|  |  |  |  |
| --- | --- | --- | --- |
| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23) Dubai, 20 November - 15 December 2023** | |  |
|  | |  | |
|  | |  | |
| PLENARY MEETING | | **Addendum 4 to Document 65(Add.2)-E** | |
|  | | **30 October 2023** | |
|  | | **Original: English** | |
|  | | | |
| European Common Proposals | | | |
| 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 4 – Frequency bands 6 425-7 025 MHz (Region 1) and 7 025-7 125 MHz (globally)**

Introduction

This document presents the European Common Proposal for the frequency bands 6 425-7 025 MHz, 7 025-7 125 MHz under WRC‑23 agenda item 1.2.

CEPT is neither proposing nor supporting an IMT identification of the frequency range 6 425-7 125 MHz but will only accept it if the conditions below are fulfilled. If these conditions are not fulfilled, CEPT will support NOC (underlined).

CEPT recognizes that some countries and/or regions outside CEPT proposed an IMT identification in the frequency band 6 425-7 125 MHz in the course of the preparation of this agenda item.

CEPT will only accept an IMT identification if all of the following 5 conditions are fully met:

1) the protection of relevant primary services is ensured as provided in EUR/65A2A4/2;

2) continued operation of other services (i.e. those identified in No. **5.458** of the Radio Regulations (RR) for EESS (passive) and RR No. **5.149** for radio astronomy) is addressed as provided in EUR/65A2A4/2 and EUR/65A2A4/3 with additionally new EESS (passive) primary allocations in the frequency bands 4.2-4.4 GHz, and 8.4-8.5 GHz, to allow the continued operation of sea surface temperature (SST) measurements;

3) no limitations are imposed on the existing services and their future development;

4) the IMT Resolution clearly outlines opportunities for other broadband applications in the mobile services (i.e. WAS/RLAN) as well as sufficient flexibility regarding the future wireless broadband usage, i.e. by IMT, WAS/RLAN or under a shared framework between IMT and WAS/RLAN as provided in EUR/65A2A4/2;

5) WRC-23 does not approve an agenda item for WRC-27 studying additional IMT identifications in frequency bands between 7-30 GHz where IMT would have the potential to jeopardize important European space and governmental spectrum.

This ECP provides the relevant RR provisions to achieve this objective to be used in case WRC-23 decides this IMT identification.

It should be noted that Europe will consider, by 2024 or later, the best usage of the frequency band 6 425-7 125 MHz for wireless broadband in the future: either IMT, or WAS/RLAN or a shared framework between IMT and WAS/RLAN, noting that an IMT 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.

Radio astronomy (RAS) measurements

The frequency band 6 650-6 675.2 MHz is used by the radio astronomy service (RAS) for measurement of methanol spectral lines. The Radio Regulations (RR) recognize this usage by RAS in the footnote RR No. **5.149** stating that “administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference”, but this recognition of usage does not guarantee rights for international protection. To be able to continue these measurements, cross border coordination would be required on a case by case basis

Sea surface temperature (SST) measurements

Sea surface temperature (SST) measurements are made in the frequency ranges 6 425-7 075 MHz and 7 075-7 250 MHz. The Radio Regulations (RR) recognize this usage by EESS in the footnote RR No. **5.458** stating that “Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the frequency bands 6 425-7 075 MHz and 7 075-7 250 MHz”, but this recognition of usage does not guarantee rights for international protection.

Some studies submitted to ITU‑R Working Party 7C indicate that the introduction of high-density deployments of applications in the mobile service in the frequency range 6 425-7 125 MHz, depending upon the application, could interfere with SST measurements in locations up to several thousand kilometres from the coast.

These studies indicate that, SST measurements by satellite in the frequency range 6 425-7 125 MHz could be significantly degraded in the next years due to the amount of interference from the foreseen increased usage under the existing mobile allocation.

