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| **Radiocommunication Assembly (RA-15)Geneva, 26-30 October 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| **PLENARY MEETING** | **Addendum 2 toDocument RA15/PLEN/21-E** |
| **9 October 2015** |
| **Original: Russian** |
| Regional Commonwealth in the field of Communications Common Proposals |
| proposals for the work of the assembly |
| PROPOSED WAYs OF ACHIEVING PROGRESS WITH REGARD TO draft new RECOMMENDATION ITU‑R M.[BSMS700] |
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# 1 Introduction

At its tenth meeting, Study Group 5 considered draft new Recommendation ITU‑R M.[BSMS700]. However, SG 5 and SG 6 did not reach agreement on the draft new Recommendation ITU‑R M.[BSMS700] and it was decided to refer the draft text to the Radiocommunication Assembly 2015 for examination.

A number of administrations expressed concern at the document’s technical inconsistencies, which were not eliminated during the preparatory work at the last meeting of the JTG 4‑5‑6‑7.

# 2 Discussion

In the *recommends* part of the new proposed Recommendation ITU‑R M.[BSMS700], two levels of out-of-band emissions (or to be more precise “unwanted emissions”) from IMT mobile terminals in the frequency band below 694 MHz are proposed for the protection of existing services. However, these two levels proposed in the draft Recommendation do not fully address protection of existing services having allocations below 694 MHz, and do not provide clear “guidance to administrations on specific out-of-band emission (OOBE) level of IMT mobile stations operating in the frequency band 694-790 MHz”, as had been intended. The content of this draft is not consistent with its title and scope, which claim that the purpose is “protection of existing services in Region 1 in the frequency band below 694 MHz”. Furthermore, *recommends* 1 and 2 of this draft Recommendation contradict each other, indicating different levels to protect systems of existing services without explaining how this relates to the protection of other services or potential interference affecting receivers. From the technical point of view, the bandwidth of the IMT channel in the frequency band 703-733 MHz bears no relation to the unwanted emissions limit in the frequency band below 694 MHz required to protect other services. It should also be noted that ITU-R studies regarding protection of other services below 694 MHz have not been completed and the relevant report has not been agreed with JTG 4‑5‑6‑7 or with SG 5 and SG 6.

In *recommends* 1 and 2, the out-of-band emissions of IMT mobile stations operating at above 703 MHz are defined for frequencies below 694 MHz. Such a definition of out-of-band emissions is not consistent with the definition given in RR No. 1.144 (“*out-of-band emission\**: *Emission* on a frequency or frequencies immediately outside the *necessary bandwidth* which results from the modulation process, but excluding *spurious emissions*”), which assumes that out-of-band emissions begin at the channel boundary, for example, at 703 MHz. Consequently it is recommended that these points, as well as other sections of the draft new Recommendation ITU‑R M.[BSMS700], should be reformulated in order to align the terms used in the text with the Radio Regulations.

The text of the new draft Recommendation ITU‑R M.[BSMS700] does not indicate clearly the services for which the protection has been recommended, even though the proposed values were originally considered within JTG 4-5-6-7 only for the broadcasting service. Further studies are required to address the protection of a range of services having allocations in the frequency band below 694 MHz, if this Recommendation is to encompass a number of services. According to § 6.1.2 NOTE 3 of Resolution ITU‑R 1-6, “Study Groups developing Recommendations that include sharing criteria for radiocommunication services must obtain agreement, prior to their adoption, of the Study Groups responsible for those services”. These further studies must be carried out in close collaboration with the relevant study groups/working parties. For the broadcasting service it is essential to give further appropriate consideration to the protection of broadcasting stations in close collaboration with WP 6A and SG 6 in order to rectify these points.

Furthermore, the draft new Recommendation ITU‑R M.[BSMS700] does not provide any additional information on unwanted emissions compared to Recommendation ITU‑R M.2071, on generic unwanted emission characteristics of mobile stations using the terrestrial radio interfaces of IMT-Advanced. Moreover, Recommendation ITU‑R M.2071 is being developed in more detailed and constructive manner involving consultation with relevant standardization organizations. Having two ITU‑R Recommendations providing guidance on the same issues may lead to duplication and may create inconsistencies between them in the future.

# 3 Proposal

The RCC Administrations take the view that the draft new Recommendation ITU‑R M. [BSMS700] submitted by SG5 cannot be considered to provide guidance for administrations and should not be adopted and approved at RA-15 in its current form. Approval of a document with so many technical inconsistencies would undermine confidence in the technical competence of ITU-R.

