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| **Radiocommunication Study Groups** |  |
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| **3 February 2025** |
| **English only** |
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| W(A)RC ReCOMMENDAtions | |
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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 Recommendations 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 (calling for ITU-R studies)**

Recommendations that refer to ITU-R Sector for study as results of deliberation at WRC.

**Category 2 (addressed to BR)**

Recommendations 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 subsequent/next WRCs.

**Category 3** **(collaboration/cooperation with other ITU Sector(s) or other International Organizations)**

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

**Category 4 (inviting PP, WRC, Council or the RRB to take necessary actions, as appropriate)**

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

**Category 5 (other Recommendations not identified within Categories 1 to 4)**

Recommendations that do not fit in any of the above-mentioned 4 categories but could have some implementation aspects.

The table below lists all the World (Administrative) Radio(communication) Conference (W(A)RC) Recommendations in force. The elements of each Recommendation relating to the ITU Radiocommunication Sector (ITU-R) are contained in the column titled “*recommends*”. Links to the relevant ITU-R Study Group (SG) documents describing the assignment of the Recommendation 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 Recommendation contains instructions for the ITU Radiocommunication Sector, but it is not included in Document 1 of any ITU-R Study Group. |
|  | Cells in this colour indicate that the W(A)RC Recommendation contains instructions for the ITU Radiocommunication Sector and it is included in Document 1 of one or more ITU-R Study Group(s). |

