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| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | |  |
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| PLENARY MEETING | | **Addendum 2 to Document 157(Add.27)-E** | |
|  | | **30 October 2023** | |
|  | | **Original: English** | |
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| India (Republic of) | | | |
| PROPOSALS FOR THE WORK OF THE CONFERENCE | | | |
|  | | | |
| Agenda item 10 | | | |

10to recommend to the ITU Council items for inclusion in the agenda for the next world radiocommunication conference, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the ITU Convention and Resolution **804 (Rev.WRC‑19)**,

Background

In the recent meeting of the ITU‑R Working Party (WP) 5D (WP 5D-44), ‘Framework and overall objectives of the future development of IMT for 2030 and beyond’ were discussed in great detail and the meeting finalized the development of a draft new Recommendation. There has been academic and industry research and development ongoing related to suitability of mobile broadband systems in various frequency bands including the spectrum between 7.125 GHz to 15.35 GHz.

Frequency bands between 7.125 GHz to 15.35 GHz have allocations for various types of services and there may be some challenges to consider this complete range for study. However, it is possible to consider multiple sub-ranges in this frequency range for harmonized identification for IMT applications.

Proposal

India proposes that the following frequency sub-bands, within the frequency range 7.125-15.35 GHz, can be considered as probable candidate bands for studies for a possible IMT identification including possible additional allocations to the mobile service on a primary basis:

i) 7 125-7 750 MHz;

ii) 9 800-10 000 MHz;

iii) 10.5-10.7 GHz;

iv) 14.5-15.35 GHz.

ADD IND/157A27A2/1

Draft New Resolution [IMT 7.125-15.35 GHZ] (WRC-23)

Studies on frequency-related matters for the terrestrial component of International Mobile Telecommunications (IMT) identification in portion(s) of the frequency range between 7.125-15.35 GHz

The World Radiocommunication Conference (Dubai, 2023),

considering

*a)* that International Mobile Telecommunications (IMT) is intended to provide telecommunication services on a worldwide scale, regardless of location and type of networks or terminals;

*b)* that IMT systems are now being evolved to provide diverse usage scenarios[[1]](#footnote-2)1, and applications;

*c)* the development of enhanced and evolved IMT and its future development is to continue improving quality of life for all and to expand its goals towards societal, environmental, cultural and economic sustainability;

*d)* that some of the frequency bands below 7 125 MHz and between 24.25 and 86 GHz have been studied and identified for IMT in the Radio Regulations globally, regionally and/or nationally;

*e)* the identification of spectrum for IMT in the Radio Regulations provides the information not only for the harmonized use of radio spectrum but also for the proper use of radio spectrum for IMT, which enables IMT to achieve sharing and compatibility with other applications and services in the same and/or adjacent frequency bands;

*f)* that while the frequency bands are identified for IMT, some countries have not been used or not be planned for use by IMT due to different spectrum usage for other applications and services;

*g)* that continuation of studies regarding additional identification for IMT spectrum is needed in order to provide proper conditions for a use of IMT, which provide sharing and compatibility with other incumbent applications, and then to give flexibility for administrations to select the frequency bands among those identified bands for IMT;

*h)* that at previous world radiocommunication conferences (WRCs), frequency ranges other than those mentioned in *considering* *d)* were not thoroughly studied;

*i)* that it may be required to study additional spectrum requirements to meet the gigabit-per-second user data rate, high quality of user experience (QoE) and user demands in dense urban areas and/or in peak times;

*j)* that the ITU Radiocommunication Sector has been working on standardization for IMT for 2030 and beyond;

*k)* that adequate and timely availability of spectrum and supporting regulatory provisions is essential to support the future development of IMT and to realize the objectives in Recommendation ITU‑R M.[FRAMEWORK FOR 2030 AND BEYOND];

*l)* that harmonized worldwide frequency bands and harmonized frequency arrangements for IMT are highly desirable in order to achieve global roaming and the benefits of economies of scale;

*m)* that IMT has effectively shared the limited spectrum resource with other services and applications through the provisions in the Radio Regulations,

noting

*a)* that Resolution ITU‑R 65 addresses the principles for the process of development of IMT for 2030 and beyond;