The SST is a vital component of climate system as it exerts a major influence on the exchange of energy momentum and gases between ocean and atmosphere. SST largely controls the atmospheric response of the ocean to meteorological and climatic time scales. Continuous measurements are crucial to ensure the protection of populations from major climatic events. These measurements could be achieved in different frequency bands presenting similar response to SST and good situation in regards of potential interference.

Therefore, in order to achieve this continuous SST measurement in a long term basis, due to the ongoing studies and consequently to the IMT identification of the frequency band 6 425-7 125 MHz, new primary EESS (passive) allocations are proposed in the 4.2-4.4 GHz and 8.4-8.5 GHz frequency bands, complementarily to the frequency ranges 6 425-7 075 MHz and 7 075-7 250 MHz.

Proposals

EUR/65A2A4/1

CEPT proposes no change (not underlined) for the frequency bands 6 425-7 025 MHz and 7 025-7 125 MHz. Whilst not advocating for it or proactively supporting an IMT Identification, CEPT has considered the conditions under which it would accept an IMT identification in these frequency bands. If these conditions are not fulfilled, CEPT will support NOC (underlined)

CEPT will only accept an IMT Identification if all of the following 5 conditions are fully met:

1) the protection of relevant primary services is ensured as provided in EUR/65A2A4/2;

2) continued operation of other services (i.e. those identified in RR No. **5.458** for EESS (passive) and RR No. **5.149** for radio astronomy) is addressed as provided in EUR/65A2A4/2 and EUR/65A2A4/3 with additionally new EESS (passive) primary allocations in the frequency bands 4.2-4.4 GHz, and 8.4-8.5 GHz, to allow the continued operation of sea surface temperature (SST) measurements;

3) no limitations are imposed on the existing services and their future development;

4) the IMT Resolution clearly outlines opportunities for other broadband applications in the mobile services (i.e. WAS/RLAN) as well as sufficient flexibility regarding the future wireless broadband usage, i.e. by IMT, WAS/RLAN or under a shared framework between IMT and WAS/RLAN as provided in EUR/65A2A4/2;

5) WRC-23 does not approve an agenda item for WRC-27 studying additional IMT identifications in frequency bands between 7-30 GHz where IMT would have the potential to jeopardize important European space and governmental spectrum.

EUR/65A2A4/2#1370

In case of an IMT identification of the frequency band 6 425-7 125 MHz, CEPT proposes that the following elements for a potential Resolution are added to define conditions applicable to the IMT identification, of the frequency range 6 425-7 125 MHz. The proposed elements underline CEPT considerations regarding the possible future usage of this frequency range, and address specifically the protection of relevant primary services:

ELEMENTS FOR POTENTIAL 6 GHZ Resolution with the   
necessary protection requirements

…

considering

…

*d)* that the ITU Radiocommunication Sector (ITU‑R) has studied, in preparation for WRC 23, sharing and compatibility with services allocated in the frequency bands 6 425-7 025 MHz and 7 025-7 125 MHz, and its adjacent frequency band, as appropriate, based on characteristics available at that time, and results may change if these characteristics change;

*e)* that it is expected that only a very limited number of IMT base stations will be communicating towards IMT mobile stations with a positive elevation angle relative to the horizon;

*f)* that, in the frequency band 6 650-6 675.2 MHz, radio astronomy observations are carried out under No. **5.149** for measurement of methanol spectral lines;

*g)* that, in the frequency range 6 425-7 125 MHz or parts thereof, IMT and other broadband applications of the mobile service, including other wireless access systems (e.g. wireless access system (WAS)/radio local area networks (RLAN)), are intended to provide telecommunication services to users on a worldwide, regional or national scale;

…

noting

…

recognizing

*a)* that an IMT identification of a frequency band does not establish priority in the Radio Regulations and does not preclude the use of the frequency band by any application of the services to which it is allocated;

*a bis*) that some administrations are considering the use of the frequency band 6 425-7 125 MHz for IMT, for WAS/RLAN or for a shared framework between IMT and WAS/RLAN;

