Eutelsat's response to the RSPG Draft Opinion for Public Consultation on the ITU-R World Radiocommunication Conference 2023

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Eutelsat would like to thank the Radio Spectrum Policy Group (RSPG) for sharing and opening for comments the document entitled "(Draft) RSPG Opinion on the ITU-R World Radiocommunication Conference 2023" (WRC-23) dated 07 June 2022. Eutelsat's response to the public consultation can be found in the following paragraphs and focuses on a few agenda items of the WRC-23.

Regarding Agenda Item 1.2 – IMT mid-band identifications

Should option 1 be adopted, Eutelsat agrees that the protection of the satellite receiver is of utmost importance: The conditions for any international mobile telecommunications (IMT) operation in the band must guarantee that the satellite receiver protection criteria should not be exceeded. Should the satellite receiver protection criteria be exceeded by the aggregate operation of IMT terrestrial stations, it would mean the use of the band by satellite is irrevocably lost for all current and all potential users.

Eutelsat also notes that appropriate care must also be taken to protect the adjacent uplink band, 5925 – 6425 MHz, which as a band very heavily used by satellite. As the adjacent band will not be subject to an IMT identification, it should be afforded a higher receiver protection criteria with respect to operations in the adjacent band.

Regarding Agenda Item 1.3 – MS 3 600-3 800 MHz

Eutelsat understands the stakes for the European Union (EU) in upgrading the 3600 – 3800 MHz band to a co-primary status for mobile and agrees that existing fixed satellite services (FSS) in the band must be protected and allowed to continue operations, without undue constraints on their future development.

However, Eutelsat also expresses its concerns that even though IMT identification in the band would be considered outside the scope of this agenda item, there are quite a few players who see an upgrade to primary status of the mobile service as a means to introduce IMT services in the band.

In this respect, Eutelsat notes that extreme attention must be given to assure the protection of existing and future FSS deployments in the band, especially for countries and regions outside of the EU which rely heavily on satellite services as part of their critical communications infrastructure.

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Regarding Agenda Item 1.15 – GSO ESIM Ku-band

The new service is welcomed by Eutelsat, owner of a large number of fully notified AP30B Satellite Networks. The current studies are going to be finalized taking into account the protection of either the inter-services or the intra-services in these bands. The protection of the operating systems in the AP30B is the mandatory concept for which Eutelsat has monitored the course of action. Eutelsat is also of the view that the protection of the NGSO systems should be approached and defined, even if there is, for now, no general agreement about this point. The issue dealing with the responsibilities is also going to be fixed, with the common view that the administration responsible for the notified satellite receiving network operating this new service will be the only one responsible for the ESIMs operations. Eutelsat has no particular view, stating that the process under which the administration should deal with all the possible interferences shall be cleared in order to fully understand how the procedure will be applied.

Regarding studies in relation with RR Article 21

Without any regulatory limits on IMT Base stations (BS) power, the protection of FSS satellite resources can only be assured by an application of the limits of Art 21.5 on IMT BS power. The difficulty is that Art 21.5 only refers to conducted power to the transmitting antenna, which is not immediately applicable to active antenna systems (AAS) technology as IMT BS implement.

Comparing the results of the studies of the last ITU-R World Radio Conference study cycle for 26 GHz, we see that the current limits, applied to the characteristics of IMT agreed for the studies, are almost exactly consistent with maximum value that IMT BS can operate at before causing interference to FSS satellite receivers.

As such Eutelsat believes that the following is an appropriate position for the EU to take:

- Support application of Art. 21.5 to AAS antennas by applying 10 dBW threshold to active antenna Total Radiated Power, nominally with a 200 MHz maximum bandwidth, in the 26 GHz band. Support the immediate application of these limits for IMT stations notification in the 26 GHz band.
- Support updating Table 21-2 to include all IMT identified bands in co-primary sharing between terrestrial service and satellite reception, noting that appropriate power thresholds may need to be adapted on band-by-band basis.

To take into account further considerations on IMT BS bandwidth and AAS antenna configuration, the EU position should further support:

- A bandwidth ‘correction factor’ by which a future IMT BS which operates in a bandwidth greater than 200 MHz, could be allowed a greater TRP in proportion to this larger bandwidth.
- An AAS array-size ‘correction factor’ could also be considered –noting that increasing the size of the AAS array from that used in the studies of the last cycle (i.e. from 8 x 8 elements)

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could allow for a higher TRP without a directly proportionate increase of interference to the satellite receiver.

Eutelsat further notes that there are proponents in the various debates on the subject which are proposing various ways of circumventing any rationale application of No. 21.5, which if adopted would not in any way protect FSS receivers.

As such, Eutelsat is of the view that the EU position should reject means by which certain proponents are proposing to circumvent No. 21.5 by IMT stations using AAS antennas – in other words, the EU should also take the explicit position that:

- the limits of No. 21.5 should apply to the AAS antenna as a whole, and not to each of the individual radiating elements making up the AAS array
- the bandwidth over which the power specified in No. 21.5 should be based on the IMT BS characteristics as defined by ITU-R WP 5D and as used for the studies of the last Conference cycle. A much lower bandwidth must not be taken as reference, for example on the order of 1 MHz or even lower, as some have been proposing.

Eutelsat thanks the RSPG for considering the above elements and looks forward to seeing the final opinion of RSPG on WRC-23.

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