*b)* that IMT encompasses IMT‑2000, IMT‑Advanced, IMT‑2020 and IMT‑2030 collectively, as described in Resolution ITU‑R 56;

*c)* that Question ITU‑R 229/5 seeks to address the further development of IMT;

*d)* that Question ITU‑R 262/5 addresses the study of usage of IMT systems for specific applications;

*e)* Recommendation ITU‑R M.[IMT.FRAMEWORK FOR 2030 AND BEYOND], on the framework and objectives of the future development of IMT for 2020 and beyond;

*f)* that Report ITU‑R M.2516 addresses future technology trends of terrestrial IMT systems;

*g)* Report ITU‑R M.2376, on technical feasibility of IMT in bands above 6 GHz;

*h)* that No. **5.340** lists the frequency bands where all emissions are prohibited,

recognizing

*a)* that there is a lead time between the allocation of frequency bands by WRCs and the deployment of systems in those bands, and that timely availability of wide and contiguous blocks of spectrum is therefore important to support the development of IMT;

*b)* that in order to ensure the future development of IMT it is important to ensure the timely identification of additional spectrum;

*c)* the developments in new spectrum sharing techniques including use of Artificial Intelligence, Machine Learning, Integrated Access & Backhaul, Dynamic Spectrum Access, etc.;

*d)* that various frequency bands in the range 7.125-15.35 GHz are being used extensively by incumbent services, including satellite based services;

*e)* that any identification of frequency bands for IMT should not establish priority in the Radio Regulations and do not preclude the use of the frequency bands by any application of the services to which it is allocated, including the evolving needs of these services and applications;

*f)* that no additional regulatory or technical constraints should be imposed to any applications of the services to which it is currently allocated on a primary basis;

*g)* that the preamble of the Radio Regulations provides objectives including:

*– to facilitate the efficient and effective operation of all radiocommunication services;* and

*– to provide for and, where necessary, regulate new applications of radiocommunication technology,*

resolves to invite ITU Radiocommunication Sector

1 to conduct and complete in time for WRC‑27 the appropriate studies of technical, operational and regulatory issues pertaining to the possible use of the terrestrial component of IMT in the frequency bands listed in *resolves to invite the ITU Radiocommunication Sector*2, taking into account:

– evolving needs to meet emerging service demand;

– situations with high data traffic demands, such as in dense urban areas and/or in peak times;

– technical and operational characteristics of IMT systems that would operate in these specific frequency bands, including the evolution of IMT through advances in technology and enabling technique;

– the deployment scenarios envisaged for IMT systems and the related requirements of balanced coverage and capacity;

– the time-frame in which spectrum would be needed;

2 to conduct and complete in time for WRC‑27 the sharing and compatibility studies[[2]](#footnote-3)2, with a view to ensuring the protection of services to which the frequency band is allocated on a primary basis, without imposing additional regulatory or technical constraints on those services, and also, as appropriate, on services in adjacent bands, for the frequency bands:

– 7 125-7 750 MHz;

– 9 800-10 000 MHz;

– 10.5-10.7 GHz;

– 14.5-15.35 GHz,

resolves

1 to invite the first session of the Conference Preparatory Meeting for WRC‑27 to define the date by which technical and operational characteristics needed for sharing and compatibility studies are to be available to ensure that studies referred to in *resolves to invite the ITU Radiocommunication Sector* can be completed in time for consideration at WRC‑27;

2 to invite WRC‑27 to consider, based on the results of the above studies, additional spectrum allocations to the mobile service on a primary basis and to consider identification of frequency bands for the terrestrial component of IMT, the frequency bands to be considered being limited to part or all of the frequency bands listed in *resolves to invite the ITU Radiocommunication Sector*2,

encourages Member States, Sector Members, Academia, and Associates

to participate in the studies by submitting contributions to ITU‑R.

