supports METHOD B or C; allocating RLS on a secondary basis on the frequency bands which are used by ENG applications.

2. WBU-TC supports Method C for the new allocation of RLS taking existing BAS operation frequencies allocation into consideration.

AGENDA ITEM 1.17

Agenda Item 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*

Background

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.

WBU-TC only addresses Issue A, i.e. compatibility between the broadcasting and mobile services.

WBU-TC VIEWS

1. A significant number of studies have shown the effects of multiple interference from the mobile service transmitters into broadcasting. The EBU and other organisations have actively contributed to studies in ITU-R on this subject. The WBU-TC supports the studies and conclusions reported to the CPM11-2 by the ITU-R JTG5-6 Group.

2. 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.

3. The WBU-TC 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 for the countries which are contracting members of the GE06. Therefore, the preferred option for the WBU-TC for those countries is option III (of Method A1 described in section 3/1.17/5.1.1 of the CPM text) because it guarantees a systematic consideration of the cumulative interference.

4. Concerning other regions, it must be noted that some countries in Region 3 will continue with analogue television broadcasting and some other existing services (i.e. ENG) e.g. fixed point to point links and land mobile services in Bands 470-862MHz for the foreseeable future. The WBU-

TC is of the view that the services already operating in the band 790-862 MHz have to be protected against interference from the entry of any new services (IMT, etc) that are considered for this band, and therefore supports the draft Recommendation [JTG 5-6] (WRC-12) stated in the CPM Report to WRC-12.

AGENDA ITEM 1.19

*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*

Summary

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).

WBU-TC VIEW

For software defined and cognitive radio systems WBU-TC supports "no changes" to the Radio Regulations and suppression of Resolution 956. (METHOD B1 of the CPM Report)

AGENDA ITEM 1.25

Agenda Item 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*

Background

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: 5 150 - 5 250 MHz (MSS s-E), 7 055 - 7 250 MHz (MSS s-E), 8 400 - 8 500 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 7 055 - 7 250 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 7 055 - 7 250 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 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.

WBU-TC VIEWS

WBU-TC does not support allocations to the mobile satellite service in the 7 055 - 7 250 MHz, 8 400-8 500 MHz and 10.5 - 10.6 GHz bands (Method B1 and D1 of the CPM report) . 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.

AGENDA ITEM 8.2 (Broadband)

Agenda Item 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)***

Issue

Agenda Item 8.2 is a standing agenda item for the World Radiocommunication Conferences. Its purpose 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)**.

A number of Administrations are proposing the adoption of WRC-16 Agenda Item for the allocation of 500 MHz of spectrum for wireless broadband applications in the 400MHz-6GHz range. The target frequency segment is heavily used by broadcasting for over-the-air content delivery (Terrestrial and Satellite), electronic news gathering and distribution of program material. In the event parts of the broadcasting spectrum is reallocated or repurposed for other uses, broadcasters will be forced to make substantial new capital investment in new distribution and ENG facilities and equipment. Over-the-Air broadcasting and satellite delivery of content will become problematic, at best, and future opportunities for the delivery of new services such as mobile TV and 3D TV will be severely diminished.

WBU-TC VIEWS

1. WBU-TC believes that any consideration of extension of mobile services into the broadcasting bands below 790 MHz would substantially hinder the future development of digital over-the air terrestrial television platform.

- The current linear terrestrial delivery of broadcasting is a very spectrum efficient method to reach large number of viewers and therefore it should be preserved.
- Consideration should be given to the spectrum needs of future forms of content delivery and distribution such as 3DTV, Mobile TV, Hybrid Broadcasting etc.

2. The use of the current FSS and BSS allocations by satellite systems for broadcasting applications, as well as the ability of these systems to deliver and distribute broadcast services, should also be preserved.

3. The use of the existing mobile and fixed allocations should be studied and solutions should be found to improve their spectrum efficiency.

4. 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.

5. 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.