

**2nd ITU INTER-REGIONAL WORKSHOP
ON WRC-15 PREPARATION
(Geneva, 12 – 13 November 2014)**

**Panel 1 Discussions on
WRC-15 Agenda items
1.1 and 1.2**

**2nd ITU INTER-REGIONAL
WORKSHOP ON WRC-15
PREPARATION**

**GENEVA, SWITZERLAND
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CPM Report***

- *to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)***

Summary of Studies

- Section 1/1.1/3 describes:
 - the results of ITU-R studies that estimate the global spectrum requirements for International Mobile Telecommunications (IMT) to be in the range of 1 340 to 1 960 MHz for the year 2020, the first number being for lower user density settings and the second number for higher user density settings;
 - the results of ITU-R studies that indicate the minimum spectrum requirement for radio local area networks (RLANs) using the 5 GHz frequency range in the year 2018 is estimated to be 880 MHz;
 - the sharing and compatibility studies conducted by the ITU-R for various frequency ranges.

Analysis of the results of studies

- Section 1/1.1/4 includes:
 - analyses of the results of studies for various potential candidate frequency bands and ranges;
 - a list of potential candidate frequency bands:
470-694/698 MHz, 1 350-1 400 MHz, 1 427-1 452 MHz,
1 452-1 492 MHz, 1 492-1 518 MHz, 1 518-1 525MHz,
1 695-1 710 MHz, 2 700-2 900 MHz, 3 300-3 400 MHz,
3 400-3 600 MHz, 3 600-3 700 MHz, 3 700-3 800 MHz,
3 800-4 200 MHz, 4 400-4 500 MHz, 4 500-4 800 MHz,
4 800-4 990 MHz, 5 350-5 470 MHz, 5 725-5 850 MHz,
and 5 925-6 425 MHz.

Draft Methods

The following draft methods may be applied to potential candidate frequency bands:

- **Method A** – No change, which may be accompanied by reasons.
- **Method B** – Make an allocation to the MS on a primary basis (either by a new allocation or the upgrade of an existing secondary allocation) with a view to facilitate the development of terrestrial mobile broadband applications.
 - **Method B-ToA** - Make an allocation to the MS on a primary basis in the Table of Frequency Allocations.
 - **Method B-FN** - Make an allocation to the MS on a primary basis in a footnote.
- **Method C** - To identify the frequency band for IMT either in a new or existing footnote. This Method can be applied individually if there is already a primary mobile allocation or in conjunction with Method B.

Draft Methods – continued

In addition, any condition of use specific to a frequency band by the MS or IMT systems will be described under the specific frequency band under Methods B and/or C.

Other considerations - Current status of the frequency band: There is an allocation on a primary basis for the MS for a frequency band in a Region and it is identified for IMT in certain countries in that Region. Those countries which may wish to add their names to that footnote can submit proposals to WRC-15 taking into account Resolution **26 (Rev.WRC-07)** in accordance with Resolution **233 (WRC-12)**.

Applicability of draft methods and options

- Method A – **No change** is applicable to all candidate frequency bands.
- Method B – **Allocation to the MS on a primary basis** is applicable to candidate frequency bands in regions where there is currently no primary mobile allocation
- Method C – **IMT identification** is applicable to all candidate bands except for 5350-5470 MHz and 5725-5850 MHz

In addition to the above methods, options exist that may be applied to specific candidate frequency bands under various methods. The following table shows which methods and how many options exist for the candidate frequency bands.

Number / Bands (MHz)	Applicable Possible Options from Section 5			
	Method A	Method B-ToA	Method B-FN	Method C
1 / 470-694/698	A A1, A2, A3	B B1, B2, B3	B B4	C C1
2 / 1 350-1 400	A	B B1	B B1	C C1a, C1b, C2
3 / 1 427-1 452	A			C C1a, C1b, C2, C3
4 / 1 452-1 492	A	B	B	C C1, C2, C3, C4
5 / 1 492-1 518	A			C C1, C2, C3, C4
6 / 1 518-1 525	A	B	B	C C1, C2, C3

