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| C:\Users\User.U-PC\Desktop\Eaco.png | **Input Contribution to EACO Meeting**  Online, 17 - 19 August 2021 |  |  |
|  | **Input Contribution XX** |
|  | **10-August -2021** |
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**Agenda Item 1.2 (IMT mid-band)**

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| ***Part A: Description*** |
| 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)**;  Resolution **245 (WRC 19)** – Studies on frequency-related matters for the terrestrial component of international mobile telecommunications identification in 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 |
| ***Part B: Key Elements – the notables*** |
| **Background**  With demand for IMT applications continuing to increase, additional IMT spectrum identifications in the mid-range frequency bands need to be considered in order to enable future deployments, where these applications and services might be difficult to implement using lower or higher frequency bands. Agenda item 1.2 can help provide ITU Member States greater flexibility in their adoption of suitable frequency bands for IMT implementation subject to sharing and compatibility studies.  The following bands are being considered under AI 1.2: - 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.  In Region 1, the band 3.3-3.4 GHz is already allocated to mobile and identified for IMT by many countries via footnotes **5.429 A** and **B**. This band forms part of the 3.5 GHz range which is in use for 5G services.  The band 6 425-7 125 GHz is being developed for licensed 5G services. The spectrum will be put into use for FWA-type 5G services in order to expand connectivity in areas beyond the edge of the fibre networks.  **Issues**  The Resolution **245 (WRC-19)** seeks to address the following issues: -   1. to conduct and complete the appropriate studies of technical, operational and regulatory issues taking into account:    * evolving needs to meet emerging demands for IMT and to ensure protection of existing services against any interference;    * technical and operational characteristics of terrestrial IMT systems    * the deployment scenarios envisaged for IMT systems and the related requirements   of balanced coverage and capacity;   * + the needs of African countries especially in deploying AP30B ;   + the time-frame in which spectrum would be needed;  1. to conduct and complete the sharing and compatibility studies    * 3 600-3 800 MHz and 3 300-3 400 MHz (Region 2);    * **3 300-3 400 MHz (**amend footnote 5.429B in **Region 1);**    * **7 025-7 125 MHz (Globally);**    * **6 425-7 025 MHz (Region 1);**    * 10 000-10 500 MHz (Region 2), |
| ***Part C: Current Status of Band*** |
| WP5D reviewed and updated the draft initial working document towards draft CPM text. The WP further updated working documents on sharing and compatibility studies of IMT systems in the frequency bands 6 425-7 125 MHz and 10-10.5 GHz, as well as a framework document for sharing studies. The working document on sharing and compatibility studies of IMT systems in the frequency band 3 300-3 800 MHz was not updated at the last meeting as no input contributions were received on the matter. WP5D developed 2 liaison statements to the contributing groups, reply Liaison Statement to Working Parties 5В, 5С, 7В, 7С and 7D and reply Liaison Statement to WP 7C on complementary information on the EESS (active) antenna pattern to be used for sharing and compatibility studies. WP5D is still waiting for IMT technical characteristics from some contributing Working Parties for the services under their responsibility. The work plan was reviewed and updated as necessary.  The summary list of services that could be relevant for coexistence studies, as identified by WP5D are:   |  |  | | --- | --- | | **Services** | | | Mobile Satellite Service (MSS) | Space Research Service (SRS) | | Aeronautical Mobile Service (AMS) | Earth Exploration-Satellite Service (EESS) | | Radiodetermination Service (RDS) | Inter-Satellite Service (ISS) | | Radiolocation Service (RLS) | Earth Exploration-Satellite (passive) (EESS (passive)) | | Fixed Service (FS) | Space Research Service (passive) (SRS (passive)) | | Space Operation Service (SOS) | Radio astronomy | | Fixed Satellite Services (FSS) |  |   **Findings of Existing Studies C-Band Uplink @ 6 GHz**     |  |  |  | | --- | --- | --- | |  | IMT-Advanced (4G) | IMT-2020 (5G) | | ITU studies | Report ITU-R S.2367 | To be done under AI 1.2 |   ITU-R studies Report S.2367 to date have been carried out in the adjacent band 5925 – 6425 MHz between IMT-Advanced (4G) and FSS. FSS characteristics used in [ITU-R Report S.2367](https://www.itu.int/pub/R-REP-S.2367/fr) are similar to those in the adjacent band 6425 to 6575 MHz.  