It should be noted that the simplest way of resolving problems of unwanted emissions from mobile IMT stations in the band 694-790 MHz is the traditional process of updating Recommendation ITU‑R M.2071. Furthermore WP 5D has already started to revise Recommendation ITU-R M.2071 and is planning to conclude the process in June 2016. According to information from standardization organizations, this revision will include the same unwanted emission levels with regard to mobile IMT stations as are proposed in the draft new Recommendation ITU‑R M.[BSMS700].

In the event of further examination of the draft new Recommendation ITU‑R M.[BSMS700] at RA‑15, the RCC Administrations consider it essential to amend the text of the Recommendation in the manner suggested in the attached document.

attachment

**RCC/XA2/1**

DRAFT NEW RECOMMENDATION ITU‑R M.[BSMS700]

Specific unwanted emission limit of IMT mobile stations operating in the frequency band 694-790 MHz in
Region 1 in the frequency band 470-694 MHz

Scope

This Recommendation provides guidance to administrations on specific unwanted emission levels of IMT mobile stations operating in the frequency band 694-790 MHz for the frequency band 470-694 MHz in Region 1 in order to improve sharing with the broadcasting service in the frequency band in question.

The ITU Radiocommunication Assembly,

considering

*a)* that Recommendations ITU‑R M.1581 and ITU‑R M.2071 specify the generic unwanted emission characteristics of IMT-2000 and IMT-Advanced mobile stations, respectively;

*b)* that Recommendation ITU‑R M.1036 provides the frequency arrangements of IMT networks, including those to be used in the band 694-790 MHz;

*c)* that the unwanted emissions in the frequency band 470‑694 MHz of IMT mobile stations operating in Region 1 in the frequency band 694-790 MHz need to be limited in order to improve sharing with the broadcasting service below 694 MHz;

*d)* that too stringent limits may lead to an increase in size, cost or in complexity of IMT radio equipment;

*e)* the need to facilitate global harmonization and circulation of equipment to promote economies of scale;

*f)* that administrations decide on the channel bandwidth which is to be used by the user equipment;

*g)* that in some countries of Region 1 the deployment of IMT systems in the 700 MHz band is expected to start immediately after WRC‑15,

recognizing

*a)* that limitation of unwanted emissions from IMT mobile stations is only one of the factors in improving sharing of IMT mobile stations with broadcasting stations in the band 470-694 MHz;

*b)* that the IMT mobile station unwanted emission limit should

be technically feasible from the point of view of practical implementation of IMT mobile stations; and help to achieve global harmonization of mobile stations;

*c)* that different unwanted emission limits for IMT mobile stations operating in the 694-790 MHz band have been considered by Region 1 administrations;

including:

• −25 dBm/8 MHz for up to 20 MHz IMT channel bandwidth;

• −42 dBm/8 MHz for up to 10 MHz IMT channel bandwidth;

• −56 dBm/8 MHz for up to 10 MHz IMT channel bandwidth;

*d)* that additional measures to reduce unwanted emissions, referred to in *recommends*1 and 2, can be implemented to improve the deployment of IMT in certain regions,

noting

*a)* that mobile IMT stations in Region 1 will probably be used on the lower duplexer of A5 channelling arrangement in Recommendation ITU‑R M.1036 (i.e. uplink in 703-733 MHz) and a maximum output power of 23 dBm;

*b)* that an unwanted emission limit of −26.2 dBm/6 MHz for an IMT mobile station using the A5 channelling arrangement is included in the relevant 3GPP specification;

*c)* that new relevant 3GPP specifications contain an unwanted emission limit of −25 dBm/8 MHz for up to 20 MHz IMT channel bandwidth and a value of −42 dBm/8 MHz for 10 MHz IMT channel bandwidth;

*d)* that existing mobile IMT stations not complying with the unwanted emission limit referred to in *recommends*2 might continue to be used,

recommends

1 that the unwanted emissions of an IMT mobile station operating in Region 1 in the frequency band 703-733 MHz with an IMT channel bandwidth greater than 10 MHz should not exceed −25 dBm/8 MHz into the frequency band 470-694 MHz;

2 that the unwanted emissions of an IMT mobile station operating in Region 1 in the frequency band 703-733 MHz with an IMT channel bandwidth of 10 MHz or less should not exceed −42 dBm/8 MHz into the frequency band 470-694 MHz;

3 that administrations should, when deciding on the relevant channel bandwidth and its location within the band 703‑733 MHz, take into account *recommends*1 and 2.

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