ANNEX

Template for the submission of proposals for WRC-27 agenda item

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| **Subject*:*** Proposal for a new WRC‑27 agenda item to consider identification of specific frequency bands within mobile service allocation in the frequency range 7.125-15.35 GHz for International Mobile Telecommunications (IMT) | |
| **Origin*:*** India (Republic of) | |
| ***Proposal***:  To consider identification of specific frequency bands within Mobile Service allocation in the frequency range 7.125-15.35 GHz for International Mobile Telecommunications (IMT), in accordance with Resolution [IMT 7.125-15.35 GHz] (WRC‑23); | |
| **Background/reason**:  Since ITU initiated the studies on IMT in 1985, IMT has evolved not only for providing the international mobile telecommunications but also for supporting the development of various industry sectors. Furthermore, IMT will be an important enabler of achieving the UN Sustainable Development Goals (SDGs) and societal, economic, environmental, and cultural development.  IMT will continue to improve the efficient use of spectrum, and benefits from new spectrum to satisfy the demands for increasing capacity and new applications and to provide for new capabilities. Taking into account differences in the demands, deployments and timings of mobile data growth in different countries, multiple frequency ranges from low band to high band would be needed to meet the capacity and coverage requirements of IMT systems. In particular, mid bands mainly covering frequency ranges 7.125-15.35 GHz provides a balance between wide area coverage and capacity.  The evolution of IMT has been facilitated through the identification of the frequency bands for IMT in the ITU Radio Regulations (RR). In the early stage of the identification of IMT spectrum, global harmonized use of IMT was the main purpose. However, it is now well recognized that the identification of IMT spectrum is also associated with the information on proper conditions regarding how IMT could share the frequency bands with other incumbent services through the provisions in the RRs. These provisions in the RR give flexibility for Members to use the identified IMT frequency bands in accordance with their own national spectrum policies.  Considering the enlargement of usage scenario of IMT, the development of technology which also enables the sharing of the frequency bands with other incumbent services and IMT identification for the proper use of IMT, ITU (collectively of Members) should continue exploring new identification of IMT spectrum in order not only to keep providing a way of efficient use of spectrum but also to assist Members to use/select those identified frequency bands for IMT according to their own national spectrum policies.  Therefore, it would be useful to study some specific frequency bands for IMT from the frequency ranges 7.125-15.35 GHz to provide broadband capacity together with a certain level of coverage. For this study, it is essential to keep in mind that there were some reasons why some of these frequency ranges were not considered for IMT at the past WRCs, such as heavy use of spectrum by the incumbent services and requirements of their protection and their future development.  There is a significant gap of time between the identification of frequency bands for IMT in the RR and the implementation and deployment of IMT systems in those bands. Therefore, timely identification of IMT spectrum in the RR is important to support the development of IMT, while considering the need to protect existing services and to allow for their continued development. | |
| ***Radiocommunication Services concerned:***  Within 7.125-15.35 GHz:  – 7 125-7 750 MHz  – 9 800-10 000 MHz  – 10.5-10.7 GHz  – 14.5-15.35 GHz | |
| ***Indication of possible difficulties:***  The proposed frequency bands are used for some of other services on a co-primary basis. | |
| ***Previous/ongoing studies on the issue:***  The following studies have been initiated and are now ongoing in ITU‑R Working Party 5D:   * Report ITU‑R M.2516, * Draft new Recommendation ITU‑R M.[IMT.FRAMEWORK FOR 2030 AND BEYOND] | |
| ***Studies to be carried out by:***  ITU‑R SG 5/WP 5D | ***with participation of:***  Administrations and Sector members of the ITU‑R |
| ***ITU-R Study Groups concerned:***  SG 5/WPs 5A, 5B, 5C, SG 4/WP 4A, SG 7/WP 7B | |
| ***ITU resource implications, including financial implications (refer to CV 126):***  This proposed agenda item will be studied within the normal ITU‑R procedures and planned budget. As the responsible group on IMT matters, ITU‑R WP 5D usually has meetings three times a year, each of which lasts around 10 days. | |
| ***Common regional proposal:***  No | ***Multicountry Proposal:*** -  ***Number of countries:*** - |
| ***Remarks*** | |

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1. 1 Immersive Communication, HRLLC (Hyper Reliable and Low-Latency Communication), Massive Communication, Ubiquitous Connectivity, Integrated Artificial Intelligence (AI) and Communication, and Integrated Sensing and Communication. [↑](#footnote-ref-2)
2. 2 Including studies with respect to services in adjacent bands, as appropriate. [↑](#footnote-ref-3)