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| **World Radiocommunication Conference (WRC-15)Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 25 toDocument 9-E** |
|  | **14 October 2015** |
|  | **Original: English** |
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| European Common Proposals |
| Proposals for the work of the conference |
|  |
| Agenda item 10 |

10to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention,

Introduction

Agenda item 10 requests WRC 15 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its view on the preliminary agenda for the subsequent Conference and on possible agenda items for future conferences, taking into account Resolution 808 (WRC 12).

The European proposals for the Agenda for WRC-19 builds upon some of the preliminary agenda items contained in Resolution 808 (WRC-12), agenda items consequential to European Common Proposals for this Conference as well as proposals for the consideration of new topics.

On a general basis, all proposed agenda items have to be considered under the general principle to take due regard to the requirements of existing and future services in the bands under consideration in a view of not putting undue constraints on existing services.

On this basis, Europe proposes that WRC 15 suppresses Resolution 808 (WRC-12) and adopts Draft New Resolution [EUR-A10] (WRC-15) as the basis for the provisional agenda for WRC-19 for adoption by the Council.

SUP EUR/9A25/1

RESOLUTION 808 (WRC‑12)

Preliminary agenda for the 2018 World Radiocommunication Conference

ADD EUR/9A25/2

DRAFT NEW RESOLUTION [EUR-A10] (WRC-15)

Agenda for the 2019 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that, in accordance with No. 118 of the ITU Convention, the general scope of the agenda for a world radiocommunication conference should be established four to six years in advance and a final agenda shall be established by the Council two years before the conference;

*b)* Article 13 of the ITU Constitution relating to the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention relating to their agendas;

*c)* the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

recognizing

that, in preparing this agenda, many items proposed by administrations could not be included and have had to be deferred to future conference agendas,

resolves

to recommend to the Council that a world radiocommunication conference be held in 2019 for a period of four weeks, with the following agenda:

1 on the basis of proposals from administrations, taking account of the results of WRC‑15 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the bands under consideration, to consider and take appropriate action in respect of the following items:

1.1 to consider additional spectrum allocations to the mobile service on a primary basis and identification of frequency bands for International Mobile Telecommunications, in accordance with Resolution [EUR-B10-1] (WRC-15);

1.2 to consider a primary allocation of the frequency band 50-54 MHz to the amateur service in accordance with Resolution [EUR-C10-2] (WRC-15);

1.3 to consider identification by footnote for the land mobile and fixed services in the range 275-450 GHz, while maintaining the protection to passive services, subject to No. 5.565, in accordance with Resolution [EUR-D10-3] (WRC-15);

1.4 to consider, based on studies regarding the spectrum requirements for the amateur service, a possible allocation to the amateur service in the frequency band 1 800-2 000 kHz in order to achieve global harmonization, in accordance with Resolution [EUR-E10-4] (WRC-15);

1.5 to consider an additional primary allocation to the fixed-satellite service (Earth-to-space) in the frequency band 51.4-52.4 GHz and regulatory framework related to Non-GSO FSS systems in the range 37.5-52.4 GHz in accordance with Resolution [EUR-F10-5] (WRC-15);

1.6 to consider establishment of mandatory power limits within mobile satellite service, meteorological satellite service or Earth exploration-satellite service in the 401-403 MHz and 399.9-400.05 MHz frequency bands, in accordance with Resolution [EUR-G10-6] (WRC-15);

1.7 to consider an upgrade of the secondary allocation to the Meteorological-satellite service (space-to-Earth) in the band 460-470 MHz and to the Earth exploration-satellite service (space-to-Earth), as contained in No. 5.289, to a primary status, while putting relevant constraints on this service in order to protect the existing primary services in the band, in accordance with Resolution [EUR-H10-7] (WRC-15);

1.8 to consider allocations to the space operation service in the range 137-174 MHz and 230-470 MHz to accommodate the growing number of small non-GSO satellites, in accordance with Resolution [EUR-I10-8] (WRC-15);

1.9 to consider the use of the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz by earth stations on mobile platforms communicating with geostationary space stations in the fixed-satellite service, in accordance with Resolution [EUR-J10-9] (WRC-15);

1.10 to consider a revision of Annex 7 to Appendix 30 of the Radio Regulations in accordance with Resolution [EUR-K10-10] (WRC-15);

1.11 to consider regulatory actions for the development and implementation of the Global Aeronautical Distress and Safety System (GADSS) in accordance with Resolution [EUR-L10-11] (WRC-15);

1.12 to consider regulatory provisions and, including spectrum allocations, regarding maritime radio devices operating without regulatory connection to vessels or coast stations to ensure safety of navigation and to protect the integrity of the GMDSS in accordance with Resolution [EUR-M10-12] (WRC-15);

2 to examine the revised ITU‑R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution 28 (Rev.WRC‑03), and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in Annex 1 to Resolution 27 (Rev.WRC‑07);

3 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the Conference;

4 in accordance with Resolution 95 (Rev.WRC‑07), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

5 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention;

6 to identify those items requiring urgent action by the Radiocommunication Study Groups in preparation for the next World Radiocommunication Conference;

7 to consider possible changes in response to Resolution 86 (Rev.Marrakesh, 2002) of the Plenipotentiary Conference: “Advance publication, coordination, notification and recording proce­dures for frequency assignments pertaining to satellite networks”, in accordance with Resolution 86 (Rev.WRC‑07);

8 to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account [Resolution 26 (Rev.WRC‑07)](#RES_26_rev_WRC07);

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

9.1 on the activities of the Radiocommunication Sector since WRC‑12;

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and

9.3 on action in response to [Resolution 80 (Rev.WRC‑07)](#RES_80_rev_WRC07);

10 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences,

resolves further

to activate the Conference Preparatory Meeting,

invites the Council

to finalize the agenda and arrange for the convening of WRC‑19, and to initiate as soon as possible the necessary consultations with Member States,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a report to WRC‑19,

instructs the Secretary-General

to communicate this Resolution to international and regional organizations concerned.

ADD EUR/9A25/3

DRAFT NEW RESOLUTION [EUR-B10-1] (wrc-15)

Frequency related matters for future International Mobile Telecommunications (IMT) applications

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that IMT is intended to provide telecommunication services on a worldwide scale, regardless of location, and type of network or terminal;

*b)* that in both developed and developing countries the main delivery mechanism for broadband access is through mobile devices;

*c)* that IMT systems for 2020 and beyond are envisaged to expand and support diverse usage scenarios that will extend beyond the current IMT systems;

*d)* that there continues to be an increase in the data-traffic demand for mobile communications beyond 2020 to satisfy numerous connections and user experience, especially in areas of high user density;

*e)* that the increase in data-traffic demand is also to a large extent driven by audiovisual content;

*f)* that IMT and other mobile broadband systems contribute to global economic and social development by providing a wide range of multimedia applications such as higher resolution multimedia contents, mobile cloud computing, virtual meetings, smart-car, augmented reality, real-time multimedia streaming, mobile e-Health, and other applications;

*g)* that ITU-R has developed a work plan, timeline and process for the future development of IMT, necessary to provide standards by the 2020 timeframe;

*h)* that ITU-R studied frequency bands between 470-6 425 MHz when considering frequency-related matters on IMT and other terrestrial mobile broadband applications in preparation for WRC-15;

*i)* that ultra-low latency and very high bit rate applications of IMT and other mobile broadband systems will require larger contiguous blocks of spectrum than those available in frequency bands that are currently identified for use by administrations wishing to implement IMT;

*j)* that higher frequency bands above 6 GHz may be suitable to examine for these larger blocks of spectrum;

*k)* that the properties of higher frequency bands, such as shorter wavelength, could also enable the use of advanced MIMO and beam forming techniques;

*l)* that the diverse range of scenarios for the future development of IMT implies diverse performance requirements that may be satisfied in different frequency ranges;

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

*n)* the need to protect existing services and allow for their continued development when considering frequency bands for possible new allocations to any service;

*o)* identification of frequency bands allocated to mobile service for IMT may change the sharing situation regarding applications of services to which the band is already allocated, and may require additional regulatory actions;

*p)* that the appropriate choices of contiguous frequency bands to provide coverage, capacity and performance are necessary and are very important to the cost effective implementation of future systems taking into account the radio wave propagation characteristics and implementation complexity and cost factors,

noting

*a)* that Question ITU-R 229-3/5 addresses the further development of IMT;

