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| **Radiocommunication Study Groups** |  |
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| **6 July 2020** |
| **English only** |
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| Categorization of the W(A)RC Resolutions in force | |
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At its 27th meeting from 25 to 27 May 2020, the Radiocommunication Advisory Group (RAG) (see the Summary of Conclusions in [BR Administrative Circular CA/252](https://www.itu.int/md/R00-CA-CIR-0252/en) of 1 June 2020) considered a proposal to categorize new and revised Resolutions adopted by previous WRCs. The RAG invited the Bureau to produce such documentation and make it available on the RAG and Study Groups web pages.

The following categories have been established:

**Category 1 (associated with items on the WRC-23 agenda or WRC-27 preliminary agenda)**

Resolutions which are directly and exclusively associated with a WRC-23 agenda item or a WRC-27 preliminary agenda item.

**Category 2 (not included in Category 1 but calling for ITU-R Studies)**

Resolutions which are not of Category 1, but which refer to ITU-R for study as results of deliberation at WRC(s).

**Category 3 (addressed to BR)**

Resolutions which, among other destines, are also addressed to the Radiocommunication Bureau (BR) for implementation (or application of relevant RR provisions) and reporting the results of that implementation to the next WRC.

**Category 4 (collaboration/cooperation with other ITU Sector(s) or other International Organizations)**

Resolutions which call for collaboration/cooperation of other ITU Sector(s) or other international organizations on certain activities referred to in those Resolutions.

**Category 5 (inviting PP, WRC, Council or the RRB to take necessary actions, as appropriate)**

Resolutions which, among other actions, invites future Plenipotentiary Conference(s), WRC(s) or ITU Council, or the RRB to take necessary actions, as appropriate.

**Category 6 (other Resolutions not identified within Categories 1 to 5)**

Resolution which do not fit in any of the above-mentioned 5 categories but could present some implementation aspects.

The table below lists all the World (Administrative) Radio(communication) Conference (W(A)RC) Resolutions in force after WRC-19. The elements of each Resolution relating to the ITU Radiocommunication Sector (ITU-R) are contained in the column titled “*resolves / invites / instructs*”. Links to the relevant ITU-R Study Group (SG) documents describing the assignment of the Resolution to sub-groups of the SG (i.e. Document 1 of each SG) is provided where applicable and when available.

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| Table legend | |
|  | Cells in this colour indicate that the W(A)RC Resolution contains studies by ITU-R, but is not included in any SG Document 1. |
|  | Cells in this colour indicate that the W(A)RC Resolution contains studies by ITU-R and is included in a Document 1 of one or more SG(s). |

