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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 44(Add.2)-E** | |
|  | | **13 October 2023** | |
|  | | **Original: English** | |
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| Member States of the Inter-American Telecommunication Commission (CITEL) | | | |
| PROPOSALS FOR THE WORK OF THE CONFERENCE | | | |
|  | | | |
| Agenda item 1.2 | | | |

1.2 to consider identification of the frequency bands 3 300-3 400 MHz, 3 600‑3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC‑19)**;

Part 2 – Frequency band 3 600-3 800 MHz

Background

Mobile broadband plays a crucial and fundamental role in providing access to information for businesses and consumers worldwide. Mobile broadband users are also demanding higher data rates and are increasingly using mobile devices to access audiovisual content. The mobile industry continues to drive technological innovations in order to meet these evolving user demands. In 2020, the first year of the pandemic, the number of Internet users grew by 10.2%, the largest increase in a decade, driven by developing countries where Internet use went up 13.3%. According to ITU estimates, the number of active mobile-cellular telephone subscriptions per 100 inhabitants continues to grow strongly, reaching 110 subscriptions per 100 inhabitants, including a record number of mobile subscriptions with broadband capacity (3G or better)[[1]](#footnote-1). Ninety-five per cent of the world’s population lives within reach of a mobile broadband service, and the relatively small difference in the number of subscriptions between developed and developing countries demonstrates that connectivity is a priority among people in countries at all levels of development1.

The evolution of International Mobile Telecommunications (IMT), which provides wireless telecommunication services on a worldwide scale, has contributed to global economic and social development. IMT systems are now being evolved to provide applications such as enhanced mobile broadband, massive machine-type communications and ultra-reliable and low-latency communications.

The demand for mobile wireless broadband applications such as IMT continues to grow dramatically as does the need for access to radio spectrum to support that growth[[2]](#footnote-2). Fifth-generation (5G) provides improved data rates and reduced latency. Importantly 5G has been designed to enable capabilities in a wide range of industries including healthcare, transportation, manufacturing, education, and telemedicine; 5G is expected to have a broad impact on our economies and societies. Recognizing the need to consider additional mid-band spectrum bands – with its favourable mix of coverage and capacity – in the range 3 300 MHz to 10.5 GHz to support the terrestrial component of IMT, WRC‑19 approved WRC‑23 agenda item 1.2. ITU‑R, standards development organizations, and industry continue to progress the work on the development of IMT‑2020.

WRC‑23 agenda item 1.2 (Resolution **245 (WRC‑19)**) calls for 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 services in adjacent bands, for the frequency bands:

– 3 300-3 400 MHz and 3 600-3 800 MHz and (Region 2);

– 3 300-3 400 MHz (amend footnote in Region 1);

– 7 025-7 125 MHz (globally);

– 6 425-7 025 MHz (Region 1);

– 10.0-10.5 GHz (Region 2).

ITU‑R sharing studies have indicated separation distances (e.g. 7.5-26 km) are required to ensure the protection of fixed-satellite service (FSS) earth station receivers from terrestrial IMT operations. Cross-border coordination between IMT and the FSS is feasible when the deployment of IMT is limited to the areas outside of the required separation distances for each azimuth to protect each specific FSS earth stations. In the case of bilateral coordination, the FSS protection criteria along with the FSS antenna elevation angle, should be used to determine the necessary separation distances to ensure protection of FSS earth stations.

The 3 600-3 800 MHz frequency band is part of a globally-standardized band for 5G. 3GPP has specifications (n77 or 3.3-4.2 GHz band) for the operation of both Long-Term Evolution (LTE) and 5G NR in these bands and there are already significant deployments worldwide along with the required ecosystem to enable those deployments. The 3 600-3 800 MHz frequency band is globally allocated to the FSS (space-to-Earth) on a co-primary basis with fixed and mobile services in Region 2. GSO FSS satellites have and continue to provide services across the Americas. C-band GSO satellites provide services including distribution of television and radio broadcasting programmes, telephone and data services to consumers, back-haul to mobile terrestrial operators, and feeder links for mobile-satellite services. Additionally, C-band is used for reception of essential telemetry FSS satellite signals[[3]](#footnote-3).

National space systems in Region 2, as well as a significant number of additional commercial satellite networks, use these downlink bands above 3 600 MHz, for the provision of essential services, connecting millions of receiving user terminals, as well as for monitoring and telemetry.

That is why it is important to preserve the proper functioning of the FSS that operates within the 3 600-3 800 MHz band and in adjacent bands, as well as to guarantee the protection and quality of operation of existing, planned and future networks of the FSS.

Proposals

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

MOD IAP/44A2A2/1#1360

3 600-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 3 600-4 200  FIXED  FIXED-SATELLITE (space-to-Earth)  Mobile | 3 600-3 700  FIXED  FIXED-SATELLITE (space-to-Earth)  MOBILE except aeronautical mobile MOD 5.434  Radiolocation 5.433 | 3 600-3 700  FIXED  FIXED-SATELLITE (space-to-Earth)  MOBILE except aeronautical mobile  Radiolocation  5.435 |
| 3 700-4 200  FIXED  FIXED-SATELLITE (space-to-Earth)  MOBILE except aeronautical mobile ADD 5.XXX | |

**Reasons:** The identification of sufficient mid-band frequency spectrum for IMT is essential to be able to address digitalization (e.g. sustainable smart cities, industries) and reduce the digital divide in the Americas.

MOD IAP/44A2A2/2#1357

5.434 In Region 2, the frequency band 3 600-3 700 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to ensure the protection of the fixed-satellite service (space-to-Earth).     (WRC‑23)

**Reasons:** The identification of sufficient mid-band frequency spectrum for IMT is essential to be able to address digitalization (e.g. sustainable smart cities, industries) and reduce the digital divide in the Americas.

ADD IAP/44A2A2/3

5.XXX In the Bahamas, Belize, Brazil, Canada, Colombia, Costa Rica, United States, Guatemala, Paraguay, Peru, Trinidad and Tobago and Uruguay, the frequency band 3 700-3 800 MHz is identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to ensure the protection of the fixed-satellite service (space-to-Earth).     (WRC‑23)

**Reasons:** The identification of sufficient mid-band frequency spectrum for IMT is essential to be able to address digitalization (e.g. sustainable smart cities, industries) and reduce the digital divide in the Americas.

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1. <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf>. [↑](#footnote-ref-1)
2. Ericsson predicts that total mobile traffic is expected to increase by a factor of five over the next six years, reaching 164 exabytes per month by the end of 2025. Ericsson reports that today, smartphones generate about 95% of total mobile data traffic, and that by 2025, 5G networks will carry about half of the world’s mobile data traffic. See *Ericsson, Mobility Report* at 20 (2020), <https://www.ericsson.com/49da93/assets/local/mobility-report/documents/2020/june2020-ericsson-mobility-report.pdf>. Cisco estimates that, by 2022, 22% of global internet traffic will come from mobile networks, up from 12% in 2017. See *Cisco Systems Inc., Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update*, 2017-2022 White Paper (2019), <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.html>. [↑](#footnote-ref-2)
3. See *Expanding Flexible Use of the 3.7-4.2 GHz Band*, report and order and order of proposed modification, FCC 20-22, at para. 9 (rel. Mar. 3, 2020) (“FCC C-Band Order”), <https://docs.fcc.gov/public/attachments/FCC-20-22A1.pdf>. [↑](#footnote-ref-3)