*b)* that studies have shown that the protection of feeder links for the non-geostationary-satellite orbit (non-GSO) fixed-satellite service (FSS) (space-to-Earth) requires the determination of protection distances ranging between a few kilometres to tens of kilometres. These protection distances are site-specific and depend on several elements, such as the propagation parameters, local terrain topography, station and orbital parameters of the feeder links for non-GSO FSS (space-to-Earth);

*c)* that IMT systems are expected to be implemented by the year 2030 in the frequency band 6 425-7 125 MHz in time to help meet the spectrum requirement of existing and future IMT;

*d)* that WRC-23 allocated the frequency bands 4.2-4.4 GHz and 8.4-8.5 GHz to EESS (passive) on a primary basis which will enable measurement complementary to passive microwave sensor measurements carried out over the oceans in the frequency band 6 425-7 075 MHz, and passive microwave sensor measurements carried out in the frequency band 7 075-7 250 MHz under No. **5.458**,

*[Note: The above recognizing d) is added expecting WRC-23 allocates these frequency bands as proposed in EUR/65A2A4/3]*

resolves

1 that administrations wishing to implement IMT consider use of the frequency bands 6 425-7 025 MHz, identified for IMT in Region 1 and 7 025-7 125 MHz identified for IMT in all Regions taking into account the latest relevant ITU‑R Recommendations;

1*bis* that *resolves* 1 does not establish any priority and does not preclude the use of the frequency bands 6 425-7 025 MHz in Region 1 and 7 025-7 125 MHz in all Regions by any application of the mobile service or of other services to which the frequency bands are allocated taking into account *considering* *g)* and *recognizing* *a bis*);

2 that administrations wishing to implement IMT in the frequency bands 6 425-7 025 MHz and 7 025-7 125 MHz, or parts thereof, shall apply the following conditions to IMT to ensure the protection, continued use and future development of the fixed-satellite service (Earth-to-space):

2.1 the level of expected equivalent isotropically radiated power (e.i.r.p.) emitted by an IMT base station as a function of vertical angle above the horizon in the frequency band 6 425-7 075 MHz or part thereof shall not exceed the following values:

|  |  |
| --- | --- |
| Vertical angle measurement window θL ≤ θ < θH (vertical angle θ above horizon) | Expected e.i.r.p.  (dBm/MHz)  (NOTES 1, 2, 3) |
| 0° ≤ θ < 5° | 25 |
| 5° ≤ θ < 10° | 20 |
| 10°≤ θ < 15° | 13 |
| 15°≤ θ < 20° | 12 |
| 20°≤ θ < 30° | 10 |
| 30°≤ θ < 60° | 9 |
| 60°≤ θ ≤ 90° | 9 |

NOTE 1: The expected e.i.r.p. is defined as the mathematical expectation (i.e. an averaging) of the e.i.r.p:

* over horizontal angles between –180° to +180°, and the IMT base station beamforming in a specific direction within its steering range,
* over different beamforming directions within the IMT base station steering range, and
* over the specified vertical angle measurement window θL ≤ θ < θH.

NOTE 2: An IMT base station must comply with the specified limits on expected e.i.r.p. for all mechanical tilts with which it can be deployed.

NOTE 3: For calculation of expected e.i.r.p., the beamforming directions used in the averaging process have a uniform angular distribution within the steering range of the IMT base station.

See the Annex of this Resolution for further guidance.