| Resolution | Title | *resolves / invites / instructs* | WP | Category/(ies) |
| --- | --- | --- | --- | --- |
| **1 (Rev.WRC-97)** | Notification of frequency assignments | *resolves*  that, unless specifically stipulated otherwise by special arrangements communicated to the Union by administrations, any notification of a frequency assignment to a station shall be made by the administration of the country on whose territory the station is located. | − | 3 |
| **2 (Rev.WRC-03)** | Equitable use, by all countries, with equal rights, of the geostationary-satellite and other satellite orbits and of frequency bands for space radiocommunication services | *resolves*  1 that the registration with the Radiocommunication Bureau of frequency assignments for space radiocommunication services and their use do not provide any permanent priority for any individual country or groups of countries and do not create an obstacle to the establishment of space systems by other countries;  2 that, accordingly, a country or a group of countries having registered with the Bureau frequencies for their space radiocommunication services need to take all practicable measures to facilitate the use of new space systems by other countries or groups of countries, in particular those of developing countries and least developed countries, so desiring;  3 that *resolves* 1 and 2 of this Resolution shall be taken into account by the administrations and the Bureau. | − | 3 |
| **4 (Rev.WRC-03)** | Period of validity of frequency assignments to space stations using the geostationary-satellite and other satellite orbits | *resolves*  1 that, until this Resolution is reviewed by the next competent world radiocommunication conference, frequency assignments to space radiocommunication stations located on the geostationary-satellite and other satellite orbits, noting *considering e*) and *f)*, shall not be considered perpetual and shall be dealt with as follows:  1.1 a frequency assignment to a space station2 shall be deemed definitively discontinued after the expiry of the period of operation shown on the assignment notice, reckoned from the date on which the assignment was brought into service. This period shall be limited to that for which the satellite network was designed. The Bureau shall then invite the notifying administration to take steps to cancel the assignment. If the Bureau receives no reply within three months following the expiry of the period of operation, it shall insert a symbol in the Remarks Column of the Master Register to indicate that the assignment is not in conformity with this Resolution;  1.2 if a notifying administration which wishes to extend the period of operation originally shown on the assignment notice of a frequency assignment of an existing space station2 informs the Bureau accordingly more than three years before the expiry of the period in question and if all other basic characteristics of that assignment remain unchanged, the Bureau shall amend as requested the period of operation originally recorded in the Master Register and publish that information in a special section of the Bureau’s International Frequency Information Circular (BR IFIC);  1.3 if, at least three years before the expiry of the period of operation recorded in the Master Register of a frequency assignment to an existing space station2, an administration initiates the coordination procedure specified in No. **9.7** to bring into service a new space station using the same assigned frequency and the same orbital position but with different technical characteristics, and if the Bureau finds after the notification that the new assignment conforms with the provisions of No. **11.31** and does not increase, in relation to the preceding assignment, the probability of interference to the detriment of a frequency assignment recorded in the Master Register or involved in the coordination procedure, the new assignment shall be given a favourable finding and shall be entered in the Master Register;  1.4 a notifying administration which wishes to modify a basic characteristic of a frequency assignment of a space station2 recorded in the Master Register shall initiate, in any case other than those covered by *resolves* 1.2 and 1.3, the appropriate modification procedure in accordance with the provisions of Nos. **11.43A** to **11.46**;  2 that, for the application of the provisions of *resolves* 1.1 above, the information concerning the period of validity of frequency assignments to space stations shall be notified in addition to that contained in Appendix **4**;  3 that the application of this Resolution shall not prejudge in any way the decisions of future radiocommunication conferences,  *invites ITU R*  to undertake studies with respect to the implementation of this Resolution,  *invites the next competent world radiocommunication conference*  to take cognizance of the results of ITU‑R studies undertaken as a result of this Resolution and take action, as appropriate,  *instructs the Secretary-General*  to bring this Resolution to the attention of the Council.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  2 The expression “space station” may apply to more than one satellite provided that only one satellite is in operation at any particular moment and that the stations installed on board successive satellites have identical basic characteristics. | − | 2  AND  3  AND  5 |
| **5 (Rev.WRC-15)** | Technical cooperation with the developing countries in the study of propagation in tropical and similar areas | *resolves to instruct the Secretary-General*  1 to offer the assistance of the Union to developing countries in the tropical areas which endeavour to carry out national propagation studies in order to improve and develop their radiocommunications;  2 to assist these countries, if necessary with the collaboration of international and regional organizations such as the Asia-Pacific Broadcasting Union (ABU), Arab States Broadcasting Union (ASBU), African Telecommunication Union (ATU) and the Union of National Radio and Television Organizations of Africa (URTNA)\* which may be concerned, in carrying out national propagation measurement programmes, including collecting appropriate meteorological data, on the basis of ITU-R Recommendations and Questions in order to improve the use of the radio-frequency spectrum;  3 to arrange funds and resources for this purpose from the UNDP or other sources in order to enable the Union to provide the countries concerned with adequate and effective technical assistance for the purpose of this Resolution,  *resolves to instruct the Director of the Radiocommunication Bureau*  to include this activity in the operational plan, within existing budgetary resources of the Sector,  *invites administrations*  to submit the results of these propagation measurements to ITU-R for consideration in its studies,  *invites the Council*  to follow the progress made in carrying out programmes of propagation measurements and the results achieved, and to take any action that it considers necessary. | − | 2  AND  3  AND  5 |
| **7 (Rev.WRC-19)** | Development of national radio‑frequency management | *resolves*  1 that meetings shall be organized between representatives of the Radiocommunication Bureau and the personnel involved in frequency management matters from administrations of developing and developed countries;  2 that such meetings shall be aimed at designing standard structures suitable for administrations of developing countries and include discussions concerning the establishment and operation of radio-frequency management units;  3 that such meetings should also identify the particular needs of developing countries in establishing such units, and the means required to meet those needs,  *recommends*  that developing countries, when planning the use of funds, particularly those received from international sources, make provision for participation in these meetings as well as taking appropriate action for the introduction and development of such units,  *invites the ITU Council*  to take the necessary measures for the organization of such meetings,  *instructs the Secretary-General*  1 to circulate this Resolution to all Member States, drawing their attention to its importance;  2 to circulate the results of such meetings, particularly to the developing countries;  3 to inform the developing countries of the types of assistance ITU can provide in setting up the desired structure,  *instructs the Director of the Radiocommunication Bureau*  to include this activity in the Operational Plan, within existing budgetary resources of the Sector,  *draws the attention of the next plenipotentiary conference*  1 to the particular problems identified in this Resolution;  2 to the need for prompt and effective action to resolve them;  3 to the need to take all practicable measures to ensure that resources are made available for this purpose. | − | 3  AND  5 |
| **10 (Rev.WRC-2000)** | Use of two-way wireless telecommunications by the International Red Cross and Red Crescent Movement | *resolves to urge administrations*  1 to take account of the possible needs of the International Red Cross and Red Crescent Movement for two-way wireless telecommunication means when normal communication facilities are interrupted or not available;  2 to assign to these organizations the minimum number of necessary working frequencies in accordance with the Radio Regulations;  3 to take all practicable steps to protect such communications from harmful interference. | - | 4  AND  6 |
| **12 (Rev.WRC-19)** | Assistance and support to Palestine | *resolves*  1 to continue to provide assistance to Palestine, through the ITU Radiocommunication Sector and in collaboration with the ITU Telecommunication Development Sector, pursuant to the relevant ITU resolutions and decisions, in particular in the areas of capacity building, spectrum management and frequency assignment, with a view to enabling Palestine to manage and exploit its radio spectrum;  2 to enable Palestine to continue implementing 3G technology in Gaza through support and technical assistance, consistent with the bilateral agreement signed on 19 November 2015;  3 to enable Palestine to modernize its telecommunication networks, including building and operating 4G and 5G networks, through support and technical assistance,  *urges concerned parties*  to facilitate the import and deployment of equipment and, in the next JTC meeting (expected either December 2019 or January 2020), to start establishing a clear and reasonable time-frame for allocation of adequate frequencies of 4G and 5G for the Palestinian operators,  *instructs the Director of the Radiocommunication Bureau*  1 to take appropriate measures within the mandate of the Radiocommunication Bureau in order to assist in the implementation of this Resolution;  2 to report to the next World Radiocommunication Conference on progress achieved in the implementation of this Resolution,  *instructs the Secretary-General*  to ensure that this Resolution is implemented*.* | − | 3  AND  4 |
| **13 (Rev.WRC-97)** | Formation of call signs and allocation of new international series | *resolves*  1 that the Director of the Radiocommunication Bureau shall continue to urge administrations:  1.1 to make maximum use of the possibilities of the series at present allocated, in order to avoid, as far as possible, further requests;  1.2 to review the call-sign assignments they have already made from their present allocations, with a view to releasing any series and placing them at the disposal of the Union;  2 that the Director of the Radiocommunication Bureau shall, upon request, furnish advice to administrations on the means of effecting the greatest economy, which should be the rule, in the use of a series of call signs;  3 that if, nevertheless, before the next competent world radiocommunication conference, it appears that all the possibilities of the present system of forming call signs will be exhausted, the Director of the Radiocommunication Bureau shall:  3.1 explore the possibility of extending the present allocations of international call-sign series by lifting the limitation on use of the letter “Q” and the digits “0” and “1”;  3.2 issue a circular-letter:  3.2.1 explaining the position;  3.2.2 urging administrations to send in their proposals for possible solutions;  4 that, from the information thus submitted, the Director of the Radiocommunication Bureau shall prepare a report, together with his comments and suggestions, for submission to the next competent world radiocommunication conference. | − | 3 |
| **15 (Rev.WRC-03)** | International cooperation and technical assistance in the field of space radiocommunications | *resolves to instruct the Director of the Radiocommunication Bureau*  to include this activity in the Operational Plan, within existing budgetary resources of the Sector,  *invites the Council*  1 to draw the attention of administrations to the means by which they may avail themselves of technical assistance in connection with the introduction of space communications;  2 to consider the most effective manner in which requests for such assistance by Member States may be formulated and presented in order to secure maximum financial and other assistance, including the allocation of the funds in the regular budget of ITU for implementing this Resolution, preferably within the budget of the Sector identified for the implementation of this Resolution;  3 to consider how best to make use of funds made available by the United Nations in accordance with its Resolution 1721 to give technical and other assistance to administrations of Member States to make effective use of space communications;  4 to consider in what way the work of the ITU-T, ITU-R and ITU-D and other organs of the Union may be utilized in the most effective way for the information and assistance of administrations of Member States in the development of space radiocommunications. | − | 3  AND  4  AND  5 |
| **18 (Rev.WRC‑15)** | Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict | *requests the Secretary-General*  to communicate the contents of this Resolution to the International Maritime Organization, the International Civil Aviation Organization, the International Committee of the Red Cross, and the International Federation of Red Cross and Red Crescent Societies for such action as they may consider appropriate. | − | 4 |
| **20 (Rev.WRC-03)** | Technical cooperation with developing countries in the field of aeronautical telecommunications | *resolves to instruct the Secretary-General*  1 to encourage ICAO to continue its assistance to developing countries which are endeavouring to improve their aeronautical telecommunications, in particular by providing them with technical advice for the planning, establishment, operation and maintenance of equipment, as well as help with the training of staff, essentially in matters relating to the new technologies;  2 for this purpose, to seek the continued collaboration of ICAO, the United Nations Conference for Trade and Development (UNCTAD) and other specialized agencies of the United Nations, as appropriate;  3 to continue to give special attention to seeking the aid of the United Nations Development Programme (UNDP) and other sources of financial support, to enable the Union to render sufficient and effective technical assistance in the field of aeronautical telecommunications,  *invites the developing countries*  so far as possible, to give a high level of priority to and include in their national programmes of requests for technical assistance projects relating to aeronautical telecommunications and to support multinational projects in that field. | - | 4 |
| **22 (WRC-19)** | Measures to limit unauthorized uplink transmissions from earth stations | *instructs the Director of the Radiocommunication Bureau*  1 upon receipt of information from an administration detecting an unauthorized uplink transmission from its territory, to immediately inform Member States and satellite operating agencies of the matter by appropriate means and work with the administrations involved to resolve the matter;  2 to inform the administrations on the type of assistance ITU can provide on this issue,  *instructs the Secretary-General*  to stress the importance and ensure the circulation of this Resolution to all Member States. | − | 3 |
| **25 (Rev.WRC-03)** | Operation of global satellite systems for personal communications | *resolves*  that administrations licensing global satellite systems and stations intended to provide public personal communications by means of fixed, mobile or transportable terminals shall ensure, when licensing these systems and stations, that they can be operated only from the territory or territories of administrations having authorized such service and stations in compliance with Articles **17** and **18**, in particular No. **18.1**,  *requests administrations*  1 to continue cooperating with worldwide satellite system operators in improving the established arrangements for the provision of service within their territories and with the Secretary-General in implementing the GMPCS-MoU and its Arrangements;  2 to participate actively in ITU-R studies in developing and improving relevant Recommendations, | − | 6 |
| **26 (Rev.WRC-19)** | Footnotes to the Table of Frequency Allocations in Article 5 of the Radio Regulations | [[See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en)](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **27 (Rev.WRC-19)** | Use of incorporation by reference in the Radio Regulations | [[See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en)](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **32 (WRC-19)** | Regulatory procedures for frequency assignments to non-geostationary-satellite  networks or systems identified as short-duration mission not subject to the application of Section II of Article 9 | *instructs the Director of the Radiocommunication Bureau*  1 to expedite the online publication of notices “as received” for such networks or systems, in addition to the normal publication of notices;  2 to provide the necessary assistance to administrations in the implementation of this Resolution;  3 to report to WRC-23 on the implementation of this Resolution, | - | 3 |
| **34 (Rev.WRC-19)** | Establishment of the broadcasting-satellite service in Region 3 in the frequency band 12.5‑12.75 GHz and sharing with space and terrestrial services in Regions 1, 2 and 3 | resolves  1 that, until such time as a plan may be established for the BSS in the frequency band 12.5-12.75 GHz in Region 3, the relevant provisions of Article **9** shall continue to apply to coordination between stations in the BSS in Region 3 and:  *a)* space stations in the BSS and the fixed-satellite service (FSS) in Regions 1, 2 and 3;  *b)* terrestrial stations in Regions 1, 2 and 3;  2that the ITU-R shall study urgently the technical provisions which may be appropriate for the sharing between stations in the broadcasting-satellite service in Region 3 and:  *a)* space stations in the broadcasting-satellite and fixed-satellite services in Regions 1 and 2;  *b)* terrestrial stations in Regions 1 and 2;  3 that, until such time as technical provisions are developed by ITU-R and accepted by administrations concerned under Resolution **703 (Rev.WRC-07)**, sharing between space stations in the BSS in Region 3 and terrestrial services in Regions 1, 2 and 3 shall be based on the following criteria, as appropriate:  *a)* the power flux-density at the Earth’s surface produced by emissions from a space station in the BSS in Region 3 for all conditions and for all methods of modulation shall not exceed the limits given in Annex 5 of Appendix **30**;  *b)* in addition to resolves 3 a) above, the provisions of Article **21 (Table 21-4)** shall apply in the countries mentioned in Nos. **5.494** and **5.496**;  *c)* the limits given in *resolves* 3 *a)* and *b)* above may be exceeded on the territory of any country provided the administration of that country has so agreed. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3 |
| **35 (WRC-19)** | A milestone-based approach for the implementation of frequency assignments to space stations in a non-geostationary-satellite system in specific frequency bands and services | *resolves*  …  *instructs the Radiocommunication Bureau*  1to take the necessary actions to implement this Resolution;  2to report any difficulties it encounters in the implementation of this Resolution to WRC-23;  3to continue to identify and report on specific frequency bands in specific services for which there may be a problem similar to that which resulted in the creation of this Resolution, as early as possible, but not later than the penultimate meeting of the responsible group prior to the second session of the Conference Preparatory Meeting,  *instructs the Radio Regulations Board*  to provide a report to WRC-23 as called for in *resolves* 12*b),*  *invites the 2023 World Radiocommunication Conference*  to consider the RRB report submitted in response to *resolves* 12*b)* and take necessary action, as appropriate. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  5 |
| **40 (Rev.WRC-19)** | Use of one space station to bring frequency assignments to geostationary-satellite networks at different orbital locations into use within a short period of time | *resolves*  1that, when informing the Bureau of the bringing into use, or bringing back into use after suspension, of a frequency assignment to a space station in a geostationary-satellite network, the notifying administration shall indicate to the Bureau whether or not this action has been accomplished with a space station that has previously been used to bring into use, or resume the use of, frequency assignments at a different orbital location within the three years prior to the date of submission of this information;  2that, that, in cases where a notifying administration informs the Bureau, pursuant to *resolves* 1 above, that it has brought into use, or resumed the use after suspension of, a frequency assignment to a space station in a geostationary-satellite network with a space station that has previously been used to bring into use, or resume the use of, frequency assignments at a different orbital location within three years prior to the date of submission of this information, the notifying administration shall also indicate, for that same three-year period;  i)the last orbital location where the space station was used to bring into use, or resume the use of, frequency assignments;  ii) the satellite network(s) with which the frequency assignments in 2i) above were  associated;  iii)the date on which the space station was no longer maintained at the orbital location in 2i) above;  …  *instructs the Radiocommunication Bureau*  to make available the information provided in *resolves* 1 and 2 on the ITU website within 30 days of its receipt. | − | 3 |
| **42 (Rev.WRC-19)** | Use of interim systems in Region 2 in the broadcasting-satellite and fixed-satellite (feeder-link) services in Region 2 for the frequency bands covered by Appendices 30 and 30A | *resolves*  that administrations and the Radiocommunication Bureau shall apply the procedure contained in the Annex to this Resolution, so long as Appendices **30** and **30A** remain in force. | − | 3 |
| **49 (Rev.WRC-19)** | Administrative due diligence applicable to some satellite radiocommunication services | *resolves*  that the administrative due diligence procedure contained in Annex 1 to this Resolution shall be applied for a satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service for which the advance publication information under Nos. **9.1A** or **9.2B**, or for which the request for modifications of the Region 2 Plan under Article 4, § 4.2.1 *b)* of Appendices **30** and **30A** that involve the addition of new frequencies or orbit positions, or for which the request for modifications of the Region 2 Plan under Article 4, § 4.2.1 *a)* of Appendices **30** and **30A** that extend the service area to another country or countries in addition to the existing service area, or for which the request for additional uses in Regions 1 and 3 under § 4.1 of Article 4 of Appendices **30** and **30A**, or for which the submission under Appendix **30B** is received, with the exception of submissions of new Member States seeking the acquisition of their respective national allotments2 for inclusion in the Appendix **30B** Plan,  *further resolves*  that the procedures in this Resolution are in addition to the provisions under Article **9** or **11** of the Radio Regulations or Appendices **30**, **30A** or **30B**, as applicable, and, in particular, do not affect the requirement to coordinate under those provisions (Appendices **30**, **30A**) in respect of extending the service area to another country or countries in addition to the existing service area,  *instructs the Director of the Radiocommunication Bureau*  to report to future competent world radiocommunication conferences on the results of the implementation of the administrative due diligence procedure. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 3 |