*b)* that IMT encompasses IMT-2000, IMT-Advanced and “IMT-2020”[[1]](#footnote-1) collectively, as described in Resolution ITU-R 56-2;

*c)* that Resolution ITU-R [PRINCIPLE] address the principles for the process of development of “IMT-2020”, and Question ITU-R 77-7/5 considers the needs of developing countries in the development and implementation of IMT;

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

*e)* that Report ITU-R M.2320 addresses future technology trends of terrestrial IMT systems;

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

*g)* that there are on-going studies within ITU-R on the propagation characteristics for mobile systems in higher frequency bands;

*h)* that there are major advantages with harmonization between regions,

recognizing

*a)* that there is a fairly long lead time between the allocation of frequency bands by world radiocommunication conferences and the deployment of systems in those bands, and timely availability of focused and contiguous blocks of spectrum is therefore important to support the development of broadband applications such as IMT;

*b)* that frequency bands allocated to passive services on an exclusive basis are not suitable for an allocation to the mobile service;

*c)* that any identification of frequency bands for IMT should take into account the use of the bands by other services,

resolves to invite ITU-R

1 to conduct, in time for WRC-19, the necessary studies to determine spectrum requirements necessary to support future IMT systems taking into account:

– technical and operational characteristics of terrestrial IMT systems supporting very high data rates, including the evolution of existing mobile systems through advances in technology, spectrally and energy-efficient techniques, and their deployment;

– various deployment scenarios and related requirements of high data traffic;

– that the optimum system bandwidth may be different depending on the frequency range;

– the need for competition;

– that the needs for additional spectrum may vary between countries (e.g. developed and developing countries);

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

2 to conduct sharing studies between the mobile service and other services to which the bands are allocated, taking into account the existing conditions contained in the Radio Regulations, as well as the use of the bands by the other services;

3 to conduct compatibility studies between the mobile service and other services in adjacent bands, taking into account the existing conditions contained in the Radio Regulations, as well as the use of the bands by the other services;

4 to study the following frequency bands;

 31.8-33.4 GHz

 40.5-43.5 GHz

 45.5-48.9 GHz

 66-71 GHz

 71-76 GHz

 81-86 GHz

5 To also study the band 24.5-27.5 GHz, taking into account the need to ensure the protection of existing earth stations and the deployment of future receiving earth stations under the EESS (space-to-Earth) and SRS (space-to-Earth) allocation in the frequency band 25.5-27 GHz band and of future transmitting earth stations under the FSS allocation made by WRC-12, in the frequency band 24.65-25.25 GHz,

further resolves to invite WRC-19

to consider, based on the results of the relevant studies, additional spectrum allocations to the mobile service on a primary basis and to consider identification of frequency bands for International Mobile Telecommunications, limited to the specific bands listed in *resolves* 4 and 5.

Proposals on an Agenda item for WRC-19

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| Subject:  | Frequency related matters for future International Mobile Telecommunications (IMT) applications [EUR-B10-1] (WRC-15). |
| Origin: | CEPT |
| Proposal:to consider additional spectrum allocations to the mobile service on a primary basis and identification of frequency bands for International Mobile Telecommunications, in accordance with Resolution [EUR-B10-1] (WRC-15). |
| Background/reason:Up to this time the frequency ranges generally considered suitable for terrestrial IMT technology are below 6 GHz (Report ITU-R M.2074 reinforces this view). The bands already identified for IMT provide a range of possibilities to provide both coverage to wide areas (e.g. the bands around 1 GHz) and more localized capacity (e.g. the various bands from around 1 GHz up to around 3.5 GHz). These bands and those that may be identified at WRC-15 under Agenda Item 1.1, are needed to satisfy the current and anticipated demand for mobile broadband services up to around 2020. The work to estimate the amount of spectrum required has been updated and reported in Report ITU-R M.2290 recently approved in ITU-R SG5. During the development of this report new ideas have been emerging to provide much higher capacity in a more ubiquitous and evenly distributed manner across an IMT network area. Improving the Quality of Experience (QoE) for mobile network users by increasing bit rates in larger portions of the coverage area is seen as a major requirement. In addition, lower probability of outage (better coverage), lower latency, support for a larger variety of devices, lower infrastructure deployment costs, higher versatility and scalability, and improved battery life, among others, are also seen as important for future improvements.The target for this new level of performance is the capability of providing a consistent 1Gbps experience for users across a coverage area. One solution to achieve this would be the use of wider bandwidth systems. These wider bandwidth systems will need to be accommodated in higher frequency bands that previously have not been considered suitable for cellular mobile network communications.This agenda item is intended to address the future requirements for globally harmonized spectrum for International Mobile Telecommunications on a focussed amount of bands above 6 GHz, whilst also investigating the most appropriate way to safeguard existing use in these bands. |
| Radiocommunication services concerned:Fixed, Mobile, Amateur |
| Indication of possible difficulties:The proposed bands are widely used for terrestrial services on a co-primary basis |
| Previous/ongoing studies on the issue:Some of studies have been already initiated and are now on-going in the ITU-R WP 5D. |
| Studies to be carried out by:ITU-R SG5 | with the participation of:Administrations and Sector members of the ITU-R |
| ITU‑R Study Groups concerned:SG5, SG4, SG6, SG7 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/4

DRAFT NEW RESOLUTION [EUR-C10-2] (WRC-15)

Primary allocation of the band 50-54 MHz to the Amateur Service in Region 1

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that fully or partially harmonized worldwide bands for radiocommunication services are desirable in order to achieve international operability and the benefits of economies of scale;

*b)* that there is a need to establish sharing conditions, when considering frequency bands for possible additional allocations to any service;

*c)* that the use of the frequency band 47-68 MHz by the broadcasting service has decreased significantly,

noting

*a)* that the frequency band 50-54 MHz is mostly allocated to the amateur service on a primary basis in Region 2 and Region 3;

*b)* that No. 5.169 of the Radio Regulations provides for an alternative allocation to the amateur service on a primary basis in a number of countries in Region 1;

*c)* that No. **5.162A** of the Radio Regulations provides for an additional allocation to the radiolocation service on a secondary basis in a number of countries, limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC-97);

*d)* that the frequency band 47–68 MHz, or part of it, is allocated to the mobile service on a primary basis in a number of countries in Region 1,

resolves to invite ITU-R

1 to study spectrum requirements in Region 1 for the amateur service in the frequency band 50-54 MHz;

2 to study sharing between the amateur service and the mobile and fixed services, the radiolocation service and the broadcasting service, taking into account the results of the studies under *resolves 1* above,

resolves to invite WRC-19

to consider the results of the above studies and take appropriate actions.

Proposals on an Agenda item for WRC-19

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| Subject:  | Allocation of the band 50-54 MHz to the Amateur Service in Region 1 |
| Origin: | CEPT |
| Proposal:to consider the allocation of the frequency band 50-54 MHz to the amateur service in accordance with Resolution [EUR-C10-2] (WRC-15). |
| Background/reason:Broadcasting has significantly declined in the band and allocations for the mobile and amateur service have been established.A Region 1 allocation would facilitate further worldwide harmonization.The amateur service sees a need to bridge the very wide gap between 28 MHz and 144 MHz.Particular consideration is asked for: Harmonized weak signal communications with Regions 2 and 3. Currently the band 50.0-50.5 MHz is used for this purpose.By 2019, TV Broadcasting in other parts of Region 1 within this frequency range is expected to decline further and we therefore consider that updates and harmonization are long overdue. |
| Radiocommunication services concerned:Fixed, mobile and broadcasting service |
| Indication of possible difficulties: |
| Previous/ongoing studies on the issue: |
| Studies to be carried out by:WP 5A | with the participation of:Administrations and Sector members of the ITU-R |
| ITU‑R Study Groups concerned:SG5 and SG6 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/5

DRAFT NEW RESOLUTION [EUR-D10-3] (WRC-15)

 Studies towards an identification for land mobile and fixed services operating in the frequency range 275-450 GHz

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that a number of bands in the frequency range 275-1 000 GHz are identified for use by administrations for passive services, such as radio astronomy service, Earth exploration satellite service (passive), and space research service (passive) by No. 5.565;

*b)* that the use of the range above 275 GHz by the passive services does not preclude use of this range by active services;

*c)* that administrations wishing to make available frequencies in the 275-1 000 GHz range for active service applications are urged to take all practicable steps to protect these passive services from harmful interference until the date when the Table of Frequency Allocation is established;

*d)* that the active devices, which can operate at frequencies above 275 GHz are available due to technology developments;