3 that administrations wishing to implement IMT in the frequency band 6 700-7 075 MHz shall ensure the protection, continued use and future development of fixed-satellite service (space-to-Earth) stations through the adoption of site-specific coordination, either on a national basis or through bilateral agreement;

4 that IMT transmitting aircraft stations shall not be used within the frequency bands 6 650-6 675.2 MHz and 6 700-7 075 MHz,

encourages administrations

1 to ensure that provisions for the implementation of IMT does not adversely affect the operation of FSS earth stations and their future development;

2 to take all practicable steps to protect the radio astronomy service from harmful interference in the frequency band 6 650-6 675.2 MHz, which covers spectral lines of importance for current astronomical investigations, in accordance with No. **5.149**,

invites the ITU Radiocommunication Sector

…

3 to develop a Recommendation to address methods for the determination of the protection area around a non-GSO earth station in the frequency band 6 700-7 075 MHz, from an IMT base station;

4 to regularly review, as appropriate, the impact of evolving technical and operational characteristics of IMT systems (including base-station density) on sharing and compatibility with space services, and to take into account the results of these reviews in the development and/or revision of ITU‑R Recommendations/Reports addressing, *inter alia*, if necessary, applicable measures to mitigate the risk of interference into space services;

5 to develop an ITU‑R Recommendation to address methods for the determination of the protection area around existing radio astronomy service stations from IMT stations in the frequency band 6 650-6 675.2 MHz;

6 to update existing ITU‑R Recommendations/Reports or develop new ITU‑R Recommendations, as appropriate, to provide information and assistance to the concerned administrations on possible coordination of fixed service stations with IMT stations in the frequency band 6 425-7 125 MHz.

Annex to Resolution

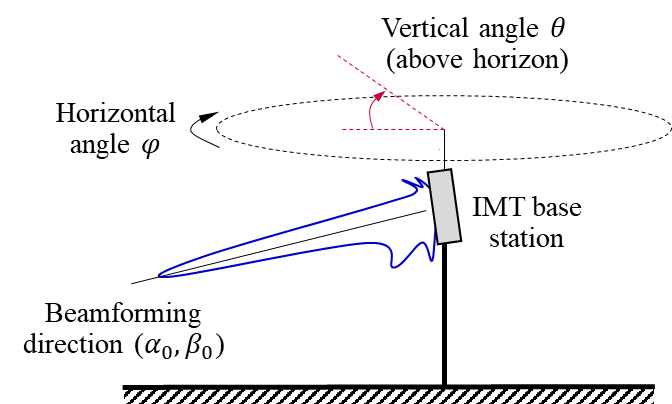
Calculation of the expected e.i.r.p. of an IMT base station

The following outlines the theoretical calculation of the expected e.i.r.p. of an IMT base station for assessing the compliance of IMT base station equipment with the limit on expected e.i.r.p.

The e.i.r.p. of an IMT base station in the horizontal (azimuth) direction and vertical (elevation) direction above the horizon can be written as . The parameters and are the horizontal and vertical beamforming directions, i.e. the angles towards which the base station electronically steers a beam. These are illustrated in Figure 1 below.

figure 1

Illustration of horizontal (azimuth) angle, vertical (elevation) angle and beamforming directions



The expected e.i.r.p. of an IMT base station within a vertical angle measurement window can be calculated by averaging the e.i.r.p. of the base station as follows:

**1) Averaging over beamforming directions for a given vertical angle and horizontal angle – For an AAS base station within a given steering range,** a sufficient sampling of beamforming directions is necessary to allow an accurate averaging of the expected e.i.r.p.

The beamforming directions have a uniform angular distribution within the steering range of the IMT base station. In other words:

where refers to the weight for the th beamforming direction, i.e., the fraction of the steering range represented by the th beamforming direction.

Steering ranges over which the AAS is compliant must be declared and the IMT equipment shall be operated with beams only within the steering ranges and with the power and spectrum utilization (e.g. resource blocks) for which there is compliance with the limits on expected e.i.r.p.

Testing shall be conducted with the IMT base station e.i.r.p. measured as the sum of e.i.r.p. in both polarizations.

**For a non-AAS base station,**  where and is the electrical tilt.

It is noted that the compliance with the limits on expected e.i.r.p. could be limited to a given range of electrical tilts.