| **55 (Rev.WRC-19)** | Electronic submission of notice forms for satellite networks, earth stations and radio astronomy stations | *instructs the Radiocommunication Bureau*  1to make available coordination requests and notifications referred to in *resolves* 1 “as received” within 30 days of receipt on its website;  2to provide administrations with the latest versions of the capture and validation software and any necessary technical means, training and manuals, along with any assistance requested by administrations to enable them to comply with *resolves* 1 to 4 above;  3to integrate the validation software with the capture software to the extent practicable. | − | 3 |
| **63 (Rev.WRC-12)** | Protection of radiocommunication services against interference caused by radiation from industrial, scientific and medical (ISM) equipment | resolves  to that, to ensure that radiocommunication services are adequately protected, studies are required on the limits to be imposed on the radiation from ISM equipment, within and outside the frequency bands designated in the Radio Regulations for this use,  invites ITU‑R  1 to provide the necessary characteristics and protection criteria for relevant digital radiocommunication systems in order to enable CISPR to review and update, as needed, the limits on radiation from ISM equipment;  2 to continue, in collaboration with CISPR, its studies relating to radiation from ISM equipment, within and outside the frequency bands designated in the Radio Regulations for this use, in order to ensure adequate protection of radiocommunication services, including digital radiocommunication systems, with priority being given to the completion of studies which would permit CISPR to define limits in Publication CISPR 11 on radiation from ISM equipment inside all the bands designated in the Radio Regulations for the use of such equipment,  instructs the Director of the Radiocommunication Bureau  to bring this Resolution to the attention of CISPR*.* | See Doc. [1/1](https://www.itu.int/md/R19-SG01-C-0001/en) | 2  AND  4 |
| **72 (Rev.WRC-19)** | World and regional preparations for world radiocommunication conferences | resolves to invite the regional telecommunication organizations  1 to continue their preparations for WRCs, including the possible convening of joint meetings of regional telecommunication organizations formally and informally;  2 to provide the Radiocommunication Bureau with a document containing the latest version of their views, positions and/or proposals under the agendas of WRCs at the earliest stage after each regional meeting in order to be published on the website of the related WRC,  *instructs the Director of the Radiocommunication Bureau*  1 to publish the documents mentioned in *resolves to invite the regional telecommunication organizations* on the website of each WRC immediately after receiving such documents;  2 to continue consulting the regional telecommunication organizations on the means by which assistance can be given to their preparations for future WRCs in the following areas:  – organization of regional preparatory meetings;  – organization of information sessions, preferably before and after the second session of the Conference Preparatory Meeting (CPM), including presentation of the chapters of the CPM Report;  – identification of major issues to be resolved by the forthcoming WRC;  – facilitation of regional and interregional formal and informal meetings, with the objective of reaching a possible convergence of interregional views on major issues;  3 to submit a report on the results of such consultations to each WRC,  *invites the Director of the Telecommunication Development Bureau*  to collaborate with the Director of the Radiocommunication Bureau in implementing this Resolution*.* | − | 3  AND  4 |
| **74 (Rev.WRC-03)** | Process to keep the technical bases of Appendix 7 current | invites ITU R  1 to continue its study, as required, of the technical bases used for determination of the coordination area of an earth station, including recommended values for the missing entries in the tables of technical coordination parameters (Annex 7 to Appendix **7**);  2 to maintain the relevant ITU-R texts in a format which would facilitate the future revision of Appendix **7**;  3 to assess the significance of changes to the technical bases,  resolves  1 that when ITU-R concludes, based on its studies of the methods in considering d) for determination of the coordination area of an earth station and/or the values of technical coordination parameters, that a revision of Appendix **7** is warranted, the matter shall be brought to the attention of the Radiocommunication Assembly;  2 that, if the Radiocommunication Assembly confirms the improvements of the methods in considering d) for determination of the coordination area of an earth station and/or the values of technical coordination parameters which have been presented by ITU-R, the Director of the Radiocommunication Bureau shall identify the matter in the Director’s report to the following WRC,  invites  1 WRCs, when presented with any significant changes through the Director’s report, to consider the revision of Appendix **7** in light of the recommendation of the Radiocommunication Assembly, pursuant to resolves 1 and 2 above;  2 each WRC, when modifying the Table of Frequency Allocations, to consider any consequential changes that may be required to the technical coordination parameters of Annex 7 to Appendix **7** and, if necessary, request ITU-R to study the matter. | See Doc. [1/1](https://www.itu.int/md/R19-SG01-C-0001/en) | 2  AND  3  AND  5 |
| **75 (Rev.WRC‑12)** | Development of the technical basis for determining the coordination area for coordination of a receiving earth station in the space research service (deep space) with transmitting stations of high-density applications in the fixed service in the 31.8‑32.3 GHz and 37‑38 GHz bands | resolves to invite ITU-R  to develop, as a matter of urgency, the technical basis for determining the coordination area for coordination of a receiving earth station in the space research service (deep space) with transmitting stations of high-density systems in the fixed service in the 31.8-32.3 GHz and 37-38 GHz bands,  *urges administrations*  to participate actively in the aforementioned studies by submitting contributions to ITU-R. | See Doc. [1/1](https://www.itu.int/md/R19-SG01-C-0001/en) | 2 |
| **76 (Rev.WRC-15)** | Protection of geostationary fixed-satellite service and geostationary broadcasting-satellite service networks from the maximum aggregate equivalent power flux density produced by multiple non geostationary fixed-satellite service systems in frequency bands where equivalent power flux-density limits have been adopted | invites the ITU Radiocommunication Sector  1 to continue its studies and to develop , as appropriate, a suitable methodology for calculating the aggregate epfd produced by all non‑GSO FSS systems operating or planning to operate co-frequency in the frequency bands referred to in *considering a)* above into GSO FSS and GSO BSS networks, which may be used to determine whether the systems are in compliance with the aggregate power levels given in Tables 1A to 1D;  2 to continue its studies and to develop a Recommendation on the accurate modelling of interference from non‑GSO FSS systems into GSO FSS and GSO BSS networks in the frequency bands referred to in *considering a)* above, in order to assist administrations planning or operating non‑GSO FSS systems in their efforts to limit the aggregate epfd levels produced by their systems into GSO networks, and to provide guidance to GSO network designers on the maximum epfd↓ levels expected to be produced by all non‑GSO FSS systems when accurate modelling assumptions are used;  3 to develop a Recommendation containing procedures to be used among administrations in order to ensure that the aggregate epfd limits given in Tables 1A to 1D are not exceeded by operators of non-GSO FSS systems;  4 to attempt to develop measurement techniques to identify the interference levels from non-GSO systems in excess of the aggregate limits given in Tables 1A to 1D, and to confirm compliance with these limits,  instructs the Director of the Radiocommunication Bureau  1 to assist in the development of the methodology referred to in *invites the ITU Radiocommunication Sector*1above;  2 to report to a future competent conference on the results of studies in *invites the ITU Radiocommunication Sector* 1 and 3above. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3 |
| **80 (Rev.WRC-07)** | Due diligence in applying the principles embodied in the Constitution | [[See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en)](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  5 |
| **81 (Rev.WRC-15)** | Evaluation of the administrative due diligence procedure for satellite networks | *resolves*  1 that further experience is needed in the application of the administrative due diligence procedures adopted by WRC-97, and that several years may be needed to see whether the procedure produces satisfactory results;  2 that it is premature to consider the adoption, among other procedures, of any financial due diligence procedures. | − | 6 |
| **85 (WRC-03)** | Application of Article 22 of the Radio Regulations to the protection of geostationary fixed‑satellite service and broadcasting-satellite service networks from non-geostationary fixed-satellite service systems | *resolves*  1 that since the Bureau is unable to examine non-GSO FSS systems subject to Nos. **22.5C**, **22.5D** and **22.5F** under Nos. **9.35** and/or **11.31**, the notifying administration shall send to the Bureau a commitment that the non-GSO FSS system complies with the limits given in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22‑3** in addition to the information submitted under Nos. **9.30** and **11.15**;  2 that the Bureau shall issue either a qualified favourable finding under No. **9.35** or a favourable finding with a date of review under No. **11.31** with respect to the limits contained in Tables **22-1A**, **22-1B**, **22-1C**, **22‑1D**, **22-1E**, **22-2** and **22-3**, if *resolves* 1 is satisfied, otherwise the non-GSO FSS system will receive a definitive unfavourable finding;  3 that if an administration believes that a non-GSO FSS system, for which the commitment referred to in *resolves* 1 was sent, has the potential to exceed the limits given in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22‑1E**, **22-2** and **22-3**, it may request from the notifying administration additional information with regard to the compliance with the limits mentioned above. Both administrations shall cooperate to resolve any difficulties, with the assistance of the Bureau, if so requested by either of the parties, and may exchange any additional relevant information that may be available;  4 that the Bureau shall determine coordination requirements between GSO FSS earth stations and non-GSO FSS systems under Nos. **9.7A** and **9.7B** based on bandwidth overlap, and GSO FSS earth station antenna maximum isotropic gain, *G*/*T* and emission bandwidth;  5 that this Resolution shall no longer be applied after the Bureau has communicated to all administrations via a Circular Letter that the epfd validation software is available and the Bureau is able to verify compliance with the limits in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3** and to determine the coordination requirements under Nos. **9.7A** and **9.7B**,  *instructs the Director of the Radiocommunication Bureau*  1 to encourage administrations to develop the epfd validation software;  2 to review, once the epfd validation software is available, its findings made in accordance with Nos. **9.35** and **11.31**;  3 to review, once the epfd validation software is available, the coordination requirements under Nos. **9.7A** and **9.7B**. | − | 3 |
| **86 (Rev.WRC-07)** | Implementation of Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **95 (Rev.WRC-19)** | General review of the Resolutions and Recommendations of world administrative radio conferences and world radiocommunication conferences | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **99 (Rev.WRC-19)** | Provisional application of certain provisions of the Radio Regulations as revised by the 2019 World Radiocommunication Conference and abrogation of certain Resolutions and Recommendations | *resolves*  1 that, as of 23 November 2019, the following provisions of the RR, as revised or established by this conference, shall provisionally apply: Table of Frequency Allocations 1 621.35-1 626.5 MHz, Nos. **5.260A, 5.260B, 5.264A, 5.264B, 5.368**, **5.372**, **5.373**, **5.373A**, **5.441B, 5.550C, 5.550E, 9.35, 9.35.1, 22.5L, 22.5L.1, 22.5M, 33.50, 33.53,** Table **21-4** (frequency band 40-40.5 GHz) as well as all provisions of Appendices **4**, **5**, **15**, **30**, **30A** and **30B**;  2 that, as of 1 July 2020, the following provisions of the RR, as revised or established by this conference, shall provisionally apply: No. **5.517A**, | − | 3 |
| **111 (Orb-88)** | Planning of the fixed-satellite service in the bands 18.1-18.3 GHz, 18.3‑20.2 GHz and 27‑30 GHz | resolves  that the bands 18.1-18.3 GHz, 18.3-20.2 GHz and 27-30 GHz shall not be included in frequency bands identified for planning at this time,  invites the ITU-R  to continue its studies into the technical characteristics of the bands 18.1-18.3 GHz, 18.3‑20.2 GHz and 27‑30 GHz until a decision is taken by a future competent conference. | − | 2 |
| **114 (Rev.WRC‑15)** | Compatibility between the aeronautical radionavigation service and the fixed-satellite service (Earth-to-space) (limited to feeder links of the non-geostationary mobile-satellite systems in the mobile-satellite service) in the frequency band 5 091-5 150 MHz | resolves  that administrations authorizing stations providing feeder links for non-GSO systems in the MSS in the frequency band 5 091-5 150 MHz shall ensure that they do not cause harmful interference to stations of the aeronautical radionavigation service,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO. | − | 4 |
| **122 (Rev.WRC-19)** | Use of the frequency bands 47.2‑47.5 GHz and 47.9‑48.2 GHz by high-altitude platform stations in the fixed service | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  to take all necessary measures to implement this Resolution. | − | 3 |
| **125 (Rev.WRC-12)** | Frequency sharing in the bands 1 610.6-1 613.8 MHz and 1 660‑1 660.5 MHz between the mobile-satellite service and the radio astronomy service | *resolves*  that a future competent conference should evaluate frequency sharing in the bands 1 610.6‑1 613.8 MHz and 1 660-1 660.5 MHz between the MSS and the radio astronomy service, based upon the experience gained with the use of ITU‑R M.1316 and other relevant ITU‑R Recommendations,  *invites ITU‑R*  to continue studies to evaluate the effectiveness of Recommendations aiming to facilitate sharing between the MSS and the radio astronomy service,  *instructs the Director of the Radiocommunication Bureau*  to provide the results of the studies in the Report of the Director to a future competent conference,  *urges administrations*  to participate actively in this evaluation. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3 |
| **140 (Rev.WRC-15)** | Measures and studies associated with the equivalent power flux‑density (epfd) limits in the frequency band 19.7-20.2 GHz | *resolves to invite administrations*  to consider using the relevant ITU-R Recommendations regarding the protection of GSO FSS satellite networks from interference by non-GSO FSS systems as a guideline for consultation between administrations, to fulfil their obligations under No. **22.2** in the frequency band 19.7-20.2 GHz, and in the case where an administration responsible for a non-GSO FSS system requests the application of No. **22.5CA**,  *instructs the Radiocommunication Bureau*  in cases where an administration responsible for a non-GSO FSS system indicates in its coordination request its wish to apply No. **22.5CA** with respect to the epfd↓ limits in Table **22‑1C** in the frequency band 19.7‑20.2 GHz but has not yet reached the necessary agreements, to make a qualified favourable finding with respect to this provision. This provisional finding regarding compliance with epfd↓ limits shall be changed to a definitive favourable finding at the notification stage, only if all explicit agreements from administrations for which epfd limits are exceeded are obtained and an indication thereof is provided to the Bureau within two years from the date of receipt of the coordination request. Otherwise, this provisional finding shall be changed to a definitive unfavourable finding. | − | 3 |
| **143 (Rev.WRC-19)** | Guidelines for the implementation of high-density applications in the fixed-satellite service in frequency bands identified for these applications | *resolves*  that administrations which implement HDFSS should consider the following guidelines:  *a)* make some or all of the frequency bands identified in No. **5.516B** available for HDFSS applications;  *b)* in making frequency bands available under *resolves a)*, take into account:  – that HDFSS deployment will be simplified in frequency bands that are not shared with terrestrial services;  – in frequency bands shared with terrestrial services, the impact that the further deployment of terrestrial stations would have on the existing and future development of HDFSS, and the further deployment of HDFSS earth stations would have on the existing and future development of terrestrial services;  *c)* take into account the relevant technical characteristics applicable to HDFSS, as identified by ITU-R Recommendations (e.g. the most recent versions of Recommendations ITU-R S.524, ITU-R S.1594 and ITU‑R S.1783);  *d)* take into account other existing and planned FSS systems, having different characteristics, in frequency bands where HDFSS is implemented in accordance with *resolves a)* above, and the conditions specified in No. **5.516B**, | − | 6 |
| **144 (Rev.WRC-15)** | Special requirements of geographically small or narrow countries operating earth stations in the fixed-satellite service in the frequency band 13.75-14 GHz | *resolves*  that the administrations of geographically small or narrow countries may exceed the limitations on FSS earth station power flux-density at the low-water mark in No. **5.502** if such operation is in conformance with bilateral agreements with administrations deploying maritime radiolocation systems in the frequency band 13.75-14 GHz, this being in order to provide due consideration to administrations of geographically small or narrow countries, | − | 6 |
| **145 (Rev.WRC-19)** | Use of the frequency band 27.9‑28.2 GHz by high-altitude platform stations in the fixed service | *resolves*  1 that, notwithstanding No. **4.23**, in Region 2 the use of HAPS within the fixed-service allocations in the frequency band 27.9-28.2 GHz shall not cause harmful interference to, or claim protection from, other stations of services operating in accordance with the Table of Frequency Allocations of Article **5**, and, further, that the development of these other services shall proceed without constraints by HAPS operating pursuant to this Resolution;  2 that any use by HAPS of the fixed-service allocation at 27.9-28.2 GHz pursuant to *resolves* 1 above shall be limited to operation in the HAPS-to-ground direction;  3 that the administrations listed in No. **5.537A** which intend to implement systems using HAPS in the fixed service in the frequency band 27.9-28.2 GHz shall seek explicit agreement of concerned administrations with regard to their stations of primary services to ensure that the conditions in No. **5.537A** are met, and those administrations in Region 2 which intend to implement systems using HAPS in the fixed service in these frequency bands shall seek explicit agreement of concerned administrations with regard to their stations of services operating in accordance with the Table of Frequency Allocations of Article **5** to ensure that the conditions in *resolves* 1 are met;  4 that administrations planning to implement a HAPS system pursuant to *resolves* 1 above shall notify the frequency assignment(s) by submitting all mandatory elements of Appendix **4** to the Radiocommunication Bureau for the examination of compliance with *resolves* 3 above,  *invites the ITU Radiocommunication Sector*  1 to continue to carry out studies on the appropriate interference mitigation techniques for the situations referred to in *considering i)*;  2 to develop protection criteria for the mobile service having primary allocations in the frequency band 27.9-28.2 GHz from HAPS in the fixed service and include the results of these studies in existing or new ITU-R Reports/Recommendations, as appropriate. | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2  AND  3 |
| **147 (WRC-07)** | Power flux-density limits for certain systems in the fixed-satellite service using highly-inclined orbits having an apogee altitude greater than 18 000 km and an orbital inclination between 35° and 145° in the band 17.7-19.7 GHz | *resolves*  that in the band 17.7-19.7 GHz, FSS space stations currently operating in a system of the type described in *considering d)* and for which advance publication information was received by the Radiocommunication Bureau before 5 July 2003, as well as space stations with the same parameters in a future notice for a replacement system, shall continue to be subject to the power flux-density limits:  −115 dB(W/(m2 · MHz)) for  0° ≤ δ < 5°  −115 + 0.5(δ− 5) dB(W/(m2 · MHz)) for  5° ≤ δ ≤ 25°  −105 dB(W/(m2 · MHz)) for 25° < δ ≤ 90°  where δ is the angle of arrival above the horizontal plane in degrees. | − | 3 |
| **148 (Rev.WRC-15)** | Satellite systems formerly listed in Part B of the Plan of Appendix 30B (WARC Orb-88) | *resolves*  that an administration wishing to further extend the notified period of validity of assignments to “existing system(s)” as referred to in *considering c)* shall inform the Bureau accordingly more than three years before the expiry of the notified period of validity and, if the characteristics of that assignment remain unchanged, the Bureau shall amend, as requested, the notified period of validity and publish that information in a special section of the Bureau’s International Frequency Information Circular (BR IFIC),  *instructs the Radiocommunication Bureau*  1 to cancel from the Master Register and the List assignments to “existing system(s)” as referred to in *considering c)* upon expiry of their notified period of validity;  2 to calculate aggregate *C*/*I* of the “existing systems” as referred to in *considering c)* without taking into account the interference between these systems;  3to take the appropriate actions in accordance with *resolves* above. | − | 3 |
| **149 (Rev.WRC-12)** | Submissions from new Member States of the Union relating to Appendix 30B of the Radio Regulations | *resolves*  1 that an administration of a country which has joined the Union as a Member State and does not have a national allotment in the Plan or an assignment in the List stemming from the conversion of an allotment shall have the right to request the Bureau to exclude its territory from the service area of an allotment or an assignment, whereupon the Bureau shall exclude the territory accordingly without adversely affecting the rest of the service area and subsequently recalculate the new reference situation for the Appendix **30B** Plan and List;  2 to urge administrations1 to make utmost efforts to accommodate submissions received from new Member States of ITU.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1 Those administrations which are the basis of unfavourable findings with respect to submissions from new Member  States. | − | 3 |
| **150 (WRC‑12)** | Use of the bands 6 440-6 520 MHz and 6 560-6 640 MHz by gateway links for high-altitude platform stations in the fixed service | *resolves*  …  *invites*  administrations to consult with the Director of the Radiocommunication Bureau to determine the data elements of HAPS gateway stations necessary for notification and examination of frequency assignments in accordance with the provisions of Article **11** and Appendix **4**,  *instructs the Director of the Radiocommunication Bureau*  to implement this Resolution. | − | 3 |