*e)* that propagation characteristics of the frequencies above 275 GHz have already been studied by ITU-R Study Group 3;

*f)* that research and development organizations have demonstrated ultra-high-speed data communication systems up to 100 Gbps operating in the band above 275 GHz;

*g)* that an initial study on technical and operational characteristics of the active services operating in the range 275-1 000 GHz has been carried out by ITU-R WP1A;

*h)* that the technical and operational characteristics of land mobile and fixed services operating in the band above 275 GHz have not been specified and further studies are required;

*i)* that the propagation models of land mobile and fixed services operating in the band above 275 GHz are required;

*j)* that the sharing and compatibility studies between land mobile, fixed services and passive services operating in the band above 275 GHz have not been studied,

noting

*a)* that Question ITU-R 228-1/3 “Propagation data required for the planning of radiocommunication systems operating above 275 GHz” decides the study on propagation models best describe the relationship between atmospheric parameters and electromagnetic wave characteristics on terrestrial link operating at frequencies above 275 GHz;

*b)* that Question ITU-R 235-1/7 “Technical and operational characteristics of applications of science services operating above 275 GHz” decides the study on the technical and operational characteristics of systems operating at frequencies above 275 GHz within the science services;

*c)* that Question ITU-R 237/1 “Technical and operational characteristics of the active services operating in the range 275-1 000 GHz” decides the study on the technical and operational characteristics of active services in the frequency range 275-1 000 GHz;

*d)* that other international organizations are developing standards for the suitable frequency ranges for ultra-high-speed (100-Gbps) data communication systems of Wireless Personal Area Network (WPAN);

*e)* that several ultra-high-speed data communication systems are identified by other international standards bodies,

recognizing

that other active services, including the radiolocation service and amateur service are also developing and demonstrating applications above 275 GHz,

resolves to invite ITU-R

1 to identify characteristics of systems in the land mobile and fixed services operating at frequencies above 275 GHz;

2 to study spectrum requirements of systems in the land mobile and fixed services, taking into account technical and operational characteristics of the active services operating in the frequency range 275-450 GHz;

3 to conduct sharing and compatibility studies between land mobile, fixed and passive services operating in the frequency range 275-450 GHz;

4 to identify candidate frequency bands for use by systems in the land mobile and fixed services, taking into account the results of the studies under *invites ITU-R* 2and 3, and the protection of passive services identified in No. 5.565,

resolves to invite WRC-19

to consider identification by footnote for the land mobile and fixed services operating in the frequency range 275-450 GHz, while maintaining the protection of the passive services, subject to No. **5.565**, taking into account the results of ITU-R studies on sharing and compatibility between passive and active services as well as spectrum requirements for those services,

further resolves

that a future competent conference may consider to establish the Table of Frequency Allocations above
275 GHz, taking into account the result of the relevant studies, not precluding the use by other services.

Proposals on an Agenda item for WRC-19

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| Subject:  | Studies towards an identification for land mobile and fixed services operating in the frequency range 275-450 GHz |
| Origin: | CEPT |
| Proposal:to consider identification by footnote for the land mobile and fixed services in the frequency range 275-450 GHz, while maintaining the protection to passive services, subject to No. 5.565, in accordance with Resolution [EUR-D10-3] (WRC-15).  |
| Background/reason:The frequency range above 275 GHz may be used for experimentation with, and development of, various active and passive services according to No. 5.565**.** However, No. 5.565 was reviewed in accordance with Resolution 950 (Rev.WRC-07)at WRC-12, and specific frequency bands were identified for measurements by passive services, such as radio astronomy service, Earth exploration satellite service (passive), and space research service (passive). The specific identification of the frequencies in the range of 275-1 000 GHz for the passive services does not preclude any use of this range by active services.The active devices which can operate above 275 GHz were extensively studied and developed by research and development organizations around the world. The propagation characteristics of the frequencies above 275 GHz have been studied by ITU-R and the applications of short-range ultra-high-speed (100-Gbps) data communication systems have been discussed by standardization bodies. Standards using the frequencies above 275 GHz will be available within a few years. Several ultra-high-speed transmission applications such as wireless link for data centre, near field communication for toll gate download, and fronthaul/backhaul for mobile systems are expected to be operated in bands above 275 GHz. Thus, it is necessary to ensure a continuous development and introduction of active services whilst ensuring at the same time adequate protection of the passive services in bands identified in No. 5.565 from harmful interference. Therefore, this agenda item for WRC-19 is proposed to consider appropriate regulatory provisions facilitating the introduction of land mobile and fixed services operating in to be determined frequency bands above 275 GHz.ITU-R WP1A has developed and adopted Question ITU-R 237/1, “Technical and operational characteristics of the active services operating in the range 275-1 000 GHz”, to study the technical and operational characteristics of active services in the frequency range 275-1 000 GHz. According to that Question, ITU-R WP1A has developed a new Report ITU-R SM.2352-0 ‘Technology trends of active services in the frequency range 275-3 000 GHz’ to provide technical information for preparation of sharing and compatibility studies between active and passive services, as well as among active services.In order to avoid possible frequency interferences to the identified passive services from the newly developed land mobile and fixed services above 275 GHz, the relevant ITU-R Working Parties should study the technical and operational characteristics required for the active services, and perform the necessary sharing and compatibility studies between the passive and active services.  |
| Radiocommunication services concerned:Mobile Service, Fixed Service , Radioastronomy Service, Earth Exploration Satellite Service (passive), Space Research Service (passive) |
| Indication of possible difficulties:Identification of technical requirements for the terrestrial services and sharing and compatibility studies with Radioastronomy Service, Earth Exploration Satellite Service (passive), Space Research Service (passive) |
| Previous/ongoing studies on the issue:Question ITU-R 237/1 |
| Studies to be carried out by:WP5A/WP5C) | with the participation of:Administrations, academia, terrestrial and passive services organizations |
| ITU‑R Study Groups concerned:SG 1, SG 7 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Common regional proposal: | Yes |
| Remarks:none |

ADD EUR/9A25/6

DRAFT NEW RESOLUTION [EUR-E10-4] (WRC-15)

Allocation to the amateur service in the frequency band 1 800-2 000 kHz

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that a worldwide harmonization of spectrum allocated to the amateur service is desirable from a spectrum efficiency point of view;

*b)* that the use of the band 1 800-1 810 kHz by the radiolocation service and the band
1 850-2 000 kHz by the fixed and mobile except aeronautical mobile services has decreased;

*c)* the growing number of radio amateurs that have access to HF amateur spectrum,

noting

*a)* that the frequency band 1 800-2 000 kHz is allocated to the amateur service in Region 2 and Region 3;

*b)* that the frequency band 1 850-2 000 kHz is shared with fixed, mobile except aeronautical mobile, radiolocation and radionavigation services in Region 2;

*c)* that the frequency band 1 800-2 000 kHz is shared with fixed, mobile except aeronautical mobile, radiolocation and radionavigation services in Region 3,

resolves to invite ITU-R

1 to study spectrum requirements for the amateur service in the frequency band 1 800-
2 000 kHz;

2 to study spectrum requirements for the radiolocation service in Region 1 in the frequency band 1 800-1 810 kHz;

3 to study sharing between the amateur service and the possible continued use of the frequency band 1 800-1 810 kHz by the radiolocation service, taking into account the results of the studies under *resolves 2* above;

4 to study spectrum requirements for the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services in the frequency band 1 850-2 000 kHz;

5 to study sharing between the amateur service and the possible continued use of the frequency band 1 850-2 000 kHz by the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services, taking into account the results of the studies under *resolves* 4 above,

resolves to invite WRC-19

to consider the results of the above studies and take appropriate action, which might include a primary allocation of the frequency band 1 800-2 000 kHz to the amateur service in Region 1, and the possible revision of Nos. 5.96*,* 5.98 and 5.99 as appropriate.

