|  |  |
| --- | --- |
| **42 MEETING OF PERMANENT****CONSULTATIVE COMMITTEE II:****RADIOCOMMUNICATIONS****August 28 to September 1, 2023****Ottawa, Canada** | **OEA/Ser.L/XVII.4.2.42****CCP.II-RADIO /doc. 5962/23****25 August 2023****Original: English** |
|  |
|  | **PROPOSALS FOR THE WORK OF THE CONFERENCE****AGENDA ITEM 10 - IMT** |  |
|  | **(Item on the Agenda: 3.1 (SGT-5))** |  |
|  | **(Document submitted by the delegation of the United States of America)** |  |

**Impact on the sector:**

This document supports the work of CITEL’s PCC.II Working Group for WRC under 3.1 of the agenda.

**Executive Summary:**

The United States proposes revisions to the CITEL Preliminary Proposal for WRC-23 agenda item 10 regarding the study of additional frequency bands for the terrestrial component of IMT. Edits are proposed on the CITEL preliminary proposal found in Document CITEL/GT/CMR-23/doc. 068/23.

**Note: Modifications shown to Doc. CITEL/GT/CMR-23/doc. 068/23.**

**Agenda Item 10** *To 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:**

**SOURCE: [B 5752], USA [Document#]**

Today, the early vision for 6G, also known as IMT-2030, is starting to emerge as the mobile and broader vertical ecosystems embark on foundational technology research preparing for the next decade of innovations. While we are still years away from commercial launches of the 6G platform, we know that 6G will bring technology leaps, new experiences, and use cases that we can barely imagine today.

At a high level, three main driving forces are behind the need for 6G:

1. harnessing core technology advancements (in wireless and adjacent areas like semiconductors and materials science);
2. meeting societal sustainability needs (e.g., economic growth, digital access, and green initiatives); and
3. addressing new requirements for next-level experiences that cannot be met with 5G.

To efficiently meet these objectives, 6G will be a smarter platform that brings more than just a new radio design. It is envisioned to encompass a broader range of technologies to further drive the expansion of the connected intelligent edge at scale. 6G should fully unleash the combined potential of communications, artificial intelligence (AI), integrated sensing, system resiliency, and greener networks.

With that, a new spectrum paradigm can bring new frequency bands and enable novel sharing techniques that better utilize existing spectrum. Furthermore, opening new spectrum for mobile connectivity, in conjuction with the spectrum already identified in lower and higher bands, would enable new use cases and deployments that require both coverage and capacity.

There is growing momentum around 6G development and policy planning at the international, regional, and national levels. ITU-R Working Party 5D recently completed the framework[[1]](#footnote-2) to define IMT towards 2030. The new ITU-R Recommendation containing detailed standards is expected to be completed in 2030. Regulators in the region have also opened regulatory proceedings to address the need to have necessary regulations in place for the next generation of wireless technology. Further, initiatives like the Next G Alliance, which is comprised of industry, academia, and government, are diligently working on the development of the next generation of wireless technology seeking to advance leadership and competitiveness in this space.

Contiguous spectrum bandwidths other than those currently available are necessary to address traffic growth in mobile networks. As such, discussions have already started to identify the most suitable frequency bands to address the needs of expanded coverage and high capacity for 5G and 6G networks. While no single frequency range satisfies all the criteria required for the complete realization of 6G networks and their applications, as well as the additional development of 5G networks, spectrum in the upper mid-band range could complement the current offer of spectrum identified for IMT to facilitate next generations, including the IMT-2030 capacity-demanding use cases for both wider coverage and higher capacity.

 It is important to recognize that the incumbent services in the candidate bands provide important systems for public safety, aviation and other uses, and such operations should be protected. Sharing and compatibility studies are required to examine the feasibility of introducing IMT into these bands while protecting those incumbent operations in the same band or adjacent, as appropriate.

**DRAFT INTER AMERICAN PROPOSALS**

ADD B/10/1

**Support: [B], USA**

Draft New Resolution [WRC-27\_AGENDA] (WRC-23)

**Agenda for the 2027 World Radiocommunication Conference**

The World Radiocommunication Conference (Dubai, 2023),

…

1.[X] to consider identification of the frequency bands for the future development of the terrestrial component of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **[IMT-NEW-BANDS] (WRC-23)**;

…

**Reasons:** Demand for access to IMT spectrum is robust and accelerating. Contiguous spectrum bandwidths other than those currently available are necessary to address traffic growth in mobile networks. Spectrum in the bands studied within Resolution [IMT-NEW-BANDS] could facilitate the IMT-2030 capacity-demanding use cases for both wider coverage and higher capacity.