| **154 (Rev.WRC-15)** | Consideration of technical and regulatory actions in order to support existing and future operation of fixed-satellite service earth stations within the frequency band 3 400‑4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1 | *resolves*  1 to recommend that administrations in countries where the frequency band 3 400‑3 600 MHz is allocated on a primary basis to the mobile, except aeronautical mobile, service in Region 1 and identified for IMT in Region 1 ensure compliance of IMT stations with the relevant provisions set forth in the Radio Regulations and apply the relevant coordination procedures before bringing these applications into use;  2 to urge administrations in Region 1, when planning and/or licensing fixed point-to-point, fixed wireless access and IMT systems in frequency bands referred to in *considering b)* above, to take into account the protection needs of existing and planned FSS earth stations within the frequency band 3 400-4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1;  3 to invite administrations in Region 1, taking into account the number of earth stations involved for this particular type of usage, to consider the possibility of licensing the FSS earth stations used for communications as an aid to the safe operation of aircraft and/or distribution of meteorological information on an individual basis and registering them in the MIFR as specific earth stations;  4 to encourage administrations in Region 1 to employ the appropriate mitigation techniques described in the ITU-R publications referred to in *recognizing a)* above;  5 to invite administrations to ensure that the application of these technical and regulatory measures to FSS and the mobile service does not limit the use of the frequency band 3 400-4 200 MHz by other existing and planned systems and services in other countries,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO and WMO. | − | 4 |
| **155 (Rev.WRC-19)** | Regulatory provisions related to earth stations on board unmanned aircraft which operate with geostationary-satellite networks in the fixed-satellite service in certain frequency bands not subject to a Plan of Appendices 30, 30A and 30B for the control and non-payload communications of unmanned aircraft systems in non-segregated airspaces | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **156 (WRC-15)** | Use of the frequency bands 19.7‑20.2 GHz and 29.5‑30.0 GHz by earth stations in motion communicating with geostationary space stations in the fixed-satellite service | *resolves*  1 that earth stations in motion communicating with the GSO FSS shall operate under the following conditions:  …  1.5 to this effect, that administration shall submit to the Bureau a commitment for implementation of *resolves* 1.4 above;  …  2 that the administration responsible for the satellite network shall ensure that the earth stations in motion employ techniques to track the associated GSO FSS satellite and that they are resistant to capturing and tracking adjacent GSO satellites;  3 that the notifying administration for the satellite network within which the earth stations in motion operate by means of fixed, mobile or transportable terminals shall ensure that they have the capability to limit operations of such earth stations to the territory or territories of administrations having authorized those earth stations and to comply with Article **18**;  4 that administrations authorizing earth stations in motion shall require the operators to provide a point of contact for the purpose of tracing any suspected cases of interference from earth stations in motion. | − | 3 |
| **160 (WRC-15)** | Facilitating access to broadband applications delivered by high-altitude platform stations | [Editorial note: should have been deleted at WRC-19 since was related to WRC-19 agenda item 1.14] | See [CA/226](https://www.itu.int/md/R00-CA-CIR-0226/en) | 1 |
| **161 (WRC-15)** | Studies relating to spectrum needs and possible allocation of the frequency band 37.5-39.5 GHz to the fixed-satellite service | [Editorial note: should have been deleted at WRC-19 since was related to WRC-23 preliminary agenda item 2.4] | See [CA/226](https://www.itu.int/md/R00-CA-CIR-0226/en) | 1 |
| **163 (WRC-15)** | Deployment of earth stations in some Regions 1 and 2 countries in the frequency band 14.5-14.75 GHz in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service | *resolves*  that earth stations in Regions 1 and 2 in the frequency band 14.5-14.75 GHz in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall be operated only in the following countries: Algeria, Saudi Arabia, Argentina, Armenia, Azerbaijan, Bahrain, Belarus, Brazil, Bulgaria, Cuba, Egypt, El Salvador, the Russian Federation, Iraq, Jordan, Kazakhstan, Kuwait, Mauritania, Mexico, Morocco, Nicaragua, Norway, Oman, Uzbekistan, Qatar, Kyrgyzstan, Sudan, Turkey, Uruguay and Venezuela; such operation is subject to the technical and operational limitations contained in Nos. **5.509B, 5.509C, 5.509D, 5.509E** and **5.509F**. | − | 3 |
| **164 (WRC-15)** | Deployment of earth stations in some Region 3 countries in the frequency band 14.5-14.8 GHz in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service | *resolves*  that earth stations in Region 3 in the frequency band 14.5-14.8 GHz in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall be operated only in the following countries: Australia, Cambodia, China, Japan, Lao P.D.R., Pakistan, Papua New Guinea, Thailand and Viet Nam; such operation is subject to the technical and operational limitations contained in Nos. **5.509B, 5.509C, 5.509D, 5.509E** and **5.509F**. | − | 3 |
| **165 (WRC-19)** | Use of the frequency band 21.4‑22 GHz by high-altitude platform stations in the fixed service in Region 2 | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  to take all necessary measures to implement this Resolution. | − | 3 |
| **166 (WRC-19)** | Use of the frequency band 24.25‑27.5 GHz by high-altitude platform stations in the fixed service in Region 2 | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  to take all necessary measures to implement this Resolution. | − | 3 |
| **167 (WRC-19)** | Use of the frequency band 31‑31.3 GHz by high-altitude platform stations in the fixed service | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  to take all necessary measures to implement this Resolution. | − | 3 |
| **168 (WRC-19)** | Use of the frequency band 38‑39.5 GHz by high-altitude platform stations in the fixed service | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  to take all necessary measures to implement this Resolution,  *invites the ITU Radiocommunication Sector*  to develop a Recommendation to provide technical guidance to facilitate the implementation of HAPS operations while ensuring the protection of non-GSO FSS earth stations. | − | 2  AND  3 |
| **169 (WRC-19)** | Use of the frequency bands 17.7‑19.7 GHz and 27.5-29.5 GHz by earth stations in motion communicating with geostationary space stations in the fixed-satellite service | *resolves*  1 that, for any ESIM communicating with a GSO FSS space station within the frequency bands 17.7‑19.7 GHz and 27.5-29.5 GHz, or parts thereof, the following conditions shall apply:  …  1.2.5 for the application of Part II of Annex 3 as referred to in *resolves* 1.2.2 and 1.2.4 above, BR shall examine the characteristics of aeronautical ESIMs with respect to the conformity with the power flux-density (pfd) limits on the Earth’s surface specified in Part II of Annex 3 and publish the results of such examination in the BR IFIC;  …  *instructs the Director of the Radiocommunication Bureau*  1 to take all necessary actions to facilitate the implementation of this Resolution, together with providing any assistance for the resolution of interference, when required;  2 to report to future world radiocommunication conferences any difficulties or inconsistencies encountered in the implementation of this Resolution, including whether or not the responsibilities relating to the operation of ESIMs have been properly addressed;  3 to review, if necessary, once the methodology to examine the characteristics of aeronautical ESIMs with respect to conformity with the pfd limits on the Earth’s surface specified in Part II of Annex 3 is available, its findings made in accordance with No. **11.31**,  *invites administrations*  to collaborate for the implementation of this Resolution, in particular for resolving interference, if any,  *invites the ITU Radiocommunication Sector*  to conduct, as a matter of urgency, relevant studies to determine a methodology with respect to the examination referred to in *resolves* 1.2.5 above,  *instructs the Secretary-General*  to bring this Resolution to the attention of the Secretary-General of the International Maritime Organization and of the Secretary General of the International Civil Aviation Organization. | Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  4 |
| **170 (WRC-19)** | Additional measures for satellite networks in the fixed-satellite service in frequency bands subject to Appendix 30B for the enhancement of equitable access to these frequency bands | *resolves*  that, as of 23 November 2019, the special procedure described in Attachment 1 to this Resolution shall be applied for the processing of submissions received by BR under Article 6 of Appendix **30B** for conversion of the allotment of an administration into an assignment with modifications outside the envelope of the initial allotment while restricted to providing service to its national territory, designated by test points as contained in the corresponding allotment, a submission by an administration of an additional system the service area of which is limited to its national territory, designated by test points as contained in the allotment, or a submission by an administration acting on behalf of a group of named administrations of an additional system the service area of which is limited to the national territories of the group of named administrations, designated by test points as contained in the allotments, in the frequency bands 4 500-4 800 MHz, 6 725‑7 025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz, if requested by an administration or one acting on behalf of a group of named administrations in respect of its submission, as specified in Attachment 1 to this Resolution,  *further* *resolves*  that, when coordinating networks submitted under these additional measures, administrations, in particular those having satellite networks in process or included in the List with global coverage, exercise the utmost goodwill, and endeavour to overcome any difficulties encountered by the incoming network, in order to accommodate the incoming submission while respecting the underlying principles of No. **9.6** and its associated Rule of Procedure1 which would apply by analogy to Article 6 of Appendix **30B**; in addressing, in particular, difficulties encountered in coordination due to the issue of potential Earth-to-space harmful interference caused by an incoming network which originates outside the service area of other potentially affected networks, administrations having potentially affected networks with global coverage shall implement, to the maximum extent possible, means to accommodate the incoming network, taking into account actual operating characteristics of the potentially affected networks,  *instructs the Director of the Radiocommunication Bureau*  to provide assistance, if requested by an administration, in the generation of a minimum ellipse as called for in § 3 c) of Attachment 1 to this Resolution. | − | 3 |
| **171 (WRC-19)** | Review and possible revision of Resolution 155 (Rev.WRC-19) and No. 5.484B in the frequency bands to which they apply | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **172 (WRC-19)** | Operation of earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service in the frequency band 12.75‑13.25 GHz (Earth-to-space) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **173 (WRC-19)** | Use of the frequency bands 17.7‑18.6 GHz, 18.8‑19.3 GHz and 19.7‑20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) by earth stations in motion communicating with non‑geostationary space stations in the fixed-satellite service | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **174 (WRC-19)** | Primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3‑17.7 GHz in Region 2 | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **175 (WRC-19)** | Use of International Mobile Telecommunications systems for fixed wireless broadband in the frequency bands allocated to the fixed service on a primary basis | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **176 (WRC-19)** | Use of the frequency bands 37.5‑39.5 GHz (space-to-Earth), 40.5-42.5 GHz (space-to-Earth), 47.2‑50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) by aeronautical and maritime earth stations in motion communicating with geostationary space stations in the fixed-satellite service | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **177 (WRC-19)** | Studies relating to spectrum needs and possible allocation of the frequency band 43.5‑45.5 GHz to the fixed-satellite service | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **178 (WRC-19)** | Studies of technical and operational issues and regulatory provisions for non-geostationary fixed-satellite service satellite system feeder links in the frequency bands 71‑76 GHz (space-to-Earth and proposed new Earth-to-space) and 81-86 GHz (Earth-to-space) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **205 (Rev.WRC-19)** | Protection of systems operating in the mobile-satellite service in the frequency band 406-406.1 MHz | *resolves*  1 to request administrations not to make new frequency assignments within the frequency bands 405.9‑406.0 MHz and 406.1-406.2 MHz under the mobile and fixed services;  2 that administrations take into account frequency drift characteristics of radiosondes when selecting their operating frequencies above 405 MHz to avoid transmitting in the 406-406.1 MHz frequency band and take all practical steps to avoid frequency drifting close to 406 MHz,  *instructs the Director of the Radiocommunication Bureau*  1 to continue to organize monitoring programmes in the frequency band 406-406.1 MHz in order to identify the source of any unauthorized emission in that frequency band;  2 to organize monitoring programmes on the impact of unwanted emissions from systems operating in the frequency bands 405.9-406 MHz and 406.1-406.2 MHz on MSS reception in the frequency band 406‑406.1 MHz in order to assess the effectiveness of this Resolution, and to report to subsequent world radiocommunication conferences, | − | 3 |
| **207 (Rev.WRC-15)** | Measures to address unauthorized use of and interference to frequencies in the frequency bands allocated to the maritime mobile service and to the aeronautical mobile (R) service | *resolves to invite ITU‑R and ITU‑D, as appropriate*  to increase regional awareness of appropriate practices in order to help mitigate interference in the HF bands, especially on distress and safety channels,  *instructs the Radiocommunication Bureau*  1 to seek the cooperation of administrations in identifying the sources of those emissions by all available means and in securing the cessation of those emissions;  2 when the station of another service transmitting in a frequency band allocated to the maritime mobile service or to the aeronautical mobile (R) service has been identified, to inform the administration concerned;  3 to include the problem of interference to maritime and aeronautical distress and safety channels on the agenda of relevant regional radiocommunication seminars,  *instructs the Secretary-General*  to bring this Resolution to the attention of the International Maritime Organization and the International Civil Aviation Organization for such actions as they may consider appropriate. | − | 3  AND  4 |
| **212 (Rev.WRC-19)** | Implementation of International Mobile Telecommunications in the frequency bands 1 885‑2 025 MHz and 2 110-2 200 MHz | *invites the ITU Radiocommunication Sector*  to study possible technical and operational measures to improve co-existence and compatibility between the terrestrial and satellite components of IMT in the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz where those frequency bands are shared by the mobile service and the mobile-satellite service in different countries, in particular for the deployment of independent satellite and terrestrial components of IMT and to facilitate development of both the satellite and terrestrial components of IMT, | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2 |
| **215 (Rev.WRC-12)** | Coordination process among mobile-satellite systems and efficient use of the allocations to the mobile-satellite service in the 1-3 GHz range | *resolves to invite ITU‑R*  1 to continue its studies on this subject and develop, as a matter of urgency, criteria for determining the need to coordinate and calculation methods for determining levels of interference, as well as the required protection ratios between MSS networks;  2 to study, as a matter of urgency, the use of technically and operationally feasible techniques to allow for improvements in spectrum efficiency in MSS systems,  *further resolves*  1 that ITU‑R studies should be focused on the technical and operational characteristics of systems using spread-spectrum multiple-access techniques that can allow co-frequency, co‑coverage, codirectional sharing but which involve cooperation among systems’ operators to maximize the efficient use of spectrum by multiple MSS systems using such access techniques;  2 that administrations responsible for the introduction of mobile-satellite systems are urged to implement, as practicable, the latest available technologies to improve spectrum efficiency consistent with the requirement to offer viable MSS services;  3 to recommend that administrations be encouraged to use the most advanced technology available when preparing to implement their global MSS systems in the 1-3 GHz range so that they may operate, if necessary, in different frequency bands in different regions, in accordance with the MSS allocations in the 1-3 GHz range decided by WRC‑97. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2 |
| **217 (WRC-97)** | Implementation of wind profiler radars | *resolves*  1 to urge administrations to implement wind profiler radars as radiolocation service systems in the following bands, having due regard to the potential for incompatibility with other services and assignments to stations in these services, thereby taking due account of the principle of geographical separation, in particular with regard to neighbouring countries, and keeping in mind the category of service of each of these services:  …  *instructs the Secretary-General*  to bring this Resolution to the attention of the International Civil Aviation Organization (ICAO), International Maritime Organization (IMO) and WMO. | − | 4 |
| **221 (Rev.WRC‑07)** | Use of high altitude platform stations providing IMT in the bands 1 885‑1 980 MHz, 2 010‑2 025 MHz and 2 110‑2 170 MHz in Regions 1 and 3 and 1 885‑1 980 MHz and 2 110-2 160 MHz in Region 2 | *invites ITU-R*  to develop, as a matter of urgency, an ITU-R Recommendation providing technical guidance to facilitate consultations with neighbouring administrations. | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2  AND  3 |
| **222 (Rev.WRC-12)** | Use of the frequency bands 1 525‑1 559 MHz and 1 626.5‑1 660.5 MHz by the mobile-satellite service, and procedures to ensure long-term spectrum access for the aeronautical mobile-satellite (R) service | *resolves*  …  4 that the notifying administrations of mobile-satellite networks shall ensure that MSS operators carrying non-safety-related traffic yield capacity, as and when necessary, to accommodate the spectrum requirements for distress, urgency and safety communication of GMDSS communications, as elaborated in Articles **32** and **33**, and for AMS(R)S communications within priority categories 1 to 6 of Article **44**; this could be achieved in advance through the coordination process in *resolves* 1, and in the case of AMS(R)S the procedures contained in the Annex to this Resolution shall apply,  *invites*  1 administrations, if they so desire, to have their AMS(R)S traffic requirements submitted to ICAO before the frequency coordination meeting;  2 ICAO to evaluate and, as appropriate, comment on the AMS(R)S traffic requirements received from individual administrations, on the basis of the known global and regional aviation traffic requirements, including the time-scale of regional and global communication requirements,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO. | − | 3  AND  4 |
| **223 (Rev.WRC-19)** | Additional frequency bands identified for International Mobile Telecommunications | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **224 (Rev.WRC-19)** | Frequency bands for the terrestrial component of International Mobile Telecommunications below 1 GHz | *resolves*  …  5 that in Region 1 (excluding Mongolia) and in the Islamic Republic of Iran, the implementation of stations in the mobile service shall be subject to the applications of procedures contained in the GE06 Agreement; in so doing  *a)* administrations which deploy stations in the mobile service for which coordination was not required, or without having obtained the prior consent of those administrations that may be affected, shall not cause unacceptable interference to, nor claim protection from, stations of the broadcasting service of administrations operating in conformity with the GE06 Agreement. This should include a signed commitment as required under § 5.2.6 of the GE06 Agreement;  *b)* administrations which deploy stations in the mobile service for which coordination was not required, or without having obtained the prior consent of those administrations that may be affected, shall not object nor prevent the entry into the GE06 plan or recording in the MIFR of additional future broadcasting allotments or assignments of any other administration in the GE06 Plan with reference to those stations;  …  *invites the Director of the Telecommunication Development Bureau*  to draw the attention of the ITU Telecommunication Development Sector to this Resolution. | − | 3  AND  4 |
| **225 (Rev.WRC‑12)** | Use of additional frequency bands for the satellite component of IMT | *resolves*  1 that, in addition to the frequency bands indicated in *considering a)* and *resolves*2, the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 626.5 MHz, 1 626.5-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 668-1 675 MHz and 2 483.5-2 500 MHz may be used by administrations wishing to implement the satellite component of IMT, subject to the regulatory provisions related to the mobile-satellite service in these frequency bands;  2 that the bands 2 500-2 520 MHz and 2 670-2 690 MHz as identified for IMT in No. **5.384A** and allocated to the mobile-satellite service in Region 3 may be used by administrations in that Region wishing to implement the satellite component of IMT; however, depending on user demand, it may be possible in the longer term that the administrations decide to use these bands for the terrestrial component of IMT (see the Preamble of the ITU Constitution);  3 that this identification of frequency bands for the satellite component of IMT does not preclude the use of these bands by any applications of the services to which they are allocated and does not establish priority in the Radio Regulations,  *invites ITU‑R*  1 to study the sharing and coordination issues in the above bands related to use of the mobile-satellite service allocations for the satellite component of IMT and the use of this spectrum by the other allocated services, including the radiodetermination-satellite service;  2 to report the results of these studies to a future world radiocommunication conference,  *invites the Director of the Telecommunication Development Bureau*  to draw the attention of the Telecommunication Development Sector to this Resolution. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  4 |
| **229 (Rev.WRC-19)** | Use of the frequency bands 5 150‑5 250 MHz, 5 250‑5 350 MHz and 5 470‑5 725 MHz by the mobile service for the implementation of wireless access systems including radio local area networks | *resolves*  …  *invites the ITU Radiocommunication Sector*  1 to continue studies on mitigation techniques to provide protection of EESS from stations in the mobile service;  2 to continue studies on suitable test methods and procedures for the implementation of dynamic frequency selection, taking into account practical experience. | − | 2  AND  3 |
| **235 (WRC-15)** | Review of the spectrum use of the frequency band 470-960 MHz in Region 1 | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **240 (WRC-19)** | Spectrum harmonization for railway radiocommunication systems between train and trackside within the existing mobile-service allocations | *recognizing*  …  *e)* that the ITU Radiocommunication Sector (ITU-R) is developing an ITU-R Recommendation to facilitate the spectrum harmonization of current and evolving RSTT within the existing mobile-service allocations,  *resolves*  to encourage administrations, when planning for their RSTT, to consider the study results as per *invites the ITU Radiocommunication Sector* 1*,* as well as other relevant ITU-R Recommendations/Reports, with a view to facilitating spectrum harmonization for RSTT, in particular for train radio applications,  *invites the ITU Radiocommunication Sector*  1 to continue development of the ITU-R Recommendation referred in *recognizing e)* addressing spectrum harmonization for RSTT in a timely manner;  2 to further develop and update ITU-R Recommendations/Reports concerning the technical and operational implementation of RSTT, as appropriate,  *instructs the Director of the Radiocommunication Bureau*  to support administrations in their work towards the harmonization of spectrum for RSTT pursuant to *resolves* above,  *invites administrations*  to encourage railway agencies and organizations to utilize relevant ITU-R publications in implementing technologies and systems supporting RSTT,  *invites Member States, Sector Members, Associates and Academia*  to participate actively in the study by submitting contributions to ITU-R,  *instructs the Secretary-General*  to bring this Resolution to the attention of UIC, 3GPP and other relevant international and regional organizations. | − | 2  AND  4 |