Proposals on an Agenda item for WRC-19

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| Subject:  | An allocation to the amateur service in the frequency band 1 800-2 000 kHz |
| Origin: | CEPT |
| Proposal:to consider the results of the above studies and take appropriate action, which might include a primary allocation of the frequency band 1 800-2 000 kHz to the amateur service in Region 1, and the possible revision of Nos. 5.96**,** 5.98 and 5.99 as appropriate. |
| Background/reason:This would extend the existing primary allocation to the amateur service to a globally harmonized allocation. Furthermore the final sentence of No. 5.96 should be reviewed with the aim to remove it. This would reflect existing use in Region 1. |
| Radiocommunication services concerned:Fixed, maritime mobile, mobile, radiolocation, aeronautical radionavigation and radionavigation services |
| Indication of possible difficulties: |
| Previous/ongoing studies on the issue: |
| Studies to be carried out by:WP5A | with the participation of:Administrations and Sector members of the ITU-R |
| ITU‑R Study Groups concerned:SG5 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| RemarksNone |

ADD EUR/9A25/7

DRAFT NEW RESOLUTION [EUR-F10-5] (WRC-15)

Additional primary allocation to the fixed-satellite service (Earth-to-space) in the frequency band 51.4-52.4 GHz and regulatory framework and sharing conditions in bands within the range 37.5-52.4 GHz between geostationary fixed-satellite service networks and non-geostationary fixed-satellite service systems

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that within the range 37.5-51.4 GHz, the frequency bands 42.5-43.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz are allocated to fixed-satellite service (Earth-to-space). Nevertheless the band 42.5-43.5 GHz is not easy to use from a technical point of view since the band below 42.5 GHz is allocated to fixed-satellite service (space-to-Earth);

*b)* that there is an interest for using the frequency band 51.4-52.4 GHz as an alternative to the band 42.5-43.5 GHz to support new generation of High Throughput Satellites (HTS) systems;

*c)* that the frequency band 51.4-52.4 GHz is allocated to fixed and the mobile services, which will need to be protected, also taking into account the specificity of the fixed service for which this band is available for high density applications as indicated in No. 5.547;

*d)* that RR **5.556** indicates that radio astronomy observations are carried out in this band and that mitigation measures may have to be defined in this regard;

*e)* Resolution 750 (Rev.WRC-12) imposes out of band power limits to fixed services in order to protect the passive band above 52.6 GHz. Similar limits are likely to be needed to protect passive services above 52.6 GHz from FSS earth station unwanted emissions,

also considering

*a)* that there is an emerging interest in operating geostationary-satellite (GSO) FSS networks and non-geostationary-satellite (non-GSO) FSS systems in the 37.5-51.4 GHz frequency range;

*b)* that there is a need to provide for the orderly development and implementation of new satellite technologies in the 37.5-51.4 GHz frequency range;

*c)* that new technologies associated with both GSO FSS networks and non-GSO FSS systems are capable of providing the most isolated regions of the world with high-capacity and low-cost means of communication;

*d)* that there should be equitable access to the radio-frequency spectrum and orbital resources in a mutually acceptable manner that allows for new entrants;

*e)* that the Radio Regulations should be sufficiently flexible to accommodate the introduction and implementation of innovative technologies as they evolve;

*f)* that the application of No. 22.2 can result in uncertainty for non-GSO FSS systems;

*g)* that currently there are no regulatory provisions establishing mechanisms for coordination among non-GSO FSS systems in the frequency range 37.5-51.4 GHz;

*h)* that in the frequency range 37.5-51.4 GHz where there has been little or no deployment of satellite systems to date, administrations concerned with both GSO FSS and non-GSO FSS systems should be expected to exhibit flexibility in achieving the appropriate balance in the sharing environment;

*i)* that Resolution 750 (Rev.WRC-12) provides regulatory provisions to protect EESS (passive) band 50.2-50.4 GHz from FSS stations unwanted emissions and that No. 5.340 applies,

considering further

*a)* that WRC-03, having considered the outcome of preliminary ITU R studies on this subject under its agenda item 1.29, has decided that further studies are needed before the conditions for non-GSO FSS systems to share these bands with GSO FSS networks can reliably be determined;

*b)* that Recommendations ITU-R S.1323, S.1325, S.1328, S.1529, S.1557 provide some basis for deriving system characteristics, operational requirements, and protection criteria;

*c)* that the regulatory provisions contained in WRC Resolution 750 (Rev.WRC-12) are based on hypothesis concerning FSS deployment that may need further review taking into account possible new development of non-GSO satellites,

resolves to invite ITU-R

1 to conduct and complete, in time for WRC-19, the necessary studies to support a possible new primary allocation to the FSS (Earth-to-space) in the frequency band 51.4-52.4 GHz by taking into account No. 5.556;

2 to conduct and complete, in time for WRC-19, the necessary studies on the transitional measures towards a possible suppression of the FSS allocation in the frequency band 42.5-43.5 GHz;

3 to study and develop possible alternative technical and regulatory provisions for non-GSO FSS satellite systems that may operate in the frequency bands 37.5-42.5 GHz (space-to-Earth) and 47.2-50.2 GHz, 50.4-51.4 GHz and 51.4-52.4 GHz (Earth-to-space), or parts thereof, that would ensure adequate protection of GSO satellite networks in the FSS, MSS and BSS, without limiting or unduly constraining the future development of GSO networks across those bands;

4 in carrying out the studies in *resolves 3*, preferably to focus on the development of equivalent power flux density limits produced at any point in the GSO by emissions from all the earth stations of a non-GSO system in the fixed-satellite service or into any geostationary fixed-satellite service earth station, as appropriate;

5 to study and develop the appropriate regulatory provisions applicable to non-GSO systems to limit their use of the 47.2-48.9 GHz band to feeder-links only;

6 to study and develop conditions through which different non-GSO FSS systems can operate in the bands listed in 3 above;

7 to study and develop provisions to possibly revise Resolution 750 (Rev.WRC-12) so that systems operating in the passive bands above 52.6 GHz are continued to be protected, and that in carrying out the studies listed in the *resolves* above, it should be investigated whether the out-of-band limits on the FSS related to passive band 50.2-50.4 GHz in Resolution 750 (Rev.WRC-12) Table 1-1 are still appropriate taking into account updated information on GSO and non-GSO satellite systems;

8 that in carrying out the studies, the provisions included in Article 21 shall not be considered for modification,

further resolves to invite WRC-19

to consider the results of the above studies and take appropriate action,

invites administrations

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

Proposals on an Agenda item for WRC-19

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| Subject:  | Additional primary allocation to the fixed-satellite service (Earth-to-space) in the frequency band 51.4-52.4 GHz and regulatory framework and sharing conditions in bands within the range 37.5-52.4 GHz between geostationary fixed-satellite service networks and non-geostationary fixed-satellite service systems |
| Origin: | CEPT |
| Proposal:To develop an additional primary allocation to the fixed-satellite service (Earth-to-space) in the frequency band 51.4-52.4 GHz and to develop a regulatory framework and sharing conditions in bands within the range 37.5-52.4 GHz between geostationary fixed-satellite service networks and non-geostationary fixed-satellite service systems in accordance with Resolution [EUR-F10-5] (WRC-15). |
| Background/reason:Within the Q/V bands, the band 42.5-43.5 GHz is allocated to the fixed-satellite service (Earth-to-space) but it is not easy to use from a technical point of view since the contiguous band below 42.5 GHz is allocated to fixed-satellite service (space-to-Earth). As there is an interest for using the frequency band 51.4-52.4 GHz so as to support new generation of High Throughput Satellites (HTS) systems, such band could be used as an alternative to the 42.5-43.5 GHz band.A comprehensive regulatory environment has been developed in the past for FSS 4/6 GHz, 10/14 GHz and 17/30 GHz bands, and has enabled the coexistence of GSO and non-GSO FSS systems on an operational basis. In contrast, the regulatory regime dealing with the co-existence between GSO/non-GSO systems applying to bands within the range 37.5-51.4 GHz is mainly set by Article 22.2 of the Radio Regulations.While No. 22.2 is clear on the fact that current and future GSO operations in this frequency range shall be protected, it does not provide a clear guidance on how non-GSO systems should protect GSO networks, and may therefore refrain the full range of satellite technologies from being deployed.Given the continuing demand for ubiquitous wideband connectivity and the early stage of development of both GSO and non-GSO systems in bands within the range 37.5-51.4 GHz, administrations may wish to develop in time for WRC-19 a regulatory framework that would provide more regulatory certainty for non-GSO systems in the future, without limiting or unduly constraining the future development of GSO networks across those bands. |
| Radiocommunication services concerned:Earth Exploration Satellite service (passive), and the Space Research service (passive) in the band 50.2-50.4 GHz.Fixed-Satellite, Mobile-Satellite, Earth Exploration-Satellite, Space Research, Broadcasting-Satellite, Fixed, Mobile, Broadcasting, Radio Astronomy Service |
| Indication of possible difficulties:The band 51.4-52.4 GHz is currently allocated to the fixed and mobile services, which will need to be adequately protected, taking also into account that the fixed service in this band is available for high density applications as indicated in No. 5.547.Furthermore, as No. 5.556 indicates that radio astronomy observations are carried out in the same band, adequate mitigation measures may have to be defined.On top of the above, Resolution 750 (Rev.WRC-12) imposes out of band power limits to terrestrial services in order to protect the passive band above 52.6 GHz. Similar limits are likely to be needed to protect passive services above 52.6 GHz from FSS earth station unwanted emissions. Finally, it will be required to determine the technical, operational and regulatory provision for allowing non-GSO FSS systems to share the same spectrum resources, still without limiting or unduly constraining their future development, with GSO FSS networks and other services. |
| Previous/ongoing studies on the issue:Concerning compatibility issues between the fixed-satellite service and the Earth Exploration Satellite (passive) and Space Research (passive) services, studies conducted before WRC-07 have led to setting unwanted emissions limits produced by FSS earth stations in the band 50.4-50.9 GHz to protect the passive band 50.2-50.4 GHz. Regarding the 52.2-54.25 GHz band, similar provisions are likely to be used.Previous studies have been conducted in the framework of WRC-03 Agenda item 1.29 and associated Resolution 136 (WRC-00) (“Frequency sharing in the range 37.5-50.2 GHz between geostationary fixed-satellite service networks and non-geostationary fixed-satellite service systems”).The conclusion was a new version of Resolution 136 (WRC-00) (which became “rev-WRC-03”) calling for further technical, operational and regulatory studies on sharing arrangements to be conducted in time for WRC-10 (subsequently rescheduled in 2012).In 2007, when the agenda for WRC-12 was decided, the status of development of satellite systems planned in the 37.5-50.2 GHz range was not considered sufficiently mature to enable studies. It was then decided to suppress Resolution 136 (WRC-00) , pending later demand from the satellite sector on the matter. The CEPT notes that such a demand has now materialized, hence this proposal. |
| Studies to be carried out by:WP4A | with the participation of:Administrations and Sector members of the ITU-R. Inputs from space sector (on GSO/non-GSO systems) and from terrestrial services are expected to determine appropriate sharing conditions |
| ITU‑R Study Groups concerned:SG4 (WP4C), SG5 (5A, 5C), SG 7 (WP7B, 7C, 7D) |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/8

