

TIM response to RSPG opinion on the ITU-R WRC-19
(RSPG18-023)
20 July 2018

Executive Summary

- It is not necessary to change the current regulation of the bands for earth station in motion (ESIM) in particular the extension of the frequency ranges to 17.7 - 19.7 GHz and 27.5 - 29.5 GHz bands could raise implementing issues for the protection of the fixed and mobile services.
- TIM agrees with the RSPG Recommendation to support an IMT identification for the band 24.25-27.5GHz. A EC decision to harmonize the technical conditions of the this band for the introduction of 5G technologies in Europe is now urgent. However the technical conditions must not hamper the exploitation of this band for 5G services with stringent requirements.
- It is important to warrant to 5G other frequencies in addition to the 26 GHz band including the 32 GHz and 42 GHz.
- Also the 28 GHz band should be considered since in USA, Japan, and Korea the band is going to be used for 5G and therefore terminals and equipment will be soon available for this band.
- TIM agrees with RSPG in supporting the preliminary agenda item for WRC-23 as included in Resolution 810 (WRC-15) on possible regulatory actions in the frequency band 470-694 MHz or part thereof in Region 1.
- TIM supports studies in the 6 GHz range (e.g. 5.925 – 6.425 GHz currently allocated to wireless links and satellite) and in the band 3.8 – 4.2 GHz which along with the 3.4 -3.8 GHz would guarantee a contiguous spectrum of 800 MHz to 5G services.

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Introduction

TIM welcomes the RSPG's decision to submit to public consultation its opinion on the ITU-R World Radiocommunication Conference 2019. RSPG can play an important role in defining a common EU position of the efficient allocation of the spectrum for the benefit of European industry and society.

The review of the Radio Regulations should take into account of the importance of prompt spectrum availability for the development of 5G networks and services in Europe.

In the following paragraphs, TIM expresses its view on each of the agenda items which may be of interest for its business.

1. WRC-19 Agenda Item 1.5 (ESIM)

Earth Station in Motion (ESIM) can currently communicate with geostationary (GSO) FSS space stations using the 19.7-20.2 GHz (space-to-Earth) and 29.5-30.0 GHz (Earth-to-space) radiofrequency spectrum.

TIM deems that it is not necessary to change the current regulation in particular TIM does not support the extension of the frequency ranges to 17.7 - 19.7 GHz and 27.5 - 29.5 GHz bands. Indeed the bands are already allocated to fixed and mobile services and their protection with the ESIMs service can be very challenging considering that ESIMs are in motion and therefore the protection should be ensured in any geographical location.

2. WRC-19 Agenda Item 1.13 (IMT2020/5G)

TIM agrees with the RSPG Recommendation to support an IMT identification for the band 24.25-27.5GHz. Indeed this band has been identified as the pioneer 5G band in Europe above 24 GHz.

TIM supports and urges a swift EC decision to harmonize the technical conditions of the 26 GHz band for the introduction of 5G technologies in Europe. The decision must be issued as soon as possible considering that Italy will assign one Gigahertz of this band by end of September 2018 and the new European Electronic Communication Code is asking the member States to release one Gigahertz by 2020. However, the technical conditions established in the decision must not hamper the exploitation of this band for 5G services. The European Electronic Communications Committee (ECC) is going to deliberate on their Decision for the use of the 26 GHz band for 5G. In order to protect from interference with other services like downlinks for earth observation data and EESS/SRS earth stations, the draft of this ECC Decision proposes stringent requirements which could heavily hamper the ability of the band to produce the extreme throughputs expected from 5G by reducing the available bandwidth with wide guard bands.

It is worth noting that the 26 GHz (24.5–26.5 GHz) band is not sufficient to meet all the capacity needs of 5G services. One should take into account that the band 26 GHz does not provide 3 GHz of Spectrum over all Europe. For Instance, part of the 26 GHz band is used in Europe for P2P and PMP fixed links (mobile backhauling) and, in particular, in Italy the band has been assigned for WLL use with expiration date at the end of 2022. Therefore it is important to warrant to 5G additional frequency bands above 24 GHz amongst those identified by WRC-15 which can ensure much wider bandwidths than the 26 GHz.

TIM supports the identification of the 32 GHz (31.8-33.4 GHz) and 42 GHz (40.5-43.5 GHz) bands for IMT.

Although the industry has expressed less interest in the 32 GHz band, the several advantages of this band should be better considered. This band could exploit the synergies with the 26 and 28 GHz bands allowing the deployment of equipment with tuning ranges covering all the bands. Moreover the 32 GHz band is unused almost everywhere and does not present compatibility problems with the satellite services. Furthermore, the 1.6 GHz bandwidth available at 32 GHz would allow a fast deployment of eMBB services, providing around 400/500 MHz for each operator. The main disadvantage of the 32 GHz band is its proximity to a passive service band (31.5-31.8 GHz) where all the emissions are prohibited and that needs to be protected.

The additional spectrum in the 42 GHz band available for next-generation wireless services would address the growing demand for spectrum-based services and facilitate the development of 5G.

TIM does not share the RSPG recommendation to oppose the IMT identification of the 28 GHz (27.5 – 28.5 GHz) band. The 28 GHz band was not included in the WRC-15 list, however in USA, Japan, and Korea the band is going to be used for 5G and therefore terminals and equipment will be soon available for this band.

3. Agenda item 10 (New Agenda items for WRC-23)

TIM agrees with RSPG in supporting the preliminary agenda item for WRC-23 as included in Resolution 810 (WRC-15) on possible regulatory actions in the frequency band 470-694 MHz or part thereof in Region 1.

Although the WRC-15 has not identified spectrum between 3.8 GHz and 24 GHz, this range of frequencies should continue to be subject of study for the introduction of 5G systems, presenting more favourable propagation conditions than the higher frequency bands.

In particular TIM supports studies in the 6 GHz range (e.g. 5.925 – 6.425 GHz currently allocated to wireless links and satellite)) and in the band 3.8 – 4.2 GHz which along with the 3.4 -3.8 GHz would guarantee a contiguous spectrum of 800 MHz to 5G services.