The existing studies conducted by the ITU-R for the frequency range 5 850-6 425 MHz as outlined in the Report ITU-R S.2367 are related to IMT-Advanced and show minimal potential for IMT operations whilst protecting FSS uplinks. The studies concluded that FSS space receivers would be **subjected to excessive interference** from the aggregate operation of IMT base stations, irrespective of whether they are deployed outdoors or indoors. It was stated that necessary conditions for deployment of IMT systems would include indoor and strict limits (indoor use only, 10-15 dBm e.i.r.p. limit necessary) on maximum allowable e.i.r.p. for IMT stations.  Studies conducted by CEPT between RLAN and FSS as outlined in the [ECC report 302](https://docdb.cept.org/download/cc03c766-35f8/ECC%20Report%20302.pdf) in the adjacent frequency range 5 925-6 425 MHz indicated that outdoor usage of RLANs is not feasible without causing interference FSS satellite receivers. Studies were done for a representative set of satellites currently in operation, some of which operate above 6 425 MHz. These studies conducted so far in Europe show that sharing with unlicensed Wi-Fi indoor systems could be feasible with FSS. |
| ***Part D: Conclusion of the results of studies, if any*** |
| ITU-R sharing and compatibility studies have not yet started as the group is still waiting for technical and operational characteristics of services operating in the bands under AI 1.2. WP5D is expected to start studies at its next meeting in **October 2021**.  Administrations to examine possible scenarios and try to find possible conditions under which it is possible to co-exist between IMT and FSS in the uplink band and provide input to the future EACO and ATU WG or APM meetings as to their findings. |
| ***Part E: Options and Associated Implications*** |
| **Other Considerations Appendix 30B**  The frequency band 6 725-7 025 MHz in Region 1 is subject to the provisions and associated Plan for the fixed-satellite service of Appendix **30B** of the Radio Regulations. Articles 1 and 2 of Appendix **30B** selected this band in 1985 to guarantee, for all countries, equitable access to the geostationary-satellite orbit in the frequency bands of the fixed-satellite service. Therefore, African Administrations received rights to operate this band over their territory without time limits. The List associated with the Plan contain assignments resulting from the successful application of the provisions of Article 6 of Appendix 30B or the implementation of Resolution 148 (WRC-07). The Plan contains all national allotments of all countries and needs particular attention due to the super-status of the Plan with regards to the List and other services.  **Strategic use of 6 GHz band for Wi-Fi**  It is noted that there is growing demand for Wi-Fi connectivity and even mobile operators' use of Wi-Fi to offload a substantial amount of their traffic in urban environments. Administrations may therefore need to balance the requirements for IMT and with those for Wi-Fi. |
| ***Part F: Proposed African Common View and/or Position*** |
| For band 3 300 – 3 400 MHz:   * 3 300-3 400 MHz - Support removal or relaxation of stringent conditions through amendment of footnote **5.429B**. * Encourage African countries not yet listed in footnote 5.429B to consider adding their names to the footnote, in order to achieve harmonization   For band 6 425-7 125 MHz   * Support ITU-R compatibility studies in the band 6 425 - 7 125 MHz with a view to examining possible conditions under which co-existence may be possible. * Conduct a survey among EACO Member States to identify services deployed at national level in the 6 425 – 7 125 MHz, with a view to protect existing services. * Subject to the result of the coexistence studies in ITU-R, it may be possible to support IMT identification in the 6425-7125 MHz. |
| ***Part G: Recommendations and Way Forward*** |
| 1. EACO members to undertake study to determine the extent of usage of the spectrum in the 6 425 - 7 125 MHz and thereafter conduct technical study. 2. It is recommended that EACO secretariat circulate the questionnaire for the survey among Member States about the services in use, at national level, in the frequency band 6 425-7 125 MHz 3. It is recommended to task WG 1A to review and analyse the results of the survey, coordinate and organize the development and follow up of common contributions to the work of ITU-R WP 5D, liaise appropriately with the different stakeholders to promote and advance the views of the EACO members. 4. EACO Administrations are encouraged to participate and follow the ITU-R studies closely to satisfy the agenda item. |