DRAFT NEW RESOLUTION [EUR-G10-6] (WRC-15)

 Establishment of power limits within MSS, METSAT or EESS Earth-to-space in the 401-403 MHz and 399.9-400.05 MHz frequency bands

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that the EESS and METSAT(Earth-to-space) systems deployed in the frequency band 401-403 MHz, and MSS (Earth-to-space) systems in the frequency band 399.9-400.05 MHz are currently used by Data Collection Platforms operated by space and meteorological agencies;

*b)* that these systems traditionally use moderate/low power levels;

*c)* that ITU-R developed ITU-R Recommendations indicating the usage of these bands and also introducing interference thresholds;

*d)* that most of these systems are essential for climate change, monitoring ocean, weather and water resources, protecting biodiversity, improving maritime security;

*e)* that a growing number of satellite operators are planning to use these frequency bands mainly for telecommand (Earth-to-Space) purposes under the Earth Exploration Satellite Services (EESS), Meteorological Satellite Service (METSAT) or Mobile Satellite Service (MSS) allocations and that the corresponding satellite networks are usually related to small satellites,

considering further

*a)* that the output power levels of the satellite networks, referred to in considering e), at the antenna port of these telecommand links (Earth-to-space) can be much higher than the moderate/low power levels traditionally used for EESS, METSAT or MSS, referred to in *considering a)*, service links in the frequency bands 401-403 MHz and 399.9-400.05 MHz;

*b)* that, according to ITU-R Recommendations, the usage of the frequency bands 401-403 MHz and 399.9-400.05 MHz does not encompass satellite telecommand operations;

*c)* that consequently, the operation of these telecommand links would cause harmful interference to the satellite receivers on-board the EESS, METSAT and MSS satellites referred to in *considering a)*,

recognizing

*a)* that it is necessary for EESS, METSAT and MSS satellite operators, referred to in considering a), to have stable regulatory certainty in order to be able to provide long-term continuity for this service of public interest;

*b)* that these space programmes have been representing a long term effort and investment for decades between the time when the programme is officially decided, the development, the launch phase and the time when the corresponding satellites are in operation;

*c)* that it is necessary to ensure the operations of existing and future systems that usually implement low or moderate output power levels for EESS, METSAT and MSS systems referred to in *considering a)*;

*d)* that the implementation of power limits of Earth stations within the Radio Regulations applicable to the EESS, METSAT and MSS allocations will bring confidence for space and meteorological agencies using these bands;

*e)* that Article 21 provides power limits for Earth stations above 1 GHz,

invites ITU-R

to conduct and complete, in time for WRC-19, the necessary studies on the feasibility of achieving the protection of satellites services through the establishment of mandatory power limits in the EESS and METSAT frequency band 401-403 MHz and in the MSS frequency band 399.9-400.05 MHz,

resolves to invite WRC-19

to take into account the results of ITU-R studies, and consider the implementation of mandatory power limits in the EESS and METSAT frequency band 401-403 MHz and in the MSS frequency band 399.9-400.05 MHz.

Proposals on an Agenda item for WRC-19

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| Subject:  | To establish power limits within MSS, METSAT or EESS in the 401-403 MHz and 399.9-400.05 MHz frequency bands. |
| Origin: | CEPT |
| Proposal:to consider establishment of mandatory power limits within MSS, METSAT or EESS in the 401-403 MHz and 399.9-400.05 MHz frequency bands, in accordance with Resolution [EUR-G10-6] (WRC-15). |
| Background/reason:Recently, some satellite networks have been filed to the ITU using frequency bands within the current MSS, METSAT and EESS allocations, especially below 1 GHz, mainly for telecommand purposes.In these networks, the output powers at the antenna port of these telecommand links from the earth stations to the satellites can reach up to 50 W or more. The corresponding e.i.r.p values are up to 27 dBW or more and such a range is much higher than the moderate/low power levels traditionally used for service links in those bands, especially in the frequency bands dedicated to Data Collection using satellite, such as 401-403 MHz or 399.9-400.05 MHz. ITU-R developed ITU-R Recommendations indicating the usage of these bands and also introducing interference thresholds. Detailed calculations using these satellite parameters can show that these telecommand links could cause a total blindness - during significant amounts of time - of the existing receivers when interfered by telecommand links in the same frequency band. The objective of this future agenda item is to establish, within the Radio Regulation, power limits applicable in some satellite uplink frequency bands below 1 GHz and valid for any type of satellite in order to ensure the operation of existing and future systems that usually implement low or moderate output powers. The corresponding detailed studies can be undertaken under a future WRC-19 agenda item, and the corresponding power limits shall be applicable for any type of satellite in the following frequency bands: 399.9-400.05 MHz for MSS (Earth-to-Space), 401-403 MHz for EESS (Earth-to-Space). |
| Radiocommunication services concerned:Meteorological-satellite, Earth exploration-satellite, mobile satellite service |
| Indication of possible difficulties:Many space operators are using the satellite frequency bands below 1 GHz, including space and meteorological agencies, and determining the appropriate limits to protect the corresponding space operations will be crucial for the success of this agenda item. |
| Previous/ongoing studies on the issue:Previous coordination studies have been conducted between space/meteorological agencies and space operators to assess and mitigate radio interference. |
| Studies to be carried out by:WP7B | with the participation of:Administrations and Sector members of the ITU-R Inputs from space/meteorological agencies and from satellite operators |
| ITU‑R Study Groups concerned:SG7, SG4 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/9

DRAFT NEW RESOLUTION [EUR-H10-7] (WRC-15)

Upgrade of the secondary allocation to the Meteorological-satellite service (space-to-Earth) and the Earth Exploration satellite service (space-to-Earth) in the frequency band 460-470 MHz to a primary status

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that Data Collection Systems (DCS) are operated on geostationary and non-geostationary MetSat and EESS (Earth-to-space) systems in the frequency band 401-403 MHz;

*b)* that DCS systems are essential for climate change, monitoring ocean, weather and water resources, protecting biodiversity, improving maritime security;

*c)* that most of these DCS systems have implemented satellite downlinks (space-to-Earth) in the frequency band 460-470 MHz which bring significant improvements to the operation of satellite data collection systems, such as the transmission of information to optimize the usage of the terrestrial data collection platforms;