| **241 (WRC-19)** | Use of the frequency band 66‑71 GHz for International Mobile Telecommunications and coexistence with other applications of the mobile service | *resolves*  1 that administrations wishing to implement IMT make available the frequency band 66-71 GHz identified in No. **5.559AA** for use by the terrestrial component of IMT;  2 that administrations wishing to implement IMT in the frequency band 66-71 GHz, identified for IMT under the provisions in No. **5.559AA**, which also wish to implement other applications of the mobile service, including other wireless access systems in the same frequency band, consider coexistence between IMT and these applications,  *invites the ITU Radiocommunication Sector*  1 to develop harmonized frequency arrangements for the implementation of the terrestrial component of IMT in the frequency band 66-71 GHz;  2 to develop ITU-R Recommendations and/or Reports, as appropriate, to assist administrations in ensuring the efficient use of the frequency band through coexistence mechanisms between IMT and other applications of the mobile service, including other wireless access systems, as well as between the mobile service and other services;  3 to regularly review, as appropriate, the impact of evolving technical and operational characteristics of IMT systems (including base-station density) and those of systems of space services on sharing and compatibility, 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 receivers,  *instructs the Director of the Radiocommunication Bureau*  to bring this Resolution to the attention of relevant international organizations. | − | 2  AND  4 |
| **242 (WRC-19)** | Terrestrial component of International Mobile Telecommunications in the frequency band 24.25-27.5 GHz | *considering*  …  *i)* that ITU-R has studied, in preparation for WRC-19, sharing and compatibility with services allocated in the frequency band 24.25-27.5 GHz and its adjacent band, based on characteristics available at that time, and results may change if these characteristics change;  …  *resolves*  …  2 that administrations shall apply the following conditions for the frequency band  24.25-27.5 GHz:  …  *invites the ITU Radiocommunication Sector*  1 to develop harmonized frequency arrangements to facilitate IMT deployment in the frequency band 24.25-27.5 GHz, taking into account the results of sharing and compatibility studies conducted in preparation for WRC-19;  2 to develop an ITU-R Recommendation on methodologies for calculating coordination zones around EESS/SRS earth stations in order to avoid harmful interference from IMT systems in the frequency band 25.5-27 GHz;  3 to develop ITU-R Recommendation(s) to assist administrations to mitigate interference from FSS earth stations into IMT stations operating in the frequency bands 24.65-25.25 GHz and 27-27.5 GHz;  4 to update existing ITU-R Recommendations or develop a new ITU-R Recommendation, as appropriate, to provide information and assistance to the concerned administrations on possible coordination and protection measures for the RAS in the frequency band 23.6-24 GHz from IMT deployment;  5 to regularly review, as appropriate, the impact of evolving technical and operational characteristics of IMT systems (including base-station density) and those of systems of space services on sharing and compatibility, 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 receivers,  *instructs the Director of the Radiocommunication Bureau*  to bring this Resolution to the attention of relevant international organizations. | − | 2  AND  3  AND  4 |
| **243 (WRC-19)** | Terrestrial component of International Mobile Telecommunications in the frequency bands 37‑43.5 GHz and 47.2‑48.2 GHz | *considering*  …  *h)* that the ITU Radiocommunication Sector (ITU-R) has studied, in preparation for WRC-19, sharing and compatibility with services allocated in the frequency ranges 37-43.5 GHz and 47.2-48.2 GHz and their adjacent frequency bands, based on the characteristics available at that time, and the results may change if these characteristics change;  …  *resolves*  …  2 that, in order to ensure coexistence between IMT in the frequency bands 37-43.5 GHz and 47.2-48.2 GHz as identified by this conference in Article **5** and other services to which the frequency band is allocated, including the protection of these other services, administrations shall apply the following condition(s):;  …  *invites the ITU Radiocommunication Sector*  1 to develop harmonized frequency arrangements to facilitate IMT deployment in the frequency bands 37-43.5 GHz and 47.2-48.2 GHz, taking into account the results of sharing and compatibility studies conducted in preparation for WRC-19;  2 to continue providing guidance to ensure that IMT can meet the telecommunication needs of the developing countries;  3 to develop an ITU-R Recommendation on methodologies for calculating coordination zones around SRS earth stations in order to avoid harmful interference from IMT systems in the frequency band 37-38 GHz;  4 to develop ITU-R Reports and Recommendations, as appropriate, to assist administrations in ensuring coexistence between IMT and BSS and FSS, including HDFSS as per No. **5.516B**, within the frequency ranges 37-43.5 GHz and 47.2‑48.2 GHz, as appropriate;  5 to develop a new ITU-R Recommendation, as appropriate, to provide information and assistance to the concerned administrations on possible coordination and protection measures for the RAS in the frequency band 42.5‑43.5 GHz from IMT deployment;  6 to regularly review, as appropriate, the impact of evolving technical and operational characteristics of IMT systems (including base-station density) and those of systems of space service on sharing and compatibility, 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 receivers,  *instructs the Director of the Radiocommunication Bureau*  to bring this Resolution to the attention of relevant international organizations. | − | 2  AND  3  AND  4 |
| **244 (WRC-19)** | International Mobile Telecommunications in the frequency band 45.5‑47 GHz | *resolves*  1 that administrations wishing to implement IMT consider use of the frequency band 45.5-47 GHz, identified for IMT in No. **5.553A**, and the benefits of harmonized utilization of the spectrum for the terrestrial component of IMT taking into account the latest relevant ITU-R Recommendations,  *invites the ITU Radiocommunication Sector*  1 to develop harmonized frequency arrangements to facilitate IMT deployment in the frequency band 45.5‑47 GHz;  2 to continue providing guidance to ensure that IMT can meet the telecommunication needs of the developing countries in the context of the studies referred to above. | − | 2 |
| **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 | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **246 (WRC-19)** | Studies to consider possible allocation of the frequency band 3 600-3 800 MHz to the mobile, except aeronautical mobile, service on a primary basis within Region 1 | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **247 (WRC-19)** | Facilitating mobile connectivity in certain frequency bands below 2.7 GHz using high-altitude platform stations as International Mobile Telecommunications base stations | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **248 (WRC-19)** | Studies relating to spectrum needs and potential new allocations to the mobile-satellite service in the frequency bands 1 695-1 710 MHz, 2 010-2 025 MHz, 3 300‑3 315 MHz and 3 385‑3 400 MHz for future development of narrowband mobile-satellite systems | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **249 (WRC-19)** | Study of technical and operational issues and regulatory provisions for space-to-space transmissions in the Earth-to-space direction in the frequency bands [1 610-1 645.5 and 1 646.5-1 660.5 MHz] and the space-to-Earth direction in the frequency bands [1 525-1 544 MHz], [1 545-1 559 MHz], [1 613.8-1 626.5 MHz] and [2 483.5-2 500 MHz] among non-geostationary and geostationary satellites operating in the mobile-satellite service | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **250 (WRC-19)** | Studies on possible allocations to the land mobile service (excluding International Mobile Telecommunications) in the frequency band 1 300‑1 350 MHz for use by administrations for the future development of terrestrial mobile-service applications | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **251 (WRC-19)** | Removal of the limitation regarding aeronautical mobile in the frequency range 694-960 MHz for the use of International Mobile Telecommunications user equipment by non-safety applications | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **331 (Rev.WRC‑12)** | Operation of the Global Maritime Distress and Safety System | *resolves*  …  *resolves further*  that the Secretary-General should ensure that such arrangements and details regarding the area concerned be indicated in relevant maritime publications,  *invites ITU‑R*  to monitor the development of and changes to the GMDSS, and to continue to develop techniques and systems relevant for the GMDSS,  *instructs the Secretary-General*  to bring this Resolution to the attention of IMO, the International Civil Aviation Organization (ICAO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2  AND  4 |
| **339 (Rev.WRC‑07)** | Coordination of NAVTEX services | *resolves*  to invite administrations to apply the procedures established by IMO, taking into account the IMO NAVTEX Manual, for coordinating the use of the frequencies 490 kHz, 518 kHz and 4 209.5 kHz,  *instructs the Secretary-General*  to invite IMO to provide ITU with information on a regular basis on operational coordination for NAVTEX services on the frequencies 490 kHz, 518 kHz and 4 209.5 kHz,  *instructs the Director of the Radiocommunication Bureau*  to publish this information in the *List of Coast Stations and Special Service Stations* (List IV) (see No. **20.7**). | − | 4 |
| **343 (Rev.WRC‑12)** | Maritime certification for personnel of ship stations and ship earth stations for which a radio installation is not compulsory | *resolves*  that administrations wishing to implement special certification for the non‑compulsory sector should implement the certificates contained in the Annex to this Resolution,  *invites ITU‑R*  to develop a Recommendation describing these certificates,  *instructs the Secretary-General*  to bring this Resolution to the attention of the International Maritime Organization (IMO). | − | 2  AND  4 |
| **344 (Rev.WRC-19)** | Management of the maritime identity numbering resource | *noting further*  *a)* that the ITU Radiocommunication Sector (ITU-R) is solely responsible for managing the MMSI and MID numbering resources;  *b)* that ITU-R can monitor the status of the MMSI resource, through regular reviews of the spare capacity available within the MIDs already in use, and the availability of spare MIDs, taking account of regional variations;  *c)* that ITU-R, as a part of the review of MMSI numbering resources, adopted a revision of Recommendation ITU-R M.585 in 2019, removing a provision within the MMSI numbering scheme that set aside three trailing zeros for some categories of mobile-satellite service systems participating in the GMDSS to facilitate the shore-to-ship routing of calls; the provision is no longer necessary and its removal has allowed for the release of reserved MMSI numbering resources,  *resolves to instruct the Director of the Radiocommunication Bureau*  1 to manage allotment and distribution of the MID resource within the MMSI and other maritime identity numbering formats, taking into account:  – Sections II, V and VI of Article **19**;  – regional variations in MMSI use;  – spare capacity within the MID resource; and  – the assignment, management and conservation of maritime identities contained in the most recent version of Recommendation ITU-R M.585, in particular as regards the reuse of MMSIs;  2 to report to each world radiocommunication conference on the use and status of the MMSI resource, noting in particular the anticipated reserve capacity and any indications of rapid exhaustion of the resource,  *invites the ITU Radiocommunication Sector*  to keep under review the Recommendations for assigning MMSIs and other maritime identities, with a view to:  – improving the management of the MID, MMSI and other maritime identity resources; and  – identifying alternative resources if there is an indication of rapid exhaustion of these resources,  *instructs the Secretary-General*  to communicate this Resolution to the International Maritime Organization. | − | 2  AND  3  AND  4 |
| **349 (Rev.WRC-19)** | Operational procedures for cancelling false distress alerts in the Global Maritime Distress and Safety System | *resolves*  1 to urge administrations to take all necessary measures to avoid false distress alerts and to minimize the unnecessary burden on rescue organizations which occurs;  2 to urge administrations to encourage the correct use of GMDSS equipment, with particular attention to appropriate training;  3 to urge administrations to implement the operational procedures contained in the Annex to this Resolution;  4 that administrations should take any consequential appropriate action in this respect,  *instructs the Secretary-General*  to bring this Resolution to the attention of IMO. | − | 3  AND  4 |
| **352 (WRC-03)** | Use of the carrier frequencies 12 290 kHz and 16 420 kHz for safety-related calling to and from rescue coordination centres | *resolves*  1 that the carrier frequencies 12 290 kHz and 16 420 kHz be used only for distress, urgency and safety communications, and safety-related calling limited to that to and from rescue coordination centres;  2 that safety-related calling be initiated only after determination that other communications are not present on these frequencies;  3 that safety-related calling be minimized and not cause interference to distress, urgency and safety communications,  *invites administrations*  to encourage the coast and ship stations under their jurisdiction to use digital selective calling techniques,  *instructs the Secretary-General*  to bring this Resolution to the attention of the IMO. | − | 3  AND  4 |
| **354 (WRC‑07)** | Distress and safety radiotelephony procedures for 2 182 kHz | *resolves*  1 that ships, when in distress or when engaged in urgency or safety-related communications on 2 182 kHz, use the radiotelephony procedures contained in the Annex to this Resolution;  2 that coast stations, in order to maintain communication with non-GMDSS ships that are in distress or engaged in urgency or safety related communications on 2 182 kHz, use the radiotelephony procedures contained in the Annex to this Resolution. | - | 3 |
| **356 (Rev.WRC-19)** | ITU maritime service information registration | *resolves to instruct the Director of the Radiocommunication Bureau*  to maintain online information systems to allow rescue coordination centres to have immediate access to this information on a 24-hour per day, 7-day per week basis,  *invites the ITU Radiocommunication Sector*  to consult on a regular basis with administrations, IMO, the International Civil Aviation Organization (ICAO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) and the International Hydrographic Organization (IHO) to identify elements for incorporation in ITU online information systems,  *instructs the Secretary-General*  to communicate this Resolution to IMO, ICAO, IALA and IHO. | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2  AND  3  AND  4 |
| **361 (Rev.WRC-19)** | Consideration of possible regulatory actions to support modernization of the Global Maritime Distress and Safety System and the implementation of e-navigation | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **363 (WRC-19)** | Considerations to improve utilization of the VHF maritime frequencies in Appendix 18 | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **405 (WARC-79)** | Relating to the use of frequencies of the aeronautical mobile (R) service | *resolves*  that administrations, individually or in collaboration, take the necessary steps:  1 to make as great a use as possible of higher frequencies in order to lessen the load on the HF aeronautical mobile (R) bands;  2 to make as great a use as possible of antennas of appropriate directivity and efficiency in order to minimize the possibilities of mutual interference within an area or between areas;  3 to coordinate the use of families of frequencies necessary for a given route segment in accordance with the technical principles in Appendix **27** and in the light of the propagation data available, to ensure that the most appropriate frequencies are used with an aircraft at a given distance from the aeronautical station providing service over the route segment concerned;  4 to improve operating techniques and procedures and to use equipment which will make it possible to attain the highest possible efficiency in handling air-ground HF communications;  5 to collect precise data on the operation of their HF communication systems, particularly data having a bearing on technical and operating standards, so as to facilitate re-examination of the Plan;  6 to establish, through regional arrangements, the best method of providing the communications required for any new long-distance international or regional air operation which is not or cannot be accommodated within the system of MWARA and RDARA, in such a manner as not to cause harmful interference to the utilization of frequencies as prescribed in the Plan. | − | 6 |
| **413 (Rev.WRC-12)** | Use of the band 108-117.975 MHz by the aeronautical mobile (R) service | *resolves*  …  *invites ITU‑R*  to study any compatibility issues between the broadcasting service and AM(R)S in the band 108‑117.975 MHz that may arise from the introduction of appropriate digital sound broadcasting systems, described in Recommendation ITU‑R BS.1114,and to develop new or revised ITU‑R Recommendations as appropriate,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO. | - | 2  AND  3  AND  4 |
| **416 (WRC‑07)** | Use of the bands 4 400-4 940 MHz and 5 925-6 700 MHz by an aeronautical mobile telemetry application in the mobile service | considering  …  *b)* that studies have been conducted within ITU‑R concerning the sharing and compatibility of AMT for flight testing with other services in the bands 4 400-4 940 MHz and 5 925-6 700 MHz;  *c)* that based on the results of these studies, in the bands 4 400-4 940 MHz and 5 925‑6 700 MHz, technical and operational measures applied to AMT for flight testing purposes facilitate sharing with other services and applications in these bands;  *resolves*  1 that, in the bands 4 400-4 940 MHz and 5 925-6 700 MHz, administrations authorizing AMT for flight test purposes per Nos **5.440A**, **5.442** and **5.457C** shall utilize the criteria set forth below:  … | − | 3 |
| **417 (Rev.WRC‑15)** | Use of the frequency band 960‑1 164 MHz by the aeronautical mobile (R) service | resolves  1 that any AM(R)S system operating in the frequency band 960-1 164 MHz shall meet SARPs requirements published in Annex 10 to the Convention on International Civil Aviation;  …  instructs the Secretary-General  to bring this Resolution to the attention of ICAO. | − | 3  AND  4 |
| **418 (Rev.WRC-19)** | Use of the frequency band 5 091‑5 250 MHz by the aeronautical mobile service for telemetry applications | resolves  1 that administrations choosing to implement AMT shall limit AMT applications to those identified in noting h) in the frequency band 5 091-5 250 MHz, and shall utilize the criteria set forth in the Annex to this Resolution;  2 that the power flux-density limits in §§ 3 and 4 of the Annex to this Resolution which protect terrestrial services may be exceeded on the territory of any country whose administration has so agreed. | − | 3 |
| **422 (WRC‑12)** | Development of methodology to calculate aeronautical mobile-satellite (R) service spectrum requirements within the frequency bands 1 545-1 555 MHz (space-to-Earth) and 1 646.5-1 656.5 MHz (Earth-to-space) | resolves to invite ITU‑R  to conduct studies on, and develop in one or more ITU‑R Recommendations, a methodology, including clear definitions of input parameters and assumptions to be used, to calculate spectrum requirements within the frequency bands 1 545‑1 555 MHz (space‑to‑Earth) and 1 646.5‑1 656.5 MHz (Earth-to-space) for AMS(R)S communications related to the priority categories 1 to 6 of Article **44**, and to take into account *considering b)* in conducting these studies,  invites  ICAO, the International Air Transport Association (IATA), administrations and other concerned organizations to participate in the studies identified in *resolves* above,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  4 |
| **424** **(WRC-15)** | Use of Wireless Avionics Intra-Communications in the frequency band 4 200-4 400 MHz | *resolves*  …  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO,  *invites the International Civil Aviation Organization*  to take into account Recommendation ITU-R M.2085 in the course of development of SARPs for WAIC systems. | − | 3  AND  4 |
| **425 (Rev.WRC-19)** | Use of the frequency band 1 087.7‑1 092.3 MHz by the aeronautical mobile-satellite (R) service (Earth-to-space) to facilitate global flight tracking for civil aviation | resolves  1 that the use of the frequency band 1 087.7-1 092.3 MHz by AMS(R)S systems shall be in accordance with recognized international aeronautical standards;  2 that AMS(R)S systems (Earth-to-space) in the frequency band 1 087.7-1 092.3 MHz shall be designed so that they can operate in the interference environment as described in *considering c)*;  3 that, taking into account *resolves* 2, AMS(R)S use of the frequency band 1 087.7‑1 092.3 MHz shall not constrain administrations which have responsibilities as referred to in *considering h)*,  instructs the Secretary-General  to bring this Resolution to the attention of ICAO. | − | 3  AND  4 |
| **427 (WRC-19)** | Updating provisions related to aeronautical services in the Radio Regulations | *resolves to invite the ITU Radiocommunication Sector*  to study the Articles, limited to Chapters IV, V, VI and VIII of Volume I, of the Radio Regulations and their associated Appendices, as appropriate, in order to identify outdated aeronautical provisions with respect to ICAO standards and recommended practices and to develop examples of regulatory texts for updating these provisions, while ensuring that potential changes to such provisions will not impact any other systems or services operating in accordance with the Radio Regulations,  *invites administrations and Sector Members*  to participate actively in the studies by submitting contributions to the ITU Radiocommunication Sector (ITU-R),  *instructs the Director of the Radiocommunication Bureau*  to include in the Report of the Director to WRC-23 the progress on the ITU-R studies referred to in *resolves to invite the ITU Radiocommunication Sector*,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO. | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 2  AND  3  AND  4 |
| **428 (WRC-19)** | Studies on a possible new allocation to the aeronautical mobile-satellite (R) service within the frequency band 117.975‑137 MHz in order to support aeronautical VHF communications in the Earth-to-space and space-to-Earth directions | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **429 (WRC-19)** | Consideration of regulatory provisions for updating Appendix 27 of the Radio Regulations in support of aeronautical HF modernization | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **430 (WRC-19)** | Studies on frequency-related matters, including possible additional allocations, for the possible introduction of new non-safety aeronautical mobile applications | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **506 (Rev.WRC-97)** | Use by space stations in the broadcasting-satellite service operating in the 12 GHz frequency bands allocated to the broadcasting-satellite service of the geostationary-satellite orbit and no other | *resolves*  that administrations shall ensure that their space stations in the broadcasting-satellite service in these frequency bands are operated in the geostationary-satellite orbit and no other. | − | 6 |