**2) Averaging over horizontal and vertical angles** – The expected e.i.r.p. is then calculated by averaging the results of Step (1) over horizontal angles between – to + with respect to the base station horizontal boresight, and vertical angles within vertical angle measurement window with respect to the horizon. In other words:

**Reasons:** Background/justification for the expected e.i.r.p. mask proposed in the Resolution.

CEPT members have actively participated and contributed to the studies in ITU‑R Working Party (WP) 5D on the protection of FSS uplink from IMT in the frequency band 6 425-7 125 MHz and several simulations have been developed to assess the interference from IMT to FSS uplink. Such studies are referred to in the CPM Report and some resulted to the expected e.i.r.p. technical conditions in Alternative 2 Example 2 and Example 3. CEPT has conducted additional technical analysis, extending from what was considered in the studies concluded in the CPM Report. The results of such independently developed simulations show very similar results when the same assumptions are used.

CEPT considers that studies on the technical provisions to effectively protect FSS uplink should be based on practical FSS use in this band, and assumptions on the number of Base Stations in future 6 GHz IMT deployment. FSS protection is an international obligation and IMT deployment in this band may be of interest for CEPT, depending on the later decision by CEPT on the use of this band for IMT, RLAN or a shared framework between IMT and RLAN.

CEPT proposed expected e.i.r.p. mask is based on the following underlying assumptions.

IMT urbanization characteristics

Investigation on IMT urbanization characteristics have been considered because the different assumptions on suburban/urban areas (cell size, attenuation due to clutter) may have an impact in the level of aggregate interference. An exercise to quantify the urbanization level of the frequency band 3.5 GHz French mobile networks has been undertaken.

‒ following methodology (with seven categories of urbanization levels) described in [Eurostat Report](https://ec.europa.eu/eurostat/documents/3859598/15348338/KS-02-20-499-EN-N.pdf/0d412b58-046f-750b-0f48-7134f1a3a4c2?t=1669111363941) to define cities, towns[[1]](#footnote-1)1;

‒ using the resulting split (in percentages apportionment) of French towns, cities into seven levels with [latest data (January 2023)](https://www.insee.fr/fr/information/6439600);

‒ using the [data related to latest French deployment of 5G NR base stations in the frequency band 3400-3800 MHz](https://data.anfr.fr/anfr/visualisation?id=dd11fac6-4531-4a27-9c8c-a3a9e4ec2107).

The result of this exercise was 77.5% / 19.6% / 2.9% for urban / suburban / rural, which was used for defining the expected e.i.r.p. mask.

IMT deployment

The following IMT deployment assumptions are based on two CEPT countries extended over the entire satellite visibility within Region 1.

One example of base station density deployment was based on the area-based RaRb method, assuming Ra of 38.6% for urban and 46.7% for suburban, and Rb of 1% to fit the IMT urbanization characteristics as above. Unpopulated Region 1 areas (e.g. Sahara, Siberia) are excluded. As examples, for protection of FSS at 64°E the BS count would be approximately 2 million, and at 83.5°E approximately 1.8 million.

Another example was based on a population-based method to determine the BS positions on Earth using SEDAC[[2]](#footnote-2)2 in 1 deg. resolution. The base station counts was calculated assuming the same base station density per population as in the case of UK deployment at 2.1 GHz. As examples, for protection of FSS at 64°E the base station count would be approximately 1.8 million, and at 83.5°E approximately 1.4 million. The base stations will be split into urban / suburban / rural with percentages 77.5% / 19.6% / 2.9%, respectively as explained above.

Cell size: using ITU‑R WP 5D assumptions, i.e.: 0.3 km for urban and 0.6 km for suburban/ rural.

Region 1 only, Region 3 excluded.

Clutter loss model

Separate clutter loss models were used and the proposal was based on an in-between results.

‒ Clutter loss model as described in Document 3K/178.

‒ Recommendation ITU‑R P.2108-1 at 6 775 MHz, applicable to those base stations below rooftop. Clutter loss calculations are done independently of terrain loss calculations, meaning that a BS could be shielded by terrain, clutter, both, or none of the two.