*d)* that the frequency band 460-470 MHz is currently allocated to Meteorological-satellite (space-to-Earth) on a secondary basis;

*e)* that according to No. 5.289, Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the frequency bands 460-470 MHz and
1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the table of frequency allocations,

considering further

*a)* that at least one administration has adopted national regulatory provisions providing a pfd limit of -152 dBW/m2/4 kHz for protecting the terrestrial services;

*b)* that in order to meet this limit, space agencies have designed and are implementing a spread spectrum solution, making the operation of at least one satellite Data Collection System downlink operating in the frequency band 460-470 MHz compliant with this regulation,

recognizing

*a)* that it is necessary for MetSat/EESS operators to have stable regulatory certainty in order to be able to provide long-term continuity for this service of public interest and that operating under a secondary allocation status is conflicting with this objective;

*b)* that these space programmes represent long term effort and investment that span across decades between the time when the programme is officially decided, the development, the launch phase, the time when the corresponding satellites are in operation;

*c)* that space and meteorological agencies are investing on the continuity these programmes providing subsequent satellites and payloads;

*d)* that an upgrade to a primary status of the allocation of frequency band 460-470 MHz to the Meteorological-satellite (space-to-Earth) and the Earth exploration-satellite service, alongside with appropriate measures to ensure adequate protection of existing primary allocated services in that band, will bring confidence for space agencies involved in Satellite Data Collection Programmes and the public sectors funding the development and operation of such systems;

*e)* that Metsat and EESS ground receivers will not claim protection from stations in the fixed and mobile services,

resolves to invite ITU-R

to conduct and complete, in time for WRC-19, the necessary studies on the feasibility of achieving the upgrade to a primary allocation in the band 460-470 MHz for the Meteorological-satellite service (space-to-Earth), and the Earth Exploration Satellite service (space-to-Earth), as contained in No. 5.289,

resolves to invite WRC-19

to consider results of ITU-R studies and take appropriate action.

Proposals on an Agenda item for WRC-19

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| Subject:  | Upgrade of the secondary allocation to the Meteorological-satellite service (space-to-Earth) and the Earth Exploration satellite service (Earth-to-space) in the frequency band 460-470 MHz to a primary status |
| Origin: | CEPT |
| Proposal:To consider an upgrade of the secondary allocation to the Meteorological-satellite (space-to-Earth) in the band 460-470 MHz and to the Earth exploration-satellite service (space-to-Earth), as contained in No. 5.289, to a primary status, while putting relevant constraints on this service in order to protect the existing primary (mobile, fixed) services in the band, in accordance with Resolution [EUR-H10-7] (WRC-15) |
| Background/reason:The frequency band 460-470 MHz is currently used by many low orbiting satellites for transmitting relevant information to Data Collection Platforms (DCP). Fixed and Mobile services are primary in his band, while the Earth exploration-satellite service (space-to-Earth) has a secondary allocation via a footnote (see No. 5.289). The proposal is to raise the Meteorological-satellite service (space-to-Earth) in the band 460-470 MHz and to the Earth exploration-satellite service (space-to-Earth), as contained in No. 5.289, to a primary status, while putting relevant constraints on this service in order to protect the existing primary (mobile, fixed) services (i.e. a pfd value). |
| Radiocommunication services concerned:Meteorological-satellite, Earth exploration-satellite, fixed, mobile service (services allocated in adjacent bands will also have to be considered) |
| Indication of possible difficulties:The band is widely used for terrestrial services and determining the appropriate pfd to protect their operations will be crucial for the success of this agenda item. It is to be noted that the Metsat and EESS ground receivers will not claim protection from stations in the fixed and mobile services. |
| Previous/ongoing studies on the issue:Previous studies have been conducted by space and meteorological agencies to assess and mitigate any radio interference caused to terrestrial systems. One administration has adopted national regulatory provisions providing a pfd limit of -152 dBW/m2/4 kHz. In order to meet this limit, space agencies have designed and are implementing a spread spectrum solution, making the operation of future Advanced Data Collection System downlinks in the band 460–470 MHz compliant with this regulation. |
| Studies to be carried out by:WP 7B | with the participation of:Administrations and Sector members of the ITU-R Inputs from space and meteorological agencies are especially expected to assess the feasibility of implementing satellites compliant with pfd values. |
| ITU‑R Study Groups concerned:SG5 (WP 5A and 5C) |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/10

DRAFT NEW RESOLUTION [EUR-I10-8] (WRC-15)

Studies on allocations to the space operation service in the range 137-174 and 230-470 MHz to accommodate the growing number of small non-GSO satellites

The World Radiocommunication Conference (Geneva, 2015),

recognizing

*a)* that the number of small satellites (in particular satellites whose mass is typically less than 100 kg) already launched and to be launched in non-GSO is growing;

*b)* that these types of satellites can provide an affordable means to access orbital resources (spectrum and orbit) for new entrants in space;

*c)* that, even though satellite mass and size are not relevant from a frequency management perspective, the small mass and small dimensions of these satellites have been some of the major contributors to their success amongst new space fairing nations;

*d)* that, irrespective of the application, these satellites all require means for providing telemetry, tracking and command;

*e)* that the space operation service is defined in the Radio Regulations as “A radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry and space telecommand”,

considering

*a)* that small satellites, including those referred to as nanosatellites and picosatellites, are being used for a wide variety of missions and applications, including remote sensing, space weather research, upper atmosphere research, astronomy, communications, technology demonstration and education, as well as commercial applications;

*b)* that, irrespective of the application, these satellites all require means for providing telemetry, tracking, and command;

*c)* that the growing number of these satellites increases demand for suitable allocations to the space operation service;

*d)* that it is important to ensure that any satellite radio frequency operation avoids harmful interference to other systems and services,

further considering

*a)* that successful and timely development and operation of small satellites may require changes to the table of frequency allocations to accommodate the growth mentioned in *recognizing a)*;

*b)* that in order to protect existing users, appropriate limits such as power flux density limits may need to be established;

*c)* that frequencies within the range of 137-174 and 230-470 MHz are preferred from a technical point of view;

*d)* that frequency bands allocated to the appropriate service should be used for payload data links,

resolves to invite WRC-19

to consider allocations to the space operation service in the space-to-Earth direction as well as the Earth-to-space direction, limited to non-GSO, in the range of 137-174 MHz and 230-470 MHz along with appropriate means to protect incumbent services taking into account the results of the studies in invites ITU-R,

invites ITU-R

1 to study the spectrum requirements and frequency bands to accommodate the growing number of small non-GSO satellites;

2 to study spectrum sharing techniques and methodologies suitable for small non-GSO satellites;

3 to conduct compatibility studies between the space operation service and incumbent services.

Proposals on an Agenda item for WRC-19

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| Subject:  | Studies on allocations to the space operation service in the range 137-174 and 230-470 MHz to accommodate the growing number of small non-GSO satellites |
| Origin: | CEPT |
| Proposal:to consider allocations to the space operation service in the space-to-Earth direction as well as the Earth-to-space direction, limited to non-GSO, in the range 137-174 MHz and 230–470 MHz to accommodate the growing number of small non-GSO satellites, in accordance with Resolution [EUR-I10-8] (WRC-15). |
| Background/reason:The number of small satellites in NGSO, in particular those referred to as nano-satellites and pico-satellites is experiencing exponential growth. As a result of this growth, there is a growing need to support telemetry, tracking & command (TT&C) operation for these satellites. The growing number of these satellites puts increasing pressure on existing allocations to the space operation service. A standardized TT&C system used within this allocation could potentially simplify the coordination/correspondence procedure. A standardized TT&C system used within this allocation based on spread spectrum technology may provide for ranging capabilities which may aid in orbit determination. |
| Radiocommunication services concerned:Space-operation service, space research service, meteorological satellite service, fixed and mobile service |
| Indication of possible difficulties:Determination of the appropriate sharing conditions between the space operation service and other services |
| Previous/ongoing studies on the issue:ITU-R SA.2312, ITU-R SA.2348 |
| Studies to be carried out by:SG7 | with the participation of:Administrations and Sector members of the ITU-R Space agencies, satellite developers, satellite operators |
| ITU‑R Study Groups concerned:SG4, SG5 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/11

DRAFT NEW RESOLUTION [EUR-J10-9] (WRC-15)

Use of the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz by earth stations on mobile platforms communicating with geostationary space stations in the fixed-satellite service