| **507 (Rev.WRC-19)** | Establishment of agreements and associated plans for the broadcasting-satellite service\*  \_\_\_\_\_\_\_\_\_  \*This Resolution does not apply to the frequency band 21.4-22 GHz. | *resolves*  1 that stations in the BSS shall be established and operated in accordance with agreements and associated plans adopted by world (WRCs) or regional (RRCs) radiocommunication conferences, as the case may be, in which all the administrations concerned and the administrations whose services are liable to be affected may participate;  2 that, during the period before the entry into force of such agreements and associated plans, the administrations and the Radiocommunication Bureau shall apply the procedure contained in Articles **9** to **14**,  *invites the ITU Council*  to keep under review the question of WRCs, and/or RRCs, as required, with a view to fixing suitable dates, places and agendas. | − | 3  AND  5 |
| **517 (Rev.WRC-19)** | Introduction of digitally modulated emissions in the high-frequency bands between 3 200 kHz and 26‑100 kHz allocated to the broadcasting service | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  to compile and provide to the future competent WRC referred to in *resolves* 4 the latest available complete statistics on the worldwide distribution of digital HF broadcasting receivers and transmitters,  *invites the ITU Radiocommunication Sector*  to continue its studies on digital techniques in HF broadcasting with a view to assisting in the development of this technology for future use,  *invites administrations*  to encourage the inclusion in all new HF broadcasting transmitters put into service after 1 January 2004 of the capability to offer digital modulation,  *further invites administrations*  1 to assist the Director of the Radiocommunication Bureau by providing the relevant statistical data and to participate in ITU-R studies on matters relating to the development and introduction of digitally modulated emissions in the HF bands between 3 200 kHz and 26 100 kHz allocated to the broadcasting service;  2 to bring to the notice of transmitter and receiver manufacturers the recent results of relevant ITU-R studies on spectrum-efficient modulation techniques suitable for use at HF as well as the information referred to in *considering d)* and *e)*, and encourage the availability of affordable low-cost digital receivers. | See Doc. [6/1](https://www.itu.int/md/R19-SG06-C-0001/en) | 2  AND  3 |
| **526 (Rev.WRC‑12)** | Future adoption of procedures to ensure flexibility in the use of the frequency band allocated to the broadcasting-satellite service (BSS) for wide RF-band high-definition television (HDTV) and to the associated feeder links | *resolves to invite ITU‑R*  to study the development of future regulatory provisions for BSS (HDTV) to ensure flexibility in the use of the band 17.3-17.8 GHz in Region 2, having regard to the interests of all countries and the state of technical development of this new service,  *instructs the Secretary-General*  to bring this Resolution to the attention of the Council with a view to placing an appropriate item on the agenda of a future world radiocommunication conference. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  5 |
| **528 (Rev.WRC-19)** | Introduction of broadcasting-satellite service (sound) systems and complementary terrestrial broadcasting in the frequency bands allocated to these services within the frequency range 1‑3 GHz | *resolves*  1 that a competent conference should be convened for the planning of the BSS (sound) in the frequency bands allocated to this service in the frequency range 1-3 GHz and the development of procedures for the coordinated use of complementary terrestrial broadcasting;  2 that that conference should review criteria for sharing with other services;  3 that, in the interim period, broadcasting-satellite systems may only be introduced within the upper 25 MHz of the appropriate frequency band in accordance with the procedures contained in Articles **9** to **14**, as appropriate; the complementary terrestrial service may be introduced during this interim period subject to coordination with administrations whose services may be affected;  4 that the calculation methods and the interference criteria to be employed in evaluating the interference should be based upon relevant ITU-R Recommendations agreed by the administrations concerned as a result of Resolution **703 (Rev.WRC-07)** or otherwise,  *invites the ITU Radiocommunication Sector*  to conduct the necessary studies prior to the conference,  *instructs the Secretary-General*  to bring this Resolution to the attention of the ITU Council to consider including in the agenda of a radiocommunication conference the matters addressed above. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  5 |
| **535 (Rev.WRC-19)** | Information needed for the application of Article 12 of the Radio Regulations | *resolves to instruct the Director of the Radiocommunication Bureau*  to consider improvements to the established arrangements for the preparation, publication and dissemination of the information relating to the application of Article **12**, in consultation with administrations and regional coordination groups,  *invites administrations*  to submit their schedules in a common electronic format,  *instructs the Secretary-General*  to consider provision of the necessary funding to enable developing countries to participate fully in the application of Article **12** and relevant radiocommunication seminars. | − | 3 |
| **536 (WRC-97)** | Operation of broadcasting satellites serving other countries | *resolves*  that, in addition to observing No. **23.13**, and before providing satellite broadcasting services to other administrations, administrations originating the services should obtain the agreement of those other administrations. | − | 6 |
| **539 (Rev.WRC-19)** | Use of the frequency band 2 605‑2 655 MHz in certain Region 3 countries by non-geostationary-satellite systems in the broadcasting-satellite service (sound) | *resolves*  1 that any BSS (sound) system using non-GSO orbits brought into operation in the frequency band 2 605‑2 655 MHz in Region 3 shall be operated such that the minimum elevation angle over the service area is not less than 55 degrees, for the purposes of sharing with terrestrial services;  2 that, before an administration notifies to the Radiocommunication Bureau (BR) or brings into use a frequency assignment for a BSS (sound) system using non-GSO satellites in the frequency band 2 630‑2 655 MHz for which complete Appendix **4** coordination information or notification information has been received after 2 June 2000, and in the frequency band 2 605-2 630 MHz for which complete Appendix **4** coordination information or notification information has been received after 4 July 2003, the following regulatory arrangements shall apply:  The following mask of power flux-density (pfd) values at the Earth’s surface produced by emissions from a space station for all conditions and for all methods of modulation shall be used as the basis of the regulatory procedures of this Resolution:  …  These values relate to the pfd and angles of arrival which would be obtained under free-space propagation conditions.  Furthermore:  – for angles of arrival of less than 76° in the pfd mask above, if the limits are exceeded, the notifying administration shall obtain explicit agreement from any administration identified by BR in its examination below;  – for angles of arrival from 76° to 90° in the pfd mask above, the coordination procedure with respect to those administrations identified by BR in its examination below will be that of No. **9.11**;  3 that systems in the BSS (sound) using non-GSO satellites shall be limited to national services unless agreement has been reached to include the territories of other administrations in the service area;  4 that, within the context of this Resolution, an administration listed in No. **5.418** shall not have simultaneously two overlapping frequency assignments, one under that provision, and the other one under No. **5.416**;  5 that, as from 5 July 2003, BR and administrations shall apply the provisions of Articles **9** and **11** taking into account Nos. **5.418**, **5.418A**, **5.418B**, **5.418C** and this Resolution, as revised by WRC-03,  *instructs the Radiocommunication Bureau*  1 when applying *resolves* 2, to use the pfd mask in *resolves* 2; and  – for angles of arrival of less than 76°, identify the affected administrations which have a primary allocation to terrestrial services in the same frequency band and on whose territory the pfd is exceeded, and inform both the notifying and the affected administrations; at the notification stage, the lack of any necessary agreement is considered as non-conformity with No. **11.31**;  – for angles of arrival from 76° to 90°, identify the affected administrations which have a primary allocation to terrestrial services in the same frequency band and on whose territory the pfd is exceeded; and inform both the notifying and the affected administrations; at the notification stage, each notice shall be examined in the application of No. **11.32** and, if appropriate, under No. **11.32A** with respect to the probability of harmful interference that may be caused to assignments for which coordination could not be successfully completed;  2 as from 5 July 2003, to apply *resolves* 5 in its examination of requests for coordination and notifications for any BSS (sound) systems using non-GSO satellites in the frequency band 2 630-2 655 MHz for which complete Appendix **4** coordination information or notification information has been received after 2 June 2000. | − | 3 |
| **543 (Rev.WRC-19)** | Provisional RF protection ratio values for analogue and digitally modulated emissions in the high-frequency broadcasting service | *resolves*  1 that digital modulation in accordance with Resolution **517 (Rev.WRC-19)** may be used in any of the HF bands allocated to the broadcasting service; this accommodation has to be made with the appropriate amounts of protection given to both analogue and digital emissions as described in the Annex to this Resolution;  2 that the protection ratio values described in the Annex be used in the coordination process under Article **12** on a provisional basis;  3 to invite a future competent conference to revise these provisional protection ratio values, as appropriate,  *invites the ITU Radiocommunication Sector*  to continue studies on digital techniques in HF broadcasting with the purpose of revising the RF protection ratio values for analogue and digitally modulated emissions in the HF broadcasting service as described in the Annex to this Resolution. | See Doc. [6/1](https://www.itu.int/md/R19-SG06-C-0001/en) | 2  AND  3  AND  5 |
| **548 (Rev.WRC-12)** | Application of the grouping concept in Appendices 30 and 30A in Regions 1 and 3 | *resolves*  …  5 that, as from 5 July 2003, in the processing and publication by the Bureau of submissions relating to Regions 1 and 3 under Article 4 of Appendix **30** or **30A** received after 2 June 2000 and the identification of affected administrations in accordance with § 4.1.5, each network in a group is examined separately, without taking into account the other networks in the group. | − | 3 |
| **550 (Rev.WRC-19)** | Information relating to the high-frequency broadcasting service | *resolves to invite the ITU Radiocommunication Sector*  to continue studies on HF broadcasting, taking into account:  – technical and operational factors;  – digital transmissions, including how the introduction of these emissions will affect HF broadcasting requirements and operations,  *invites administrations and Sector Members*  to participate actively in the aforementioned studies by submitting contributions to ITU-R. | See Doc. [6/1](https://www.itu.int/md/R19-SG06-C-0001/en) | 2 |
| **552 (Rev.WRC-19)** | Long-term access to and development in the frequency band 21.4-22 GHz in Regions 1 and 3 | *resolves*  1 that this Resolution applies to GSO networks in the BSS in the frequency band 21.4-22 GHz;  2 that, for frequency assignments to satellite networks as described in *resolves* 1 for which confirmation of the date of bringing into use under the provisions of Article **11** was not received by the Radiocommunication Bureau (BR) before 18 February 2012 or which were suspended under No. **11.49** at that date, the procedure contained in Annex 1 to this Resolution shall be applied at the time of first bringing into use or when resuming use after a suspension, as appropriate;  3 that, for frequency assignments to satellite networks as described in *resolves* 1 for which confirmation of the date of bringing into use under the provisions of Article **11** was received by BR before 18 February 2012, the provisions of §§ 5 to 8 of Annex 1 to this Resolution shall be applied, as appropriate,  *further resolves*  that the procedures in this Resolution are in addition to the provisions under Articles **9** and **11** of the Radio Regulations,  *instructs the Director of the Radiocommunication Bureau*  to include in his report to future competent world radiocommunication conferences the results of the implementation of this Resolution. | − | 3 |
| **553 (Rev.WRC-15)** | Additional regulatory measures for broadcasting-satellite networks in the frequency band and 21.4‑22 GHz in Regions 1 and 3 for the enhancement of equitable access to this frequency band | *resolves*  that as of 18 February 2012, the special procedure outlined in the Attachment to this Resolution for processing of coordination requests for BSS frequency assignments in Regions 1 and 3 in the frequency band 21.4-22 GHz shall be applied in respect of submissions of administrations meeting the specified requirements in the Attachment. | − | 3 |
| **554 (WRC‑12)** | Application of pfd masks to coordination under No. 9.7 for broadcasting-satellite service networks in the band 21.4-22 GHz in Regions 1 and 3 | *resolves*  1 that coordination of assignments for a broadcasting-satellite service (BSS) space station  in Regions 1 and 3 in the 21.4-22 GHz band with respect to other BSS networks is not required if the  pfd produced under assumed free space propagation conditions, does not exceed the threshold values  shown below, anywhere within the service area of the potentially affected assignment:  …  2 that when the Bureau, under No. **11.32**, conducts its examination of notifications of satellite networks in respect of compliance with the coordination procedures, it shall base its findings on the coordination requirements set by No. **9.7** in Table **5-1** of Appendix **5** as revised by WRC-12 for those networks received under No. **9.30** before 18 February 2012. | − | 3 |
| **558 (WRC-19)** | Protection of implemented broadcasting-satellite service networks in the orbital arc of the geostationary-satellite orbit between 37.2° W and 10° E in the frequency band 11.7-12.2 GHz | *resolves*  1 that this Resolution is applicable only to implemented1 networks with an earth station receiving antenna diameter smaller than 60 cm (40 cm and 45 cm) as outlined in Annex 1 to this Resolution;  2 that frequency assignments associated with an earth station receiving antenna diameter of 40 cm or 45 cm in the networks mentioned in *resolves* 1 above are considered by the Radiocommunication Bureau (BR) as being affected by a proposed new or modified assignment in the List filed at the GSO orbital positions mentioned in Annex 1 to this Resolution, only if the following conditions specified in Annex 1 to Appendix **30** are met:  – the minimum orbital spacing between the wanted and interfering space stations, under worst-case station-keeping conditions, is less than 9°;  – the reference equivalent downlink protection margin corresponding to at least one of the test points of that wanted assignment, including the cumulative effect of any previous modification to the List or any previous agreement, falls more than 0.45 dB below 0 dB, or, if already negative, more than 0.45 dB below that reference equivalent protection margin value;  3 that, for cases when a proposed new assignment in the List is filed within the GSO orbital arc between 37.2° W and 10° E in orbital arc segments that differ from those in Annex 1 to this Resolution, appropriate provisions of Annex 1 to Appendix **30** to determine the need for coordination continue to be applied with respect to relevant frequency assignments of the satellite networks mentioned in *resolves* 1. | − | 3 |
| **559 (WRC-19)** | Additional temporary regulatory measures following the deletion of part of Annex 7 to Appendix 30 (Rev.WRC-15) by WRC-19 | *resolves*  …  *instructs the Director of the Radiocommunication Bureau*  1 to identify the administrations that meet the conditions of § 1 of the Attachment to this Resolution and inform these administrations accordingly;  2 at the request of administrations identified in *instructs the Director of the Radiocommunication Bureau* 1 which have the intention to apply the procedure indicated in this Resolution, to assist and advise them in complying with the conditions described in the Attachment to this Resolution, including the identification of appropriate new orbital positions and frequency channels. | − | 3 |
| **608 (Rev.WRC-19)** | Use of the frequency band 1 215‑1 300 MHz by systems of the radionavigation-satellite service (space-to-Earth) | *recognizing*  *a)* that the ITU Radiocommunication Bureau (ITU-R) carried out studies related to the protection of the radiodetermination systems operating in the frequency band 1 215-1 300 MHz and that these studies should continue pursuant to relevant ITU-R Questions, such as Questions ITU-R 62/5 and ITU-R 217/4, so as to prepare, as appropriate, ITU-R Recommendations;  *b)* that, up to the end of WRC-2000, use of the RNSS in the frequency band 1 215-1 260 MHz was subject only to the constraint that no harmful interference was caused to the radionavigation service in Algeria, Germany, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Burundi, Cameroon, China, Croatia, Denmark, United Arab Emirates, France, Greece, India, Iran (Islamic Republic of), Iraq, Kenya, Liechtenstein, Luxembourg, North Macedonia, Mali, Mauritania, Norway, Oman, Pakistan, Netherlands, Portugal, Qatar, Serbia and Montenegro\*, Senegal, Slovenia, Somalia, Sudan\*\*, Sri Lanka, Sweden, Switzerland and Turkey, and, furthermore, that No. **5.43** was applied  *resolves*  that no constraints in addition to those in place prior to WRC-2000 (see *recognizing b)*) shall be placed on the use of RNSS (space-to-Earth) frequency assignments in the frequency band 1 215-1 260 MHz brought into use until 2 June 2000,  *instructs the Secretary-General*  to communicate the contents of this Resolution to the International Civil Aviation Organization (ICAO) for such actions as it may consider appropriate, and to invite ICAO to participate actively in the study activity identified under *recognizing a)*. | − | 3  AND  4 |
| **609 (Rev.WRC-07)** | Protection of aeronautical radionavigation service systems from the equivalent power flux-density produced by radionavigation-satellite service networks and systems in the 1 164-1 215 MHz frequency band | *resolves*  1 that in order to protect ARNS systems, administrations shall ensure, pursuant to this Resolution, that the epfd level produced by all space stations of all RNSS systems does not exceed the level −121.5 dB(W/m2) in any 1 MHz band  …  *instructs the Radiocommunication Bureau*  1 to participate in consultation meetings mentioned under *resolves*6 and to observe carefully results of the epfd calculation mentioned in *resolves*1;  2 to determine whether the pfd level in *recommends* 1 of Recommendation **608 (Rev.WRC‑07)** is exceeded by any subject space station, and to report the findings of this determination to the participants in the consultation meeting;  3 to publish in the International Frequency Information Circular (BR IFIC), the information referred to in *resolves*8 and *instructs the Radiocommunication Bureau*2,  *invites the Radiocommunication Bureau*  to examine the possibility, if needed, of developing software that can be used to calculate the epfd level mentioned under *resolves*1,  *invites administrations*  1 to deal with RNSS intersystem matters, as required, as early as possible;  2 to provide the Bureau and all participants in the consultation meeting with access to appropriate software used to calculate the epfd level mentioned under *resolves*1. | − | 3 |
| **610 (Rev.WRC-19)** | Coordination and bilateral resolution of technical compatibility issues for radionavigation-satellite service networks and systems in the frequency bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010‑5 030 MHz | *instructs the Radiocommunication Bureau*  to provide, on request, assistance to administrations operating or planning to operate RNSS systems in the frequency bands mentioned in *considering a)* above, which systems are not subject to coordination under Section II of Article **9**, in securing bilateral agreements with other RNSS systems as early as possible. | − | 3 |
| **612 (Rev.WRC-12)** | Use of the radiolocation service between 3 and 50 MHz to support oceanographic radar operations | *resolves*  1 that, when oceanographic radars are brought into use after 17 February 2012 and notified to the Bureau, the notification shall be in accordance with No. **11.2** of the Radio Regulations and shall contain the station identification (call sign);  … | − | 3 |
| **642 (WARC-79)** | Relating to the bringing into use of earth stations in the amateur-satellite service | *resolves*  1 that when an administration (or one acting on behalf of a group of named administrations) intends to establish a satellite system in the amateur-satellite service and wishes to publish information with respect to earth stations in that system it may:  1.1 communicate to the Radiocommunication Bureau all or part of the information listed in Appendix **4**; the Bureau shall publish such information in a Special Section of its BR IFIC requesting comments to be communicated within a period of four months after the date of publication;  1.2 notify under Nos. **11.2** to **11.8** all or part of the information listed in Appendix **4**; the Bureau shall record it in a special list;  2 that this information shall include at least the characteristics of a typical amateur earth station in the amateur-satellite service having the facility to transmit signals to the space station to initiate, modify, or terminate the functions of the space station. | − | 3 |
| **646 (Rev.WRC-19)** | Public protection and disaster relief | *resolves*  …  *invites the ITU Radiocommunication Sector*  1 to continue its technical studies and to make recommendations concerning technical and operational implementation, as necessary, to meet the needs of PPDR radiocommunication applications, taking into account the capabilities, evolution and any resulting transition requirements of the existing systems, particularly those of many developing countries, for national and international operations;  2 to review and revise Recommendation ITU-R M.2015 and other relevant ITU-R Recommendations and Reports, as appropriate. | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2 |
| **647 (Rev.WRC-19)** | Radiocommunication aspects, including spectrum-management guidelines, for early warning, disaster prediction, detection, mitigation and relief operations relating to emergencies and disasters | *resolves*  1 that ITU-R continue through its study groups to study those aspects of radiocommunications/ICTs that are relevant to early warning, disaster prediction, detection, mitigation and relief operations, taking into account Resolution ITU-R 55;  2 to encourage administrations to communicate to BR the relevant up-to-date administration contact information and, where available, the frequencies or frequency bands for use in emergency and disaster-relief operations;  3 to reiterate to administrations the importance of having up-to-date information referred to in *resolves* 2 above available for use in the very early stages of humanitarian assistance intervention for disaster relief,  *instructs the Director of the Radiocommunication Bureau*  1 to support administrations in their work towards the implementation of Resolution 136 (Rev. Dubai, 2018), as well as the Tampere Convention;  2 to coordinate activities between this Resolution and Resolution **646 (Rev.WRC‑19)** in order to minimize possible overlap;  3 to continue to assist Member States with their emergency communication preparedness activities by maintaining the database3 of information from administrations for use in emergency situations, which includes contact information and optionally includes available frequencies;  4 to facilitate online access to the database by administrations, national regulatory authorities, disaster-relief agencies and organizations, in particular the United Nations Emergency Relief Coordinator, in accordance with the operating procedures developed for disaster situations;  5 to collaborate with the United Nations Office for the Coordination of Humanitarian Affairs and other organizations, as appropriate, in the development and dissemination of standard operating procedures and relevant spectrum-management practices for use in the event of a disaster situation;  6 to collaborate, as appropriate, with the United Nations Working Group on Emergency Telecommunications (WGET) and the radio frequency and radio standards group under the UN Emergency Telecommunications Cluster (ETC) for which the World Food Programme (WFP) is the cluster lead;  7 to take into consideration, and collaborate in, as appropriate, all relevant activities in ITU’s other two Sectors and General Secretariat;  8 to report on progress on this Resolution to subsequent world radiocommunication conferences,  *invites the ITU Radiocommunication Sector*  to continue conducting studies as necessary, in accordance with *resolves* 1 and in support of developing and maintaining appropriate spectrum-management guidelines applicable in emergency and disaster-relief operations,  *invites the Director of the Telecommunication Standardization Bureau and the Director of the Telecommunication Development Bureau*  to collaborate closely with the Director of the Radiocommunication Bureau (BR) to ensure that a consistent and coherent approach is adopted in the development of strategies in response to emergency and disaster situations,  *urges administrations*  to participate in the emergency communication preparedness activities described above and to provide to BR their information and, in particular, up-to-date contact information related to emergency and disaster-relief radiocommunications for inclusion in the database, taking into account Resolution ITU-R 55. | See Doc. [1/1](https://www.itu.int/md/R19-SG01-C-0001/en) See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  4 |