Satellite characteristics

‒ Global beam, using Carrier #1, normalized antenna pattern based on an antenna efficiency of 81% as presented in Document 5D/1647 (Figure 5).

‒ Orbital positions: using 15.5°W, 25°E, 64°E, 83.5°E, i.e., existing European Satellite orbital positions, as examples of representative use, some other positions used or planned to be used by real satellites may also be tested.

EUR/65A2A4/3

In order to achieve continuous SST measurements in the long term, due to the ongoing studies and in reaction to possible decisions made by WRC-23 under agenda item 1.2, CEPT would propose that new primary EESS (passive) allocations are added to the frequency bands 4.2-4.4 GHz and 8.4-8.5 GHz, together with necessary specific conditions through RR footnotes.

These elements for the above mentioned provisions would, first include the following revisions to the RR Table of Frequency Allocations:

3 600-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 4 200-4 400 EARTH EXPLORATION-SATELLITE (passive) ADD 5.A112 ADD 5.B112  AERONAUTICAL MOBILE (R) 5.436  AERONAUTICAL RADIONAVIGATION 5.438  5.439 5.440 | | |

7 250-8 500 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 8 400-8 500 EARTH EXPLORATION-SATELLITE (passive) ADD 5.A112 ADD 5.C112  FIXED  MOBILE except aeronautical mobile  SPACE RESEARCH (space-to-Earth) 5.465 5.466 | | |

They would also include the following proposals:

‒ suppression of RR No. **5.437**: “Passive sensing in the Earth exploration-satellite and space research services may be authorized in the frequency band 4 200-4 400 MHz on a secondary basis.      (WRC‑15)”;

‒ addition of the following new RR provisions:

No.**5.A112**: “The allocations to the Earth exploration-satellite (passive) service on a primary basis in the frequency bands 4.2-4.4 GHz and 8.4-8.5 GHz shall be used according to Resolution **[EUR-A112-SST] (WRC-23)**. These allocations to the Earth exploration-satellite (passive) are complementary frequency bands for the observations made in the frequency bands described in No **5.458**.     (WRC‑23)”.

No. **5.B112**: “Earth exploration-satellite (passive) sensors in the frequency band 4.2-4.4 GHz shall not claim protection from stations in the aeronautical mobile and aeronautical radionavigation services within the frequency band 4.2-4.4 GHz and should not impose undue constraints on the use of the adjacent frequency bands by the primary allocated services in those frequency bands.     (WRC‑23)”.

No. **5.C112**: “Earth exploration-satellite (passive) sensors in the frequency band 8.4-8.5 GHz shall not claim protection from the stations in the fixed, mobile except aeronautical mobile, and space research services within the frequency band 8.4-8.5 GHz and should not impose undue constraints on the use of the adjacent frequency bands by the primary allocated services in those frequency bands.     (WRC‑23)”.

The draft new Resolution **[EUR-A112-SST] (WRC-23)** mentioned in RR No. **5.A112** above is given below:

draft new Resolution [EUR-A112-SST] (WRC-23)

Studies relating to complementary Earth exploration-satellite service (EESS) (passive) allocation for Sea Surface Temperature Measurements

The World Radiocommunication Conference (Dubai, 2023),

considering

*a)* that the frequency bands 6 425-7 075 MHz and 7 075-7 250 MHz are used from several years by the Earth exploration-satellite service (EESS) (passive) to perform Sea Surface Temperature (SST) measurements;

*b)* that the SST remains a vital component of climate system as it exerts a major influence on the exchange of energy momentum and gases between ocean and atmosphere SST largely controls the atmospheric response of the ocean to meteorological and climatic time scales;

*c)* that SST measurements are important for detecting and forecasting meteorological event that drastically impact safety and security of administrations and their population;

*d)* that SST data sets are an essential resource for monitoring and understanding climate variability and climate change;