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that the bands 17.7-19.7 GHz and 27.5-29.5 GHz are globally allocated on a primary basis to the fixed-satellite service (FSS) and that there are a large number of geostationary FSS satellite networks operating in these frequency bands;

*b)* that there is an increasing need for mobile communications, including global broadband satellite services, and that some of this need can be met by allowing earth stations on mobile platforms (such as ships, aircraft and land vehicles) to communicate with space stations of the FSS operating in the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz;

*c)* that No. **5.526** allows operation on earth stations on mobile platforms with FSS networks in certain frequency bands;

*d)* that some administrations have already deployed, and plan to expand their use of such earth stations with operational and future geostationary FSS networks;

*e)* that geostationary FSS networks in the bands 17.7-19.7 GHz and 27.5-29.5 GHz are required to be coordinated in accordance with the provisions of Article **9** and **11** of the Radio Regulations, so as to address potential interference between networks and other services allocated in the band;

*f)* that the bands 17.7-19.7 GHz and 27.5-29.5 GHz are also allocated to several other services on a primary basis and used by a variety of different systems in many administrations;

*g)* that some regions have segmented the band 27.5-29.5 GHz between FSS and FS in order to answer the need of both services,

recognizing

*a)* that earth stations on mobile platforms addressed by this Resolution are not intended to be used for safety of life applications;

*b)* that WRC-15 addressed this matter in the bands 19.7-20.2 GHz and 29.5-30.0 GHz,

considering further

*a)* that some administrations have addressed this matter nationally or regionally by adopting technical and operational criteria for the operation of earth stations on mobile platforms;

*b)* that a consistent approach to deployment of these earth stations will support this important and growing global communication requirements;

*c)* that the ITU-R has adopted Reports ITU-R S.2223 and S.2357,

resolves to invite ITU-R

to study sharing between earth stations on mobile platforms operating with geostationary FSS networks and current and planned systems of primary allocated services in the bands 17.7-19.7 GHz and 27.5-29.5 GHz,

resolves to invite WRC-19

to consider the results of the above studies and take appropriate actions.

Proposals on an Agenda item for WRC-19

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| --- | --- |
| Subject:  | Use of the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz by earth stations on mobile platforms communicating with geostationary space stations in the fixed-satellite service |
| Origin: | CEPT |
| Proposal:to consider the use of the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz by earth stations on mobile platforms communicating with geostationary space stations in the fixed-satellite service, in accordance with Resolution [EUR-J10-9] (WRC-15). |
| Background/reason:Proposals are being made to WRC-15 under Agenda item 9.2 to clarify the use of No. 5.526. These proposals extend the application of No. 5.526 to the bands 29.5-30 GHz and 19.7-20.2 GHz in all three ITU Regions, remove the association to the MSS of earth stations operating under No. 5.526, and introduce technical requirements for such earth station to ensure compatible operation with other FSS networks in these bands. In Europe, the operation of earth stations on mobile platforms is possible also within the bands 17.7-19.7 GHz and 27.5-29.5 GHz, subject to compliance with sharing conditions with systems operating under primary terrestrial service allocations (see ECC Decision (13)01).It is proposed to carry out technical sharing studies between earth stations on mobile platforms operating in FSS networks and systems of other primary services in the bands 17.7-19.7 GHz and 27.5-29.5 GHz and to develop the appropriate technical and regulatory provisions to facilitate operation of such earth stations, while ensuring harmful interference is not caused to stations of the FSS, FS and other primary services. |
| Radiocommunication services concerned:Fixed-satellite, fixed, mobile, Earth exploration satellite and space research service (passive) |
| Indication of possible difficulties:none |
| Previous/ongoing studies on the issue:Studies on compatibility between earth stations on mobile platforms and other FSS applications has been carried out in the ITU-R and are reflected in Report S.2223 and Report S.2357. Studies on sharing with terrestrial systems were carried out on a regional basis in the CEPT. |
| Studies to be carried out by:WP4A | with the participation of:Administrations and Sector members of the ITU-R Satellite operators and operators of terrestrial systems |
| ITU‑R Study Groups concerned:SG5 (WP5A, WP5C) |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/12

DRAFT NEW RESOLUTION [EUR-K10-10] (WRC-15)

Consideration on revision of Annex 7 to RR Appendix 30

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that the World Administrative Radio Conference 1977 (WARC-77) developed a Plan for the broadcasting-satellite service (BSS) in the band 11.7-12.5 GHz (in Region 1) and 11.7 12.2 GHz (in Region 3) including:

*b)* the sharing criteria for the bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1) between the broadcasting satellite service and the other services to which these bands are allocated;

*c)* those procedures governing the use of these bands by broadcasting-satellite service and by the other services to which these bands are allocated;

*d)* that in order to preserve access to GSO by Region 2 FSS it was decided at WARC-77 to limit the use of orbital positions between 37.2°W and 10°E for new or modified BSS assignments in the 11.7-12.2 GHz;

*e)* that in order to protect Region 2 FSS assignments, a pfd limit for the new or modified BSS assignments over the territory of Region 2 was adopted by WARC-77 as a ”trigger” value for coordination with the affected Region 2 administrations;

*f)* that in accordance with WARC-77 Plan, sharing between the different services using the 12 GHz band should be based on the protection requirements for interfered with Region 2 FSS frequency assignments of C/I = 30 dB (Overall) and C/I = 35 dB (Single entry) from Region 1 BSS analogue frequency assignments,

noting

*a)* that the limitations in the use of orbital positions and their associated e.i.r.p. for Region 1 for new or modified BSS assignments in the 11.7-12.2 GHz band within orbital arc of the geostationary-satellite orbit (GSO) between 37.2°W and 10°E are set in Section A3 of Annex 7 of Appendix **30** of the Radio Regulations;

*b)* that ITU-R is studying pfd masks that could be used as coordination trigger instead of the provisions in Section A3 of Annex 7 of Appendix **30** of the Radio Regulations for new or proposed modified Region 1 BSS assignments,

recognizing

*a)* that the orbital positions limitations set in Section A of Annex 7 to Appendix **30** were based on the use of analogue BSS assignments;

*b)* that WRC-2000 developed new Plans for Regions 1 and 3 assuming digital BSS and feeder-link assignments;

*c)* that existing systems implemented under the current provisions of Annex 7 shall continue to be protected,

resolves to invite ITU-R

1 to study possible revisions to Annex 7 of Appendix **30**;

2 to study provisions to ensure protection of existing and planned BSS systems operating in the band 11.7-12.5 GHz,

resolves to invite WRC-19

to consider the results of the above studies and take appropriate actions regarding revision of Annex 7 to Appendix **30**.

Proposals on an Agenda item for WRC-19

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| Subject:  | Consideration on revision of Annex 7 to RR Appendix 30 |
| Origin: | CEPT |
| Proposal:to consider a revision of Annex 7 to Appendix 30 of the Radio Regulations in accordance with Resolution [EUR-K10-10] (WRC-15). |
| Background/reason:The orbital positions limitation uses for Region 1 BSS assignments for additional use of the lower part of the BSS band (11.7-12.2 GHz) in the Region 1 and 3 List from positions in the orbital arc from 37.2°W to 10°E were introduced in the Radio Regulations at the first BSS Planning conference (WARC-77), because of powerful BSS analogue Plan assignments and a few and comparatively weak Region 2 FSS digital emissions. The current sharing situation is completely different with all over use of digital technologies since WRC-2000. The balance between Region 2 FSS and Region 1 BSS networks has already changed. On-going ITU R studies reported that the provisions for Region 1 BSS in Annex 7 to Appendix 30 may no be longer required. They could be replaced with other triggering factors like PFD mask already in use as coordination trigger for Region 1 BSS networks. |
| Radiocommunication services concerned:Broadcasting Satellite Service (in Region 1 and 3) , Fixed Satellite Service (Region 2) |
| Indication of possible difficulties:Measures to protect the existing Region 1 BSS assignments in the Region 1 and 3 List for additional uses notified under the current provisions in Section A3 of Annex 7 to RR Appendix 30 require additional studies. |
| Previous/ongoing studies on the issue:On-going studies within ITU-R WP 4A and considerations within Special Committee for Regulatory Matters. |
| Studies to be carried out by:SG4 | with the participation of:Administrations and Sector members of the ITU-R |
| ITU‑R Study Groups concerned:SG4 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| Remarksnone |