Number / Bands (MHz)	Applicable Possible Options from Section 5			
	Method A	Method B-ToA	Method B-FN	Method C
7 / 1 695-1 710	A	B	B	C C1
8 / 2 700-2 900	A	B Opt1, Opt2	B Opt1, Opt2	C Opt1
9 / 3 300-3 400	A	B Opt1	B Opt1	C
10 / 3 400-3 600	A	B B1, B2, B3, B4	B B1, B2, B3, B4	C C1, C2, C3, C4
11 / 3 600-3 700	A	B B1, B2	B B1, B2	C C1, C2
12 / 3 700-3 800	A	B B1, B2	B B1, B2	C C1, C2
13 / 3 800-4 200	A	B B1, B2	B B1, B2	C C1, C2
14 / 4 400-4 500	A			C
15 / 4 500-4 800	A			C C1, C2, C3
16 / 4 800-4 990	A			C
17 / 5 350-5 470	A			
18 / 5 725-5 850	A			
19 / 5 925-6 425	A			C C1, C2, C3, C4

Note: Options above are those listed and described in section 5, of the draft CPM text, that could be applied under particular methods. In some cases, the option is referred to differently in section 6, has no regulatory example or is applied to a different method than what is described in section 5.

- *to examine the results of ITU-R studies, in accordance with Resolution **232 (WRC-12)**, on the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service in Region 1 and take the appropriate measures*

Summary of Studies

- Section 1/1.2/3 describes:
 - Spectrum requirements for the BS and the MS;
 - Sharing and compatibility studies between the BS and the MS;
 - Sharing and compatibility studies between the ARNS and the MS;
 - Solutions for SAB/SAP.

Analysis of the results of studies

- Section 1/1.2/4 includes:
 - The analysis of studies between the BS and the MS;
 - The analysis of studies between the ARNS and the MS;
 - The analysis of solutions for SAB/SAP.

Draft Methods

Section 1/1.2/5 contains the methods to satisfy the agenda item for the following four issues:

Issue A: Option for the refinement of the lower band edge.
The one draft method proposes this to be set at 694 MHz

Issue B: Technical and regulatory conditions applicable to the MS concerning the compatibility between the MS and the BS.

Four draft methods B1, B2, B3, B4

GE-06 Agreement applies in all methods.

B1 – No Change (no additional measures needed)

B2 – Reference ITU-R Recommendations, which specify a set of technical conditions applicable to MS stations and protection to the BS below 694 MHz), in a footnote to the allocation in the RR

B3 – Additional technical conditions & regulatory mechanisms for the protection of the BS provided in a new or revised WRC-15 Resolution

B4 – RR No. 9.21 applies for the operation of the MS in relation to the protection of the BS

Issue C: Technical and regulatory conditions applicable to the MS concerning the compatibility between the MS and the ARNS for the countries listed in RR No. **5.312**

Six draft methods C1, C2, C3, C4, C5, C6

All state that: "RR No. **9.21** still applies to the MS in relation to the ARNS in the 694-790 MHz frequency band. The determination of affected administrations, based on RR No. **9.21** for MS stations in respect of the ARNS, shall use the" (*xx – varies by method as below*) "in accordance with a modification of Resolution **232** at WRC-15".

C1 - predetermined coordination distances from section 1/1.2/4.2.1 (Study A.1)

C2 - ARNS coordination trigger from section 1/1.2/4.2.2 (Study B.2)

C3 - predetermined coordination distances from section 1/1.2/4.2.1 (Study A.2)

C4 - predetermined coordination distances from section 1/1.2/4.2.1 (Study A.3)

C5 - predetermined coordination distances from section 1/1.2/4.2.2 (Study B.3)

C6 - ARNS coordination trigger from section 1/1.2/4.2.2 (Study B.1)

Issue D: Solutions for accommodating the requirements for applications ancillary to broadcasting.

Three draft methods D1, D2, D3

All include: “modification of existing upper limits of frequency bands in RR No. **5.296** for the secondary allocation to 694 MHz and extension of that use to applications ancillary to programme making”.

D1 also includes identification of 694-790 MHz via a new footnote for applications ancillary to broadcasting and programme making;

D2 also includes a WRC Resolution on the operability of 695-790 MHz for applications ancillary to broadcasting and programme making;

D3 is just the text above.