| **655 (WRC-15)** | Definition of time scale and dissemination of time signals via radiocommunication systems | *resolves to invite the ITU Radiocommunication Sector*  1 to strengthen the cooperation between ITU‑R and BIPM, the International Committee for Weights and Measures (CIPM), CGPM, as well as other relevant organizations, and to carry out a dialogue concerning the expertise of each organization;  2 to further and more widely study in cooperation with the relevant international organizations, concerned industries and user groups, through the participation of the membership, the various aspects of current and potential future reference time scales, including their impacts and applications;  3 to provide advice on the content and structure of time signals to be disseminated by radiocommunication systems, using the combined expertise of the relevant organizations;  4 to prepare one or more reports containing the results of studies that should include one or more proposals to determine the reference time scale and address other issues mentioned in 1, 2 and 3 above,  *resolves*  that until WRC‑23, UTC as described in Recommendation ITU‑R TF.460‑6 shall continue to apply, and for most practical purposes associated with the Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in GMT,  *instructs the Director of the Radiocommunication Bureau*  1 to invite the relevant international organizations such as the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO), CGPM, CIPM, BIPM, the International Earth Rotation and Reference Systems Service (IERS), the International Union of Geodesy and Geophysics (IUGG), the International Union of Radio Science (URSI), the International Organization for Standardization (ISO), the World Meteorological Organization (WMO) and the International Astronomical Union (IAU) to participate in the work mentioned in *resolves to invite the ITU Radiocommunication Sector*;  2 to report on the progress of this Resolution to WRC‑23,  *invites the Director of the Telecommunication Development Bureau*  to assist the participation of developing countries in meetings, within approved budgetary resources,  *invites administrations*  to participate in the studies by submitting contributions to ITU-R,  *instructs the Secretary-General*  to bring this Resolution to the attention of IMO, ICAO, CGPM, CIPM, BIPM, IERS, IUGG, URSI, ISO, WMO and IAU. | See Doc. [7/1](https://www.itu.int/md/R19-SG07-C-0001/en) | 2  AND  3  AND  4 |
| **656 (Rev.WRC-19)** | Possible secondary allocation to the Earth exploration-satellite service (active) for spaceborne radar sounders in the range of frequencies around 45 MHz | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **657 (Rev.WRC-19)** | Protection of radio spectrum-reliant space weather sensors used for global prediction and warnings | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **660 (WRC-19)** | Use of the frequency band 137‑138 MHz by non-geostationary satellites with short‑duration missions in the space operation service | *resolves*  1 that the use of the SOS (space-to-Earth) for non-GSO systems with short-duration missions in the frequency range 137-138 MHz shall be limited to the frequency band 137.025-138 MHz;  2 that, in the frequency band 137.025-138 MHz, the power flux-density at any point on the Earth’s surface produced by a space station of non-GSO SOS systems used for short-duration missions in accordance with Appendix **4** shall not exceed −140 dB(W/(m2 · 4 kHz));  3 that administrations wishing to implement the SOS (space-to-Earth) in the frequency band 137.025-138 MHz by means of non-GSO systems for short-duration missions shall ensure compliance with *considering d)*,  *invites the ITU Radiocommunication Sector*  to conduct, as a matter of urgency, relevant studies of technical, operational and regulatory aspects in relation to the implementation of this Resolution,  *instructs the Director of the Radiocommunication Bureau*  to present to the next world radiocommunication conference a progress report relating to the implementation of this Resolution. | See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 2  AND  3 |
| **661 (WRC-19)** | Examination of a possible upgrade to primary status of the secondary allocation to the space research service in the frequency band 14.8‑15.35 GHz | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **662 (WRC-19)** | Review of frequency allocations for the Earth exploration-satellite service (passive) in the frequency range 231.5‑252 GHz and consideration of possible adjustment according to observation requirements of passive microwave sensors | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **663 (WRC-19)** | New allocations for the radiolocation service in the frequency band 231.5‑275 GHz, and a new identification for radiolocation service applications in frequency bands in the frequency range 275-700 GHz | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **664 (WRC-19)** | Use of the frequency band 22.55‑23.15 GHz by the Earth exploration-satellite service (Earth-to-space) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **673 (Rev.WRC‑12)** | The importance of Earth observation radiocommunication applications | *resolves*  1 to continue to recognize that the use of spectrum by Earth observation applications has a considerable societal and economic value;  2 to urge administrations to take into account Earth observation radio-frequency requirements and in particular protection of the Earth observation systems in the related frequency bands;  3 to encourage administrations to consider the importance of the use and availability of spectrum for Earth observation applications prior to taking decisions that would negatively impact the operation of these applications. | − | 6 |
| **703 (Rev.WRC-07)** | Calculation methods and interference criteria recommended by ITU-R for sharing frequency bands between space radiocommunication and terrestrial radiocommunication services or between space radiocommunication services | *invites administrations*  to submit contributions to the Radiocommunication Study Groups, providing information on practical results and experience of sharing between terrestrial and space radiocommunication services or between space services, which help to bring about significant improvements in coordination procedures, calculation methods and harmful interference thresholds, and thereby to optimize the available orbit/spectrum resources,  *resolves*  1 that the Director of the Radiocommunication Bureau, in consultation with Study Group Chairmen, shall annually prepare a list identifying the relevant newly approved ITU‑R Recommendations relating to sharing between space radiocommunication and terrestrial radiocommunication services, or between space radiocommunication services;  2 that the Director of the Radiocommunication Bureau shall, once a year, publish this list electronically for the information of all administrations. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 3 |
| **705 (Rev.WRC-15)** | Mutual protection of radio services operating in the frequency band 70-130 kHz | *resolves that administrations*  1 in assigning frequencies to services in the frequency bands 70-90 kHz, 90‑110 kHz and 110-130 kHz, consider the potential mutual impairment to other stations operating in accordance with the Table of Frequency Allocations and apply protective measures;  2 use the relevant ITU‑R Recommendations and encourage the exchange of information between authorities operating radionavigation systems in the frequency band 90-110 kHz and those operating other systems in the frequency band 70‑130 kHz employing emissions of very high stability, to assist in preventing potential interference problems;  3 encourage consultation, both nationally and internationally, between operators of radionavigation systems using the frequency band 90-110 kHz and of other systems using the frequency band 70-130 kHz,  *requests the ITU‑R*  to continue studies in this matter, particularly the development of technical criteria and standards to permit compatible operations within the allocated frequency bands. | − | 2 |
| **716 (Rev.WRC-12)** | Use of the frequency bands 1 980‑2 010 MHz and 2 170‑2 200 MHz in all three Regions and 2 010-2 025 MHz and 2 160-2 170 MHz in Region 2 by the fixed and mobile-satellite services and associated transition arrangements | *resolves*  …  *invites ITU‑R*  to conduct, as a matter of urgency, further studies, in conjunction with the Bureau, to develop and provide to administrations the necessary tools in a timely manner to assess the impact of interference in the detailed coordination of mobile-satellite systems,  *invites ITU‑D*  to evaluate, as a matter of urgency, the financial and economic impact on the developing countries of the transfer of fixed services, and to present its results to a future competent world radiocommunication conference and/or world telecommunication development conference,  *invites the Director of the Telecommunication Development Bureau*  to implement *invites ITU‑D* by encouraging joint activities between the relevant study groups of both ITU‑D and ITU‑R,  *instructs the Director of the Radiocommunication Bureau*  to submit a report on the implementation of this Resolution to world radiocommunication conferences. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  4 |
| **729 (Rev.WRC-07)** | Use of frequency adaptive systems in the MF and HF bands | *resolves*  …  4 that assignments for frequency adaptive systems shall be notified to the Bureau in accordance with the provisions of Article **11** and Appendix **4**. | − | 3 |
| **731 (Rev.WRC-19)** | Consideration of sharing and adjacent-band compatibility between passive and active services above 71 GHz | *resolves*  to invite a future competent world radiocommunication conference to consider the results of ITU-R studies referred to in *invites the ITU Radiocommunication Sector* below with a view to taking the necessary action, as appropriate, in order to accommodate the emerging requirements of active services, taking into account the requirements of the passive services, in frequency bands above 71 GHz,  *invites the ITU Radiocommunication Sector*  1 to continue its studies to determine if and under what conditions sharing is possible between active and passive services in the frequency bands above 71 GHz, such as, but not limited to, 100-102 GHz, 116-122.25 GHz, 148.5‑151.5 GHz, 174.8-191.8 GHz, 226-231.5 GHz and 235-238 GHz;  2 to conduct studies to determine the specific conditions to be applied to the land-mobile and fixed-service applications to ensure the protection of EESS (passive) applications in the frequency bands 296-306 GHz, 313‑318 GHz and 333-356 GHz;  3 to study means of avoiding adjacent-band interference from space services (downlinks) into radio astronomy frequency bands above 71 GHz;  4 to take into account the principles of burden-sharing to the extent practicable in their studies;  5 to complete the necessary studies when the technical characteristics of the active services in these frequency bands are known;  6 to develop Recommendations specifying sharing criteria for those frequency bands where sharing is feasible,  *instructs the Secretary-General*  to bring this Resolution to the attention of the international and regional organizations concerned. | See Doc. [1/1](https://www.itu.int/md/R19-SG01-C-0001/en) See Doc. [7/1](https://www.itu.int/md/R19-SG07-C-0001/en) | 2  AND  4  AND  5 |
| **732 (Rev.WRC‑12)** | Consideration of sharing between active services above 71 GHz | *resolves*  1 that appropriate measures should be taken to meet the spectrum requirements for active services for which the technology will be commercially available at a later time;  2 that sharing criteria be developed for co-primary active services in bands above 71 GHz;  3 that the sharing criteria developed should form the basis for a review of active service allocations above 71 GHz at a future competent conference, if necessary,  *invites ITU-R*  to complete the necessary studies and develop ITU‑R Recommendation(s) with a view to presenting, at the appropriate time, the technical information likely to be required as a basis for the work of a future competent conference,  *instructs the Secretary-General*  to bring this Resolution to the attention of the international and regional organizations concerned. | See Doc. [1/1](https://www.itu.int/md/R19-SG01-C-0001/en) | 2  AND  4  AND  5 |
| **739 (Rev.WRC-19)** | Compatibility between the radio astronomy service and the active space services in certain adjacent and nearby frequency bands | *resolves*  …  6 that the objective of the consultation process in *resolves* 1, 2 and 3 is to achieve a mutually acceptable solution, using as guidance Report ITU-R SM.2091 and any other ITU Radiocommunication Sector Recommendations deemed relevant by the concerned administrations;  7 that BR shall make no examination or finding with respect to this Resolution under either Article **9** or **11**, | − | 3 |
| **741 (Rev.WRC‑15)** | Protection of the radio astronomy service in the frequency band 4 990 5 000 MHz from unwanted emissions of the radionavigation-satellite service (space-to-Earth) operating in the frequency band 5 010-5 030 MHz | *resolves*  1 that in order not to cause harmful interference to the RAS in the frequency band  4 990-5 000 MHz, the pfd produced in this frequency band by any GSO RNSS network operating in the 5 010‑5 030 MHz frequency band shall not exceed −171 dB(W/m2) in a 10 MHz frequency band at any radio astronomy station;  *…*  4 that administrations planning to operate a GSO or a non-GSO RNSS system in the frequency band 5 010‑5 030 MHz, for which complete coordination or notification information, as appropriate, has been received by the Bureau after 2 June 2000, shall send to the Bureau the value of the maximum level of pfd as referred to in *resolves* 1 or the value of the maximum level of epfd as referred to in *resolves* 2, as appropriate. | − | 3 |
| **743 (WRC-03)** | Protection of single-dish radio astronomy stations in Region 2 in the 42.5-43.5 GHz band | *resolves*  …  *invites ITU‑R*  to conduct studies and develop Recommendations to establish the appropriate balance between the percentage of time that GSO satellites operating in the 42-42.5 GHz band exceed the single-dish values in No. **5.551I** at the site of a radio astronomy station and the associated impact on radio astronomy observations.  NOTE 1 − For purposes of No. **5.551H**, No. **5.551I** and *resolves*4 of this Resolution, the radio astronomy stations currently under construction in Sierra Negra, Mexico, 18° 59′ N/97° 18′ W (station Volcan Sierra Negra) and San Pedro de Atacama, Chile, 23° 20′ S/67° 44′ W (station Atacama Large Millimeter Array) to conduct observations in the 42.5‑43.5 GHz band, shall be considered to have been in operation prior to 5 July 2003 if they are notified to the Radiocommunication Bureau before 1 January 2005. | − | 2  AND  3 |
| **744 (Rev.WRC-07)** | Sharing between the mobile-satellite service (Earth-to-space) and the fixed and mobile services in the band 1 668.4‑1 675 MHz | *resolves*  1 that the use of the band 1 668.4-1 675 MHz by systems in the mobile service is limited to transportable radio-relay systems;  2 that administrations operating transportable radio-relay systems should take into account Recommendation ITU-R M.1799, which states that, to adequately protect MSS networks, the e.i.r.p. of transportable radio-relay stations should not exceed −27 dB(W/4 kHz) in the band 1 668.4-1 675 MHz in the direction of the geostationary orbit;  3 that from 1 January 2015 administrations operating such systems in the mobile service shall limit the e.i.r.p. spectral density radiated in the direction of the geostationary orbit by these systems to −27 dB(W/4 kHz) in the band 1 668.4-1 675 MHz;  4 that, in the band 1 670-1 675 MHz, stations in the MSS shall not claim protection from stations in the fixed and mobile services operating in Canada and the United States of America;  5 that *resolves* 1, 2 and 3 do not apply to stations in the fixed and mobile services operating in Canada and the United States of America. |  | 3 |
| **748 (Rev.WRC-19)** | Compatibility between the aeronautical mobile (R) service and the fixed-satellite service (Earth-to-space) in the frequency band 5 091-5 150 MHz | *resolves*  1 that any AM(R)S systems operating in the frequency band 5 091-5 150 MHz shall not cause harmful interference to, nor claim protection from, systems operating in the ARNS;  2 that any AM(R)S systems operating in the frequency band 5 091-5 150 MHz shall meet the SARPs requirements published in Annex 10 of the ICAO Convention on International Civil Aviation and the requirements of Recommendation ITU-R M.1827-1, to ensure compatibility with FSS systems operating in that frequency band;  3 that, in part to meet the provisions of No. 4.10, the coordination distance with respect to stations in the FSS operating in the frequency band 5 091-5 150 MHz shall be based on ensuring that the signal received at the AM(R)S station from the FSS transmitter does not exceed −143 dB(W/MHz), where the required basic transmission loss shall be determined using the methods described in Recommendations ITU-R P.525-4 and ITU-R P.526-15,  *Invites*  1 administrations to supply technical and operational criteria necessary for sharing studies for the AM(R)S, and to participate actively in such studies;  2 ICAO and other organizations to participate actively in such studies,  *instructs the Secretary-General*  to bring this Resolution to the attention of ICAO. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) See Doc. [5/1](https://www.itu.int/md/R19-SG05-C-0001/en) | 3  AND  4 |
| **749 (Rev.WRC-19)** | Use of the frequency band 790‑862 MHz in countries of Region 1 and the Islamic Republic of Iran by mobile applications and by other services | *recognizing*  *…*  *k)* that ITU-R initiated studies with a view to developing and completing comprehensive Recommendations and Reports, in accordance with Resolution **224 (Rev.WRC-19)**, which need to take into account the cumulative effect of interference,  *resolves*  1 that, in Region 1:  in accordance with No. **5.316B**, and based on the criteria contained in the Annex to this Resolution, administrations implementing the mobile service in Region 1 shall seek agreement under No. **9.21** with respect to the ARNS in the countries mentioned in No. **5.312**;  2 that for Region 1 and the Islamic Republic of Iran:  2.1 when coordination between administrations is being effected, the protection ratios applicable to the generic case NB contained in the GE06 Agreement for the protection of the broadcasting service shall be used only for mobile systems with a bandwidth of 25 kHz; if another bandwidth is used, the relevant protection ratios are to be found in Recommendations ITU-R BT.1368 and ITU-R BT.2033;  2.2 administrations are invited to take into account, *inter alia*, the results of the sharing studies conducted by ITU-R in response to Resolution **749** (**WRC-07**)\*;  3 that, with respect to adjacent channel interference within the frequency band 790‑862 MHz:  3.1 adjacent channel interference within a given country is a national matter and needs to be dealt with by each administration as a national matter;  3.2 adjacent channel interference should be treated among administrations concerned, using mutually agreed criteria or those contained in relevant ITU-R Recommendations (see also the most recent versions of Recommendations ITU-R BT.1368, ITU-R BT.1895 and ITU-R BT.2033 when sharing with the broadcasting service is concerned), as appropriate,  *invites administrations*  to contribute further to the studies conducted by ITU-R in accordance with *recognizing k)* above,  *instructs the Director of the Radiocommunication Bureau*  to implement this Resolution and to take appropriate actions. | − | 3 |
| **750 (Rev.WRC-19)** | Compatibility between the Earth exploration-satellite service (passive) and relevant active services | *resolves*  1 that unwanted emissions of stations brought into use in the frequency bands and services listed in Table 1 below shall not exceed the corresponding limits in that table, subject to the specified conditions;  2 to urge administrations to take all reasonable steps to ensure that unwanted emissions of active service stations in the frequency bands and services listed in Table 2 below do not exceed the recommended maximum levels contained in that table, noting that EESS (passive) sensors provide worldwide measurements that benefit all countries, even if these sensors are not operated by their country;  3 that the Radiocommunication Bureau shall not make any examination or finding with respect to compliance with this Resolution under either Article **9** or **11**. | − | 6 |
| **751 (WRC‑07)** | Use of the frequency band 10.6‑10.68 GHz | *considering*  …  *g)* that studies have concluded that appropriate sharing criteria applicable to both passive and active services would reduce this interference to a level that would permit passive sensors to operate successfully, while allowing continuing operation of active services in the same band,  *resolves*  1 to urge administrations to take all reasonable steps to comply with the sharing criteria in Tables 1 to 4 contained in Annex 1 to this Resolution when bringing into use stations in the Earth exploration-satellite service (passive), the fixed service and the mobile, except aeronautical mobile, service, noting that EESS (passive) sensors provide worldwide measurements that benefit all countries, even if these sensors are not operated by their country;  2 that the Radiocommunication Bureau shall not make any examination or finding with respect to compliance with this Resolution under either Article **9** or **11**. | − | 6 |
| **752 (WRC-07)** | Use of the frequency band 36‑37 GHz | *considering*  …  *f)* that studies have concluded that appropriate sharing criteria applicable to both passive and active services would reduce this interference to a level that would permit passive sensors to operate successfully in this band, while allowing continuing operation of active services in the same band,  *resolves*  1 that, in order to facilitate sharing between active and passive services in the band 36‑37 GHz, EESS (passive) stations brought into use after the date of entry into force of the Final Acts of WRC‑07 shall comply with the sharing criteria contained in Table 1 of Annex 1 to this Resolution;  2 that, in order to facilitate sharing between active and passive services in the band 36‑37 GHz, stations of point-to-point systems in the fixed service brought into use after 1 January 2012 shall comply with the sharing criteria contained in Table 2 of Annex 1 to this Resolution;  3 that, in order to facilitate sharing between active and passive services in the band 36‑37 GHz, stations of point-to-multipoint systems in the fixed service brought into use after the date of entry into force of Final Acts of WRC‑07 shall comply with the sharing criteria contained in Table 2 of Annex 1 to this Resolution;  4 that, in order to facilitate sharing between active and passive services in the band 36‑37 GHz, stations in the mobile service brought into use after the date of entry into force of the Final Acts of WRC‑07 shall comply with the sharing criteria contained in Table 3 of Annex 1 to this Resolution;  5 that the Radiocommunication Bureau shall not make any examination or finding with respect to compliance with this Resolution under either Article **9** or **11**. | − | 6 |
| **759 (WRC-15)** | Technical studies on the coexistence of the radiolocation service and the amateur, amateur-satellite and radio astronomy services in the frequency band 76‑81 GHz | *resolves to invite the ITU Radiocommunication Sector*  to perform studies to assist administrations in ensuring compatibility between applications of the amateur, amateur-satellite and radio astronomy services and radiolocation service applications in the frequency band 76-81 GHz, taking into account those already completed in Report ITU-R M.2322, and develop ITU-R Recommendations and Reports, as appropriate. | − | 2 |