ADD EUR/9A25/13

DRAFT NEW RESOLUTION [EUR-L10-11] (WRC-15)

Regulatory provisions for the operational use of the Global Aeronautical Distress and Safety System

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that several aeronautical catastrophies spurred worldwide discussions on global flight tracking and the need for coordinated action by the ITU, the International Civil Aviation Organization (ICAO) and other relevant organization(s), within the scope of their respective mandates;

*b)* that ICAO is developing a concept of operations document for the Global Aeronautical Distress & Safety System (GADSS);

*c)* that GADSS is intended to be a globally integrated system which addresses the timely identification and location of an aircraft during all phases of flight as well as distress and emergency situations;

*d)* that GADSS is intended to support search and rescue operations and the retrieval of the flight data recorders;

*e)* that GADSS will require the support of a number of aeronautical communication and radionavigation and surveillance systems;

*f)* that the introduction of GADSS needs to ensure the protection of and impose no additional constraints on all incumbent operating systems and applications;

*g)* that ICAO, in its contribution to WRC-15, has requested a future agenda item to address the needs of the GADSS;

*h)* the Report of Director of the Radiocommunication Bureau on Global Flight Tracking to WRC-15,

recognizing

*a)* that the ITU has already indicated its willingness to assist in the development of measures that will expedite the location and rescue of an aircraft in distress through making the necessary changes to the Radio Regulations;

*b)* that Annex 10 to the Convention on International Civil Aviation contains Standards and Recommended Practices (SARPs) for aeronautical radionavigation and radiocommunication systems used by international civil aviation;

*c)* that studies relating to global flight tracking or parts thereof, are ongoing in the ITU Radiocommunication Sector (ITU-R);

*d)* that the ITU and ICAO signed a memorandum of understanding in 2012 to establish a framework for enhanced cooperation between the two parties,

noting

*a)* that the GADSS is yet to be fully defined, as it will be realised in an evolutionary manner, and as such, it is anticipated that there will be a future need to amend the Radio Regulations in order to facilitate the introduction of systems used by GADSS;

*b)* that the concept of operations for GADSS does not prescribe specific technical solutions for flight tracking, but instead provides scenarios that can be used to verify whether a specific solution complies with the concept based on performance criteria,

invites ITU-R

1 to conduct, in time for WRC-19, the necessary studies in order to facilitate the introduction of GADSS;

2 to identify, in time for WRC-19, any components of GADSS requiring ongoing studies in the ITU Radiocommunication sector,

resolves to invite WRC-19

to consider result of studies and take appropriate action,

invites ICAO

to participate in the studies,

instructs the Secretary-General

to bring this Resolution to the attention of ICAO.

Proposals on an Agenda item for WRC-19

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| Subject:  | Regulatory provisions for the operational use of the Global Aeronautical Distress and Safety System |
| Origin: | CEPT |
| Proposal:to consider regulatory actions for the development and implementation of the Global Aeronautical Distress and Safety System (GADSS) in accordance with Resolution [EUR-L10-11] (WRC-15). |
| Background/reason:Several aeronautical catastrophies spurred worldwide discussions and the need for a globally integrated system which addresses the timely identification and location of an aircraft during all phases of flight as well as distress and emergency situations appears. Furthermore this globally integrated system will also support search and rescue operations and the retrieval of the flight data recorders. ICAO is developing a concept of operations document for the Global Aeronautical Distress & Safety System (GADSS) and requested a future agenda item to address the needs for the GADSS. |
| Radiocommunication services concerned:Aeronautical RadioNavigation Service, Aeronautical Mobile (R) Service, Aeronautical Mobile Satellite (R) Service, Aeronautical Mobile Service and Aeronautical Mobile Satellite Service |
| Indication of possible difficulties:none |
| Previous/ongoing studies on the issue:none |
| Studies to be carried out by:ITU-R SG5 | with the participation of:Administrations and Sector members of the ITU-R and ICAO |
| ITU‑R Study Groups concerned:SG 5 (WP 5A, 5B and 5C), SG4 |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes | Multicountry proposal: Number of countries: | No |
| RemarksIt has to be noted that:- the work in preparation to WRC-19 related to GADSS may also depend on the decisions taken by WRC-15 in answer to the 2014 Plenipotentiary Conference Resolution 185 (Busan, 2014);- all of the required changes to the Radio Regulations to facilitate the GADSS, may not be identified in one WRC period. |

ADD EUR/9A25/14

DRAFT NEW RESOLUTION [EUR-M10-12] (WRC-15)

Studies on maritime radio devices operating in the frequency band 154-174 MHz without a regulatory connection to vessels or coast stations to ensure safety of navigation and to protect the integrity of the GMDSS

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that several maritime radio devices with different purposes of usage are on the market, which operate without a regulatory connection to vessels or coast stations;

*b)* that examples are, but not limited to, “man overboard” (MOB) devices, diver devices, fishnet locating devices, iceberg tracking devices, oil spill tracking devices and oceanographic buoy locating devices;

*c)* that such devices are operating with AIS technology or DSC technology or transmitting synthetic voice messages or with a combination of those technologies,

recognizing

*a)* that these applications are not or only partly fulfilling the relevant rules of Radio Regulations and ITU-R Recommendations;

*b)* the Maritime Mobile Service is a safety service in world-wide usage;

*c)* that the unregulated usage of frequencies of Radio Regulations Appendix 18 and numbering (Recommendation ITU-R M.585) by such devices creates confusion and caused already interference within the Maritime Mobile Service;

*d)* that there is a need for harmonization measures supporting the operation of maritime personal radio-location beacons in the maritime VHF band;

*e)* that the unregulated operation of these devices jeopardizes safety of navigation and the integrity of the GMDSS,

invites ITU-R

1 to conduct the necessary studies to categorize the various autonomic maritime radio devices;

2 to conduct the necessary studies, based on the results of *invites ITU-R* 1, to determine the needed regulatory provisions to support autonomic maritime radio devices operating without association to vessels or coast stations;

3 to conduct sharing and compatibility studies, based on the results of *invites ITU-R* 1 and *ITU-R* 2, in order to determine appropriate frequency bands and regulatory actions;

4 to conduct studies, based on the results of *invites ITU-R* 1 to *ITU-R* 3, considering existing maritime technology, to identify spectrum for autonomic maritime radio devices in the frequency band 154-174 MHz,

resolves to invite WRC-19

based on the results of ITU-R studies, considers appropriate regulatory actions, including spectrum allocations, to support securing and enhancement of safety of navigation by maritime radio devices operating without association to vessels or coast stations,

further invites

the International Maritime Organization (IMO), the World Meteorological Organization (WMO), the International Hydrographic Organization (IHO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC) and the International Radio Maritime Committee (CIRM) to contribute to these studies,

instructs the Secretary-General

to bring this Resolution to the attention of IMO, WMO, IHO, IEC, IALA, CIRM and other international and regional organizations concerned.

Proposals on an Agenda item for WRC-19

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| Subject:  | Studies on maritime radio devices operating in the frequency band 154-174 MHz without a regulatory connection to vessels or coast stations to ensure safety of navigation and to protect the integrity of the GMDSS |
| Origin: | CEPT |
| Proposal:to consider regulatory provisions and identification of spectrum, if necessary, for maritime radio devices operating without association to vessels or coast stations to ensure safety of navigation and to protect the integrity of the GMDSS. |
| Background/reason:Several new radio systems on the market are to be used in a maritime environment. These systems are in most cases using frequencies subject to Appendix 18. Since such devises are not linked to a coast station or a vessel, new provisions are required to regulate the new devices and applications. |
| Radiocommunication services concerned:Fixed and mobile services around 160 MHz |
| Indication of possible difficulties:The frequency bands adjacent to the frequency bands subject to Appendix 18 are used for fixed service and land mobile service applications. |
| Previous/ongoing studies on the issue:none |
| Studies to be carried out by:Administrations and ITU-R Sector Members | with the participation of:IMO |
| ITU‑R Study Groups concerned:SG 5 (WP 5A, 5B and 5C)) |
| ITU resource implications, including financial implications (refer to CV126):This proposed agenda item will be studied within the normal ITU-R procedures and planned budget |
| Common regional proposal: | Yes/~~No~~ | Multicountry proposal: Number of countries: | Yes/No |
| Remarksnone |

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1. The use of the term “IMT-2020” is a placeholder terminology and the specific nomenclature to be adopted for the future development of IMT is expected to be finalized at the Radiocommunication Assembly 2015. [↑](#footnote-ref-1)