*e)* Resolution 77/165 of the United Nations General Assembly (UNGA) on protection of global climate for present and future generations of humankind, adopted on 14 December 2022;

*f)* that SST data sets are an essential resource for monitoring El Niño phenomenon that has a recurring character and can lead to extensive natural hazards with the potential to seriously affect humankind;

*g)* UNGA Resolution 76/204 on disaster risk reduction, adopted on 21 December 2021;

*h)* that SST measurement by satellite, in the microwave domain, remains the only measurements enabling daily and global measurement of SST, independently of the meteorological conditions (i.e. presence of clouds);

*i)* that SST measurement capabilities depend on the availability of radio frequencies;

*j)* that SST measurement over different frequency channels might improve interference mitigation;

*k)* that certain frequency bands used by SST have unique physical characteristics, so complementary frequency bands need to be carefully studied,

noting

*a)* that, under No. **5.458**, passive microwave sensor measurements are carried out over the oceans in the frequency band 6 425-7 075 MHz, and passive microwave sensor measurements are carried out in the frequency band 7 075-7 250 MHz;

*b)* that WRC‑23 identified the frequency band 6 425-7 025 MHz, in Region 1 and the frequency band 7 025-7 125 MHz worldwide for International Mobile Telecommunication (IMT) in the mobile service allocation;

*c)* that some ITU‑R sharing studies are ongoing regarding the impact of radio local area network (RLAN) already used in some countries under the mobile allocation in the frequency band 6 425-7 125 MHz on SST measurements;

*d)* that some ITU‑R sharing studies are ongoing regarding the impact of potential new identification of IMT in the frequency bands 6 425-7 025 MHz and 7025-7 125 MHz on SST measurements;

*e)* that some ITU‑R sharing studies ongoing between EESS (passive) and incumbent services in the frequency bands 4.2-4.4 GHz and 8.4-8.5 GHz,

recognizing

*a)* that the preliminary studies, referred to in *noting c)* and *noting d),* establish that large deployments over land masses of equipment under the Mobile Service could produce harmful interference to EESS (passive) above the ocean, including coastal areas;

*b)* that some complementary frequency bands need to be determined in order to ensure the continuity of the SST measurement by EESS (passive);

*c)* that due to the sensitivity of the brightness temperature of sea surface in regards of frequency, it is appropriate to perform SST measurements in frequency bands within the range 4 GHz to 9 GHz;

*d)* that the preliminary studies, referred to in *noting e),* in the frequency bands 4.2-4.4 GHz and 8.4-8.5 GHz, conclude that sharing between EESS (passive) and incumbent services is feasible;

*e)* that the frequency band 8.4-8.5 GHz is not intended to be used for high-density mobile applications,

resolves to invite the ITU Radiocommunication Sector to complete, in time for WRC-27

1 the relevant technical and operational studies related to the upgrade of the secondary Earth exploration-satellite (passive) service allocation to primary in the frequency band 4.2-4.4 GHz;

2 the relevant technical and operational studies related to the new primary Earth exploration-satellite (passive) allocation in the frequency band 8.4-8.5 GHz,

instructs the Director of the Radiocommunication Bureau

to include in the Report of the Director to WRC‑27 the progress on the ITU‑R studies referred to in the *resolves to invite the ITU Radiocommunication Sector*.

**Reasons:** To set up the framework applicable to the new EESS (passive) allocations in the frequency bands 4.2-4.4 GHz and 8.4-8.5 GHz including studies for WRC-27.

EUR/65A2A4/4#1391

The suppression of Resolution **245 (WRC-19)** may be commonly addressed for all parts.

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

**Reasons:** Resolution **245** **(WRC-19)** tasked WRC-23 with agenda item 1.2 and is therefore not necessary anymore.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 1 See Chapter 7 of this report. [↑](#footnote-ref-1)
2. 2 NASA Socioeconomic Data and Applications Center (SEDAC) Population Density Zones (2020). [↑](#footnote-ref-2)