| **760 (Rev.WRC-19)** | Provisions relating to the use of the frequency band 694‑790 MHz in Region 1 by the mobile, except aeronautical mobile, service and by other services | *considering*  …  *b)* that the ITU Radiocommunication Sector (ITU-R) carried out studies, in accordance with Resolution **232 (WRC‑12)**\*, on compatibility between the mobile service and other services currently allocated in the frequency band 694-790 MHz;  …  *noting*  …  *f)* that ITU-R studies regarding possible solutions for global/regional harmonization of frequency bands and tuning ranges for electronic news gathering (ENG)1 are needed and Resolution ITU-R 59 provides the framework for such studies,  *resolves*  1that use of the frequency band 694-790 MHz in Region 1 by the mobile, except aeronautical mobile, service is subject to agreement obtained under No. **9.21** with respect to ARNS in countries listed in No. **5.312**, in which regard the criteria for identifying affected administrations under No. **9.21** for the mobile service with respect to the ARNS in the frequency band 694-790 MHz are set out in the Annex to this Resolution;  2that, for Region 1 and the Islamic Republic of Iran:  2.1when coordination between administrations is being effected, the protection ratios applicable to the generic case NB contained in the GE06 Regional Agreement for the protection of the broadcasting service shall be used only for mobile systems with a bandwidth of 25 kHz; if another bandwidth is used, the relevant protection ratios are to be found in Recommendations ITU-R BT.1368 and ITU R BT.2033;  2.2administrations are invited to take into account, *inter alia*, the results of the sharing studies conducted by ITU-R in response to Resolution **232 (WRC-12)**\*;  3that, with respect to adjacent-channel interference between the mobile service in the frequency band 694‑790 MHz and the broadcasting service in the frequency band 470-694 MHz:  3.1adjacent-channel interference within a given country is a national matter and needs to be dealt with by each administration as a national matter;  3.2adjacent-channel interference should be treated among administrations concerned, using mutually agreed criteria or those contained in relevant ITU-R Recommendations (see also the most recent versions of Recommendations ITU-R BT.1368, ITU-R BT.1895 and ITU-R BT.2033, as well as ITU-R M.2090 when sharing with the broadcasting service is concerned), as appropriate,  *invites the ITU Radiocommunication Sector*  1to consider the information received about the implementation of IMT in the frequency band 694-790 MHz and develop ITU-R Reports, as appropriate;  2to pursue studies on the implementation of applications ancillary to broadcasting and programme-making on the basis of Resolution ITU-R 59,  *invites the Director of the Radiocommunication Bureau*  to work, in cooperation with the Director of the Telecommunication Development Bureau, to bring assistance to developing countries wishing to implement the new mobile allocation in order to help these administrations to determine the modifications of the GE06 entries according to their needs,  *invites administrations*  1to provide information to ITU-R about the implementation of IMT in the frequency band 694-790 MHz, including, for example, implementation of measures for interference mitigation;  2to communicate on a bilateral basis in order to eliminate possible cumulative interference, as appropriate;  3to consider the use of applications ancillary to broadcasting and programme-making in those parts of the frequency band 694-790 MHz that are not used for other applications in the mobile service or other primary services,  *instructs the Director of the Radiocommunication Bureau*  to implement this Resolution and to take appropriate actions. | − | 2  AND  3  AND  4 |
| **761 (Rev.WRC-19)** | Coexistence of International Mobile Telecommunications and the broadcasting-satellite service (sound) in the frequency band 1 452‑1 492 MHz in Regions 1 and 3 | *instructs the Director of the Radiocommunication Bureau*  1not to examine the pfd limit set forth in *resolves* 1 under No. **9.35** and issue a qualified favourable finding with respect to No. **9.35**, but to perform the full regulatory examination under No. **11.31**, including the review of any qualified favourable findings;  2in applying *resolves* 5 at the coordination stage, to check conformity with the pfd value contained herein during the examination under No. **9.36**:  –if the value is met on the territory of countries which use frequency assignments with the nature of service “IM”, BR shall not identify such administrations with which coordination may need to be effected;  –if the value is exceeded, BR shall identify such administrations with which coordination may need to be effected and in such cases publish the administrations with an additional remark “IM” under No. **9.11**;  3to assist administrations notifying frequency assignments to the BSS (sound) by informing each administration where coordination is required and to inform them that coordination is requested under No. **9.11** and that No. **9.52C** applies in the application of *resolves* 5;  4to investigate under No. **13.6** the technical characteristics and operational parameters of assignments to the BSS (sound) in the frequency band 1 452-1 492 MHz for which the notification information was submitted before 23 November 2019 and which were brought into use by that date;  5to investigate under No. **13.6** the technical characteristics and operational parameters of assignments to base stations in the frequency band 1 452-1 492 MHz identified for IMT in the country submitting the notice with the nature of service “IM” in Regions 1 and 3 for which the notification information was submitted and which were brought into use before 23 November 2019. | − | 3 |
| **762 (WRC‑15)** | Application of power flux-density criteria to assess the potential for harmful interference under No. 11.32A for fixed-satellite and broadcasting-satellite service networks in the 6 GHz and 10/11/12/14 GHz frequency bands not subject to a Plan | *resolves*  …  4that as of 1 January 2017 the Bureau and administrations shall apply this Resolution,  *instructs the Director of the Radiocommunication Bureau*  to include in his report, for consideration by WRC-19, the results and any potential difficulties relating to the implementation of this Resolution.  *[Editor’s note: this part can be considered as obsolete after WRC-19.]* | − | 3 |
| **768 (WRC-19)** | Need for coordination of Region 2 fixed-satellite service networks in the frequency band 11.7‑12.2 GHz with respect to the Region 1 broadcasting-satellite service assignments located further west than 37.2° W and of Region 1 fixed-satellite service networks in the frequency band 12.5-12.7 GHz with respect to the Region 2 broadcasting-satellite service assignments located further east than 54° W | *resolves*  1that, in the frequency band 11.7-12.2 GHz, with respect to §§ 7.1 *a)*, 7.2.1 *a),* 7.2.1 *b)* and 7.2.1 *c)* of Article 7 of Appendix **30**, in determining the need for coordination of a transmitting space station in the FSS in Region 2 with a transmitting space station in the BSS in Region 1 at an orbital position further west than 37.2° W, and with minimum geocentric orbital separation of less than 4.2 degrees between the FSS and BSS space stations, the conditions in Annex 1 to this Resolution apply instead of those contained in Annex 4 to Appendix **30**;  2that, in the frequency band 12.5-12.7 GHz, with respect to §§ 7.1 *a)*, 7.2.1 *a)* and 7.2.1 *c)* of Article 7 of Appendix **30**, in determining the need for coordination of a transmitting space station in the FSS in Region 1 with a transmitting space station in the BSS in Region 2 at an orbital position further east than 54° W and not within its clusters in the Region 2 Plan of Appendix **30**, and with a minimum geocentric orbital separation less than 4.2 degrees between FSS and BSS space stations, the conditions in Annex 2 to this Resolution apply instead of those contained in Annex 4 to Appendix **30**;  3that, except the cases specified in *resolves* 1 and 2, the conditions in Annex 4 to Appendix **30** continue to apply. | − | 3 |
| **769 (WRC-19)** | Protection of geostationary fixed-satellite service, broadcasting-satellite service and mobile-satellite service networks from the aggregate interference produced by multiple non-geostationary fixed-satellite service systems in the frequency bands 37.5-39.5 GHz, 39.5‑42.5 GHz, 47.2‑50.2 GHz and 50.4‑51.4 GHz | *resolves*  …  *invites administrations*  to submit to BR, as necessary, supplemental GSO links, in a format consistent with the generic links in Annex 1 to Resolution **770 (WRC-19)**, and in the frequency bands listed in *considering a)*, that are associated with GSO networks,  *invites the Radiocommunication Bureau*  to participate in the consultation meetings in *resolves* 2 as an observer,  *invites the ITU Radiocommunication Sector*  1to carry out studies and develop, as a matter of urgency, a suitable methodology, considering a range of input values and assumptions, including both best and worst case, for calculating the aggregate interference produced by all non-GSO FSS and as appropriate non-GSO MSS systems operating or planning to operate in the frequency bands referred to above co-frequency with GSO FSS, GSO MSS and GSO BSS networks, which may be used to determine whether the systems are in compliance with the aggregate limits specified in No. **22.5M**;  2to carry out studies and develop, as a matter of urgency a methodology to validate supplemental GSO links;  3to study the selection and use of *C*/*N* objectives, and the necessity of specifying one or more *C*/*N* objective points at associated percentages of time, with regard to the GSO link performance;  4to report back to a future world radiocommunication conference, as appropriate, under Resolution **86 (Rev.WRC-07)**,  *instructs the Radiocommunication Bureau*  1to collect and, once a methodology is available, evaluate for validation purposes and provide for information the supplemental GSO links submitted by administrations for frequency assignments associated with GSO networks;  2to provide the consultation meeting, for use in the aggregate calculations, with the validated supplemental GSO links associated with networks brought into use;  3to make available on the ITU website within one month from the closing date of any consultation meeting all information, such as that in Annex 2, referred to in *resolves* 11;  4to exclude the aggregate calculations given in No. **22.5M** as part of a satellite network examination under No. **11.31**. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  5 |
| **770 (WRC-19)** | Application of Article 22 of the Radio Regulations to the protection of geostationary fixed-satellite service and broadcasting-satellite service networks from non-geostationary fixed-satellite service systems in the frequency bands 37.5‑39.5 GHz, 39.5‑42.5 GHz, 47.2‑50.2 GHz and 50.4‑51.4 GHz | *resolves*  1that during the examination under Nos. **9.35** and **11.31**, as applicable, of a non-GSO FSS satellite system with frequency assignments in the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-tospace), the technical characteristics of generic GSO reference links contained in Annex 1 to this Resolution shall be used in conjunction with the methodology in Annex 2 to this Resolution to determine compliance with No. **22.5L**;  2that frequency assignments to non-GSO FSS systems referred to in *resolves* 1 shall receive a favourable finding with respect to the single-entry provision given in No. **22.5L** if compliance with No. **22.5L** is established under *resolves* 1, otherwise the assignments shall receive an unfavourable finding;  3that, if the Radiocommunication Bureau (BR) is unable to examine non-GSO FSS systems subject to the single-entry provision given in No. **22.5L** due to a lack of available software, the notifying administration shall provide all necessary information sufficient to demonstrate compliance with No. **22.5L** and send BR a commitment that the non-GSO FSS system complies with the limits given in No. **22.5L**;  4that frequency assignments to non-GSO FSS systems that cannot be assessed under *resolves* 1 shall receive a qualified favourable finding under No. **9.35** with respect to No. **22.5L** if *resolves* 3 is satisfied, otherwise the assignments shall receive an unfavourable finding;  5that, if an administration believes that a non-GSO FSS system for which the commitment referred to in *resolves* 3 was sent has the potential to exceed the limits given in No. **22.5L**, it may request additional information from the notifying administration with regard to compliance with these limits and No. **22.2**, and both administrations shall cooperate to resolve any difficulties, with the assistance of BR, if so requested by either of the parties;  6that *resolves* 3, 4 and 5 shall no longer be applied after BR has communicated to all administrations via a circular letter that validation software is available and BR is able to verify compliance with the limits in No. **22.5L**,  *invites the ITU Radiocommunication Sector*  1to study and, as appropriate, develop a functional description that could be used to develop software for the procedures outlined in *resolves* 1 above;  2to review and, as appropriate, provide updates to the generic GSO reference links in Annex 1 to this Resolution under Resolution **86 (Rev.WRC-07)**,  *instructs the Director of the Radiocommunication Bureau*  to review, once the validation software as described in *resolves* 3 is available, BR's findings made in accordance with Nos. **9.35** and **11.31**. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3 |
| **771 (WRC-19)** | Use of the frequency bands 37.5‑42.5 GHz (space-to-Earth) and 47.2-48.9 GHz, 48.9-50.2 GHz and 50.4‑51.4 GHz (Earth-to-space) by non-geostationary-satellite systems in the fixed-satellite service and 39.5-40.5 GHz (space-to-Earth) by non-geostationary-satellite systems in the mobile-satellite service | *resolves*  1that frequency assignments to non-GSO networks or systems for which the complete notification information has been received by the Radiocommunication Bureau before 23 November 2019 shall be brought into use before 23 November 2022 or the end of the regulatory period set forth in No. **11.44**, whichever date comes earlier;  2that frequency assignments to which resolves 1 applies and that are not brought into use before 23 November 2022 or the end of the regulatory period set forth in No. **11.44**, whichever date comes earlier, shall be suppressed,  *instructs the Radiocommunication Bureau*  to take the necessary actions to implement this Resolution. | − | 3 |
| **772 (WRC-19)** | Consideration of regulatory provisions to facilitate the introduction of sub-orbital vehicles | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **773 (WRC-19)** | Study of technical and operational issues and regulatory provisions for satellite-to-satellite links in the frequency bands 11.7‑12.7 GHz, 18.1‑18.6 GHz, 18.8‑20.2 GHz and 27.5‑30 GHz | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **774 (WRC-19)** | Studies on technical and operational measures to be applied in the frequency band 1 240‑1 300 MHz to ensure the protection of the radionavigation-satellite service (space-to-Earth) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **775 (WRC-19)** | Sharing between stations in the fixed service and satellite services in the frequency bands 71‑76 GHz and 81‑86 GHz | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **776 (WRC-19)** | Conditions for the use of the frequency bands 71‑76 GHz and 81‑86 GHz by stations in the satellite services to ensure compatibility with passive services | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1 |
| **804 (Rev.WRC-19)** | Principles for establishing agendas for world radiocommunication conferences | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4 |
| **811 (WRC-19)** | Agenda for the 2023 world radiocommunication conference | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4  AND  5 |
| **812 (WRC-19)** | Preliminary agenda for the 2027 World Radiocommunication Conference | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | [See CA/251](https://www.itu.int/md/R00-CA-CIR-0251/en) | 1  AND  4  AND  5 |
| **901 (Rev.WRC-15)** | Determination of the orbital arc separation for which coordination would be required between two satellite networks operating in a space service not subject to a Plan | *resolves*  to recommend that a future competent conference review the results of ITU‑R studies on the application of the coordination arc value(s) to other frequency bands and other services, as applicable, and consider their inclusion in Appendix **5**,  *invites ITU-R*  1 to conduct studies on the applicability of the coordination arc concept for space radiocommunication services not yet covered by these Regulations;  2 to recommend, as appropriate, the orbital separation required for triggering inter-service and intra-service coordination concerning the satellite services in frequency bands above 3.4 GHz for geostationary-satellite (GSO) networks not subject to a Plan and not already covered by the coordination arc concept specified in No. **9.7** (GSO/GSO) of Table 5‑1 (Appendix **5**), under items 1) to 8) of the frequency band column, and subject to Section II of Article **9**,  *instructs the Director of the Radiocommunication Bureau*  to report the results of these studies to the RRB once Recommendations are approved, and to the next competent conference. | See Doc. [4/1](https://www.itu.int/md/R19-SG04-C-0001/en) | 2  AND  3  AND  5 |
| **902 (WRC-03)** | Provisions relating to earth stations located on board vessels which operate in fixed-satellite service networks in the uplink bands 5 925-6 425 MHz and 14‑14.5 GHz | *resolves*  that ESVs transmitting in the 5 925-6 425 MHz and 14-14.5 GHz bands shall operate under the regulatory and operational provisions contained in Annex 1 and the technical limitations in Annex 2 of this Resolution,  *encourages concerned administrations*  to cooperate with administrations which license ESVs while seeking agreement under the abovementioned provisions, taking into consideration the provisions of Recommendation **37 (WRC-03)**,  *instructs the Secretary-General*  to bring this Resolution to the attention of the Secretary-General of the International Maritime Organization (IMO). | − | 3  AND  4 |
| **903 (Rev.WRC-19)** | Transitional measures for certain broadcasting-satellite/fixed-satellite service systems in the frequency band 2 500‑2 690 MHz | *resolves*  1that, in the frequency band 2 500-2 690 MHz, space stations of satellite networks listed in the Annex to this Resolution shall not exceed the following pfd values:  −152 dB(W/m2) for δ < 5°  −152 + 0.75 (δ − 5) dB(W/m2) for 5° ≤ δ ≤ 25°  −137 dB(W/m2) for δ > 25°  in any 4 kHz band, where δ is the angle of arrival above the horizontal plane; the limits in Table **21-4** do not apply;  2that, for systems other than those addressed in *resolves* 1, No. **5.418** and Resolution **539 (Rev.WRC-19)**, the Radiocommunication Bureau (BR) shall examine any coordination and notification information with respect to the provisions Nos. **9.35** and **11.31** (respectively) for frequency assignments in the FSS or BSS received by BR after 14 November 2007 using the pfd limits for the frequency band 2 500-2 690 MHz in Table **21-4** of Article **21**,  *instructs the Radiocommunication Bureau*  to implement *resolves* 1 and *resolves* 2. | − | 3 |
| **904 (WRC-07)** | Transitional measures for coordination between the mobile-satellite service (Earth-to-space) and the space research (passive) service in the band 1 668‑1 668.4 MHz for a specific case | *resolves*  that, in the band 1 668-1 668.4 MHz, mobile-satellite service systems that exceed the relevant coordination threshold condition shall be coordinated with the SPECTR‑R system operating in the space research service (passive), for which advance publication information was received by the Bureau on 7 December 2005 provided that the complete coordination information is received by the Bureau within the time-limit mentioned in No. **9.5D**. | − | 3 |
| **906 (Rev.WRC‑15)** | Electronic submission of notices for terrestrial services to the Radiocommunication Bureau and exchange of data between administrations | *resolves*  1 that administrations are encouraged to accelerate migration to the use of an electronic format and electronic facilities for the submission of notices to the Bureau and for the exchange of coordination data between administrations;  2 that the format established by ITU‑R for electronic notices be considered by administrations for the exchange of information,  *instructs the Director of the Radiocommunication Bureau*  1 to refine, as required, the specification of the electronic format and related software to be used for the submission of notices for terrestrial services;  2 to provide assistance, as required, to any administration in the use of the electronic format for the submission of notices for terrestrial services;  3 to support developing and least-developed countries while deploying electronic facilities for the submission of electronic notices to the Bureau and for the exchange of coordination data between administrations;  4 to include in radiocommunication seminars and regional workshops appropriate training in the use of the electronic format and related software for the submission of notices for terrestrial services. | − | 3 |
| **907 (Rev.WRC‑15)** | Use of modern electronic means of communication for administrative correspondence related to advance publication, coordination and notification of satellite networks including that related to Appendices 30, 30A and 30B, earth stations and radio astronomy stations | *resolves*  1 that modern electronic means of communication shall be used whenever possible in the administrative correspondence between administrations and the Radiocommunication Bureau related to the advance publication, coordination, notification and recording processes, including correspondence related to Appendices **30**, **30A** and **30B**, for satellite networks, earth stations and radio astronomy stations;  2 that, wherever the words “telegram”, “telex” or “fax” are inserted in provisions related to the advance publication, coordination, notification and recording processes of satellite networks, earth stations and radio astronomy stations, including the provisions contained in Appendices **30**, **30A** and **30B**, modern electronic means shall be used, to the greatest extent possible;  3 that other traditional means of communication shall continue to be used unless the administration informs the Bureau of its willingness to discontinue such use,  *instructs the Radiocommunication Bureau*  1 to provide administrations with the necessary technical means to ensure that the modern electronic correspondence between administrations and the Radiocommunication Bureau is secure;  2 to inform administrations of the availability of such means and of the associated schedule of implementation;  3 to automatically acknowledge receipt of all electronic correspondence;  4 to report to the next world radiocommunication conference on the experience gained in the application of this Resolution, with a view to making any necessary consequential amendments to the Radio Regulations,  *urges administrations*  to use, to the extent possible, modern electronic means of communication in the administrative correspondence between themselves related to advance publication, coordination and notification of satellite networks, including that related to Appendices **30**, **30A** and **30B**, and to earth stations and radio astronomy stations, recognizing that other means of communication may still be used if necessary (see also *resolves*3). | − | 3 |
| **908 (Rev.WRC‑15)** | Electronic submission and publication of satellite network filings | *resolves*  that administrations shall submit all satellite network filings and comments, if required, using a secure paperless electronic approach upon being advised that the means for such electronic submission of a satellite network filing for satellite networks or systems has been implemented and upon receiving assurances that such means are indeed secure,  *instructs the Director of the Radiocommunication Bureau*  1 to implement a secure paperless electronic approach for the electronic submission and publication of satellite network filings and comments, if required, for satellite networks or systems, taking into account the conditions mentioned in the *resolves* of this Resolution;  2 to study and implement, as appropriate, a consolidated approach for the electronic submission of both satellite network filings and their related correspondence. | − | 3 |

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