ADD B/10/2

**Support: [B], USA**

DRAFT NEW RESOLUTION [IMT-NEW-BANDS] (WRC-23)

**Studies on the identification of additional frequency bands for the terrestrial component of IMT**

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 network or terminal;

*b)* that IMT systems have contributed to global economic and social development;

*c)* that IMT systems are now being evolved to provide diverse usage scenarios such as enhanced mobile broadband, massive machine-type communications and ultra-reliable and low-latency communications, and applications including fixed broadband;

*d)* that ultra-low latency and very high bit-rate applications of IMT will require contiguous blocks of spectrum for use by administrations wishing to implement IMT;

*e)* that, compared with lower and higher frequency bands, the mid-band spectrum can provide better balance for meeting needs for both coverage and capacity;

*f)* that there is a need to continually take advantage of technological developments in order to increase the efficient use of spectrum and facilitate spectrum access;

*g)* that adequate and timely availability of spectrum and corresponding regulatory provisions are essential to support the future development of IMT;

*h)* 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,

*i)* that a need exists to protect existing services and to allow for their continued development when considering frequency bands for possible additional allocations to any service;

*noting*

*a)* that Resolution ITU-R 65 addresses the principles for the process of development of IMT for 2020 and beyond;

*b)* that IMT encompasses IMT-2000, IMT-Advanced and IMT-2020 collectively, as described in Resolution ITU-R 56-2 and the ITU is actively studying the development and standardization of IMT-2030;

*c)* that Question ITU-R 77-8/5 considers the needs of developing countries in the development and implementation of IMT;

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

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

*f)* Recommendation ITU-R M.2083, on the framework and objectives of the future development of IMT for 2020 and beyond;

*g)* 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;

*h*) Report ITU-R M.2516, on future technology trends of terrestrial International Mobile Telecommunications systems towards 2030 and beyond,

*recognizing*

*a)* that there is a lead time between the allocation of frequency bands by world radiocommunication conferences 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)* that any identification of frequency bands for IMT should take into account the use of the frequency bands by other services and the evolving needs of these services;

*resolves to invite the 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 demand for IMT;

*-* technical and operational characteristics of terrestrial IMT systems that would operate in this specific frequency band, including the evolution of IMT through advances in technology and spectrally efficient techniques;

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

*-* the needs of developing countries;

*-* the timeframe in which spectrum would be needed,

2 to conduct and complete in time for WRC-27 the sharing and compatibility studies, 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 primary services in adjacent bands, for the frequency bands:

- 12.7 – 13.25 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,

*invites administrations*

to participate actively in these studies by submitting contributions to ITU-R.

**Reasons:** Demand for access to IMT spectrum is robust and accelerating. Contiguous spectrum bandwidths other than those currently available are necessary to address traffic growth in mobile networks. Spectrum in the candidate frequency bands could facilitate the IMT-2030 capacity-demanding use cases for both wider coverage and higher capacity.

**ANNEX**

**PROPOSAL FOR WRC-27 AGENDA ITEM FOR IDENTIFICATION OF NEW FREQUENCY BANDS FOR IMT**

**Subject:** Proposed future WRC-2027 agenda item for identification of new spectrum for IMT.

**Origin**: CITEL

***Proposal:*** *To identify frequency band[s][TBD], or parts thereof, for use by IMT, seeking regional and global harmonization.*

***Background/reason:***

Demand for access to IMT spectrum is robust and accelerating. Contiguous spectrum bandwidths other than those currently available are necessary to address traffic growth in mobile networks. Spectrum in the in the candidate frequency bands could facilitate the IMT-2030 capacity-demanding use cases for both wider coverage and higher capacity.

***Radiocommunication services concerned:*** Mobile, Broadcasting, Broadcasting Satellite, Earth Exploration-Satellite, Fixed, Fixed Satellite, Mobile Satellite, Radiolocation and Radio Astronomy Service.

***Indication of possible difficulties:*** The proposed bands are widely used for terrestrial and space services.

***Previous/ongoing studies on the issue:***

Related studies have been already commenced in the ITU-R WP 5D.

|  |  |
| --- | --- |
| ***Studies to be carried out by:*** ITU-R WP 5D | *with the participation of:*  ITU-R membership |

***ITU-R Study Groups concerned:*** ITU-R Study Groups 4, 5, and 7

*ITU resource implications, including financial implications (refer to CV126):* Minimal, as the proposed agenda item should be studied by ITU-R WP 5D within its existing framework of meetings.

***Common regional proposal:*** [Yes/No] ***Multicountry proposal:*** [Yes/No]

 *Number of countries:*

***Remarks***

1. Draft new Recommendation ITU-R M.[IMT.FRAMEWORK FOR 2030 AND BEYOND] - Framework and overall objectives of the future development of IMT for 2030 and beyond, available at https://www.itu.int/md/R19-SG05-C-0131/en [↑](#footnote-ref-2)