| Recommendation | Title | *recommends* | WP | Category/(ies) |
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| **7 (Rev.WRC-97)** | Adoption of standard forms for ship station and ship earth station licences and aircraft station and aircraft earth station licences1  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1 Throughout this Recommendation, references to ship stations may include references to ship earth stations and references to aircraft stations may include references to aircraft earth stations. | *recommends*  1 that administrations which find these forms practicable and acceptable should adopt them for international use;  2 that administrations should, as far as possible, endeavour to bring their national licence forms into line with these standard forms. | − | 5 |
| **8 (WARC-79)** | Relating to automatic identification of stations | *recommends*  that the ITU-R study the matter of automatic identification of stations with a view to recommending technical characteristics and methods of implementing a common universal system, including standard modulation techniques, for application in accordance with Article **19**, with due consideration to the needs of the different services and types of stations. | − | 1  AND  2 |
| **9 (WARC-79)** | Relating to the measures to be taken to prevent the operation of broadcasting stations on board ships or aircraft outside national territories1  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1 WRC-97 made editorial amendments to this Recommendation. | *recommends*  1 that administrations ask their governments to study possible means, direct or indirect, to prevent or suspend such operations and, where appropriate, take the necessary action;  2 that administrations inform the Secretary-General of the results of these studies and submit any other information which may be of general interest, so that the Secretary-General can inform Member States accordingly. | − | 5 |
| **16 (Rev.WRC-19)** | Interference management for stations that may operate under more than one terrestrial radiocommunication service | *recommends*  that ITU-R study all aspects of interference management resulting from the impact of technical convergence on the radio regulatory environment, involving stations that may operate under more than one terrestrial radiocommunication service, particularly cross-border interference cases, to ensure harmful interference is not caused to stations of other Member States,  *invites administrations*  to participate actively in the studies by submitting contributions to ITU-R. | See Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1 |
| **34 (Rev.WRC-23)** | Principles for the allocation of frequency bands | *recommends that future world radiocommunication conferences*  1 should, wherever possible, allocate frequency bands to the most broadly defined services with a view to providing the maximum flexibility to administrations in spectrum use, taking into account safety, technical, operational, economic and other relevant factors;  2 should, wherever possible, allocate frequency bands on a worldwide basis (aligned services, categories of service and frequency band limits) taking into account safety, technical, operational, economic and other relevant factors;  3 should, wherever possible, keep the number of footnotes in Article **5** to a minimum when allocating frequency bands through footnotes, in line with Resolution **26 (Rev.WRC-23)**;  4 should take into account relevant studies by the Radiocommunication Sector (ITU-R) and report(s) of the relevant Conference Preparatory Meeting(s) (CPM), as appropriate, considering also contributions by members, including technical and operational developments, forecasts and usages as per the agenda of the WRC,  *recommends administrations*  in making proposals to world radiocommunication conferences, to take account of *recommends that future world radiocommunication conferences* 1 to 4 and *considering a)* to *g)*,  *invites administrations*  to actively participate in ITU-R studies, providing their technical and operational developments, forecasts and usages,  *instructs the Director of the Radiocommunication Bureau and requests the ITU Radiocommunication Sector study groups*  1 when carrying out technical studies relating to a frequency band, to examine the compatibility of broadly defined services with the existing utilizations and the possibility of aligning allocations on a worldwide basis, having regard to *considering a)* to *g)* and *recommends that future world radiocommunication conferences*1 to 4 above;  2 to conduct these studies, with the participation of the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO), the World Meteorological Organization (WMO) and other international organizations concerned, where appropriate;  3 to submit a report to future world radiocommunication conferences containing the results of these studies,  *invites the ITU Radiocommunication Sector*  to identify areas for study and to undertake the studies necessary to determine the impact on existing services of those agenda items of future world radiocommunication conferences which involve broadening the scope of existing service allocations,  *instructs the Secretary-General*  to communicate this Recommendation to ICAO, IMO, WMO and other international organizations concerned, where appropriate,  *invites the Director of the Radiocommunication Bureau*  to bring this Recommendation to the attention of the ITU Telecommunication Standardization and Telecommunication Development Sectors. | See  Doc. [1/1](https://www.itu.int/md/R23-SG01-C-0001/en)  and  Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1  AND  2  AND  3  AND  4 |
| **36 (Rev.WRC-19)** | Role of international monitoring in reducing apparent congestion in the use of orbit and spectrum resources | *invites ITU-R*  to study and make recommendations concerning the facilities required to provide adequate coverage of the world with a view to ensuring efficient use of resources,  *invites administrations*  1 to make every effort to provide monitoring facilities as envisaged in Article **16**;  2 to inform ITU-R of the extent to which they are prepared to cooperate in such monitoring programmes as may be requested by ITU-R;  3 to consider the various aspects of monitoring emissions originating from space stations to enable the provisions of Articles **21** and **22** to be applied. | See  Doc. [1/1](https://www.itu.int/md/R23-SG01-C-0001/en) | 1 |
| **37 (Rev.WRC-23)** | Operational procedures for earth stations on board vessels (ESVs) use | *recommends*  that operation of ESVs follow the procedures set forth in the Annex. | − | 5 |
| **63 (Rev.WRC-19)** | Relating to the provision of formulae and examples for the calculation of necessary bandwidths | *recommends that ITU-R*  1 provide, from time to time, additional formulae for the determination of necessary bandwidth for common classes of emission, as well as examples to supplement those given in Recommendation ITU-R SM.1138;  2 study and provide values of supplementary *K*-factors required for the calculation of the necessary bandwidth for common classes of emission,  *invites the Radiocommunication Bureau*  to publish examples of such calculations in the Preface to the International Frequency Information Circular (BR IFIC). | See  Doc. [1/1](https://www.itu.int/md/R23-SG01-C-0001/en) | 1  AND  2 |
| **71 (WARC-79)** | Relating to the standardization of the technical and operational characteristics of radio equipment1  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1 WRC-97 made editorial amendments to this Recommendation. | *recommends*  1 that administrations endeavour to cooperate with a view to establishing international performance specifications and associated measuring methods that could be used as models for domestic standards for radio equipment;  2 that such international performance specifications and associated measuring methods respond to widely representative conditions including specific requirements of developing countries;  3 that, when such international performance specifications for radio equipment exist, administrations, as far as practicable, adopt these specifications as a basis for their national standards;  4 that administrations consider as far as practicable mutual acceptance for the type approval of equipment which conforms to such performance specifications. | − | 5 |
| **75 (Rev.WRC-15)** | Study of the boundary between the out-of-band and spurious domains of primary radars using magnetrons | *recommends*  that ITU-R study calculation methods for the −40 dB bandwidth necessary for the determination of the boundary between the spurious and out-of-band domains of primary radars using magnetrons,  *invites administrations*  to participate actively in the above studies by submitting contributions to ITU-R. | See  Doc. [1/1](https://www.itu.int/md/R23-SG01-C-0001/en) and  Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1 |
| **76 (WRC-12)** | Deployment and use of cognitive radio systems | *recommends*  that administrations participate actively in the ITU-R studies conducted under Resolution ITU-R 58, taking into account *recognizing a)* and *b)*. | See  Doc. [1/1](https://www.itu.int/md/R23-SG01-C-0001/en) and  Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1 |
| **100 (Rev.WRC-03)** | Preferred frequency bands for systems using tropospheric scatter | *recommends that administrations*  1 for the assignment of frequencies to new stations in systems using tropospheric scatter, take into account the latest information prepared by ITU-R to ensure that systems established in the future use a limited number of certain frequency bands;  2 in frequency assignment notifications to the Bureau, indicate expressly whether they relate to stations of tropospheric scatter systems. | − | 5 |
| **206 (Rev.WRC-23)** | Studies on the possible use of integrated mobile-satellite service and ground component systems in the frequency bands 1 525-1 544 MHz, 1 545‑1 559 MHz, 1 626.5‑1 645.5 MHz and 1 646.5-1 660.5 MHz | *recommends*  to invite ITU-R to conduct studies on the possible use of integrated MSS systems in the frequency bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5-1 660.5 MHz, as appropriate, taking into account the need to protect existing and planned systems, as well as the above *considering*, *recognizing* and *noting*, and in particular *recognizing a)*, *b)* and *c)*,  *invites administrations*  to participate as necessary in the ITU-R studies taking into account *recognizing a)*. | See  Doc. [4/1](https://www.itu.int/md/R23-SG01-C-0001/en)  and Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1 |
| **207 (Rev.WRC-19)** | Future IMT systems | *recommends*  to invite ITU-R to study as necessary technical, operational and spectrum related issues to meet the objectives of future development of IMT systems. | See  Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1 |
| **208 (WRC-19)** | Harmonization of frequency bands for evolving Intelligent Transport Systems applications under mobile-service allocations | *recommends*  1 that administrations consider using globally or regionally harmonized frequency bands, or parts thereof, as described in the most recent versions of Recommendations (e.g. ITU-R M.2121), when planning and deploying evolving ITS applications, taking into account *recognizing b)* above;  2 that administrations take into account, if necessary, coexistence issues between ITS stations and stations of existing services (e.g. FSS earth stations), taking into account *considering f)*,  *invites Member States and Sector Members*  to participate actively in and to contribute to ITU*-*R studies on aspects of ITS and evolving ITS (e.g. connected vehicles, autonomous vehicles, adaptive driver assistance systems), through the ITU*-*R study groups,  *instructs the Secretary-General*  to bring this Recommendation to the attention of relevant international and regional organizations, in particular standards development organizations, dealing with ITS. | See  Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 1  AND  3 |
| **316 (Rev.WRC-19)** | Use of ship earth stations within harbours and other waters under national jurisdiction | *recommends*  that all administrations should permit, to the extent possible, ship earth stations to operate within harbours and other waters under national jurisdiction, in the frequency bands used for the GMDSS. | See  Doc. [5/1](https://www.itu.int/md/R23-SG05-C-0001/en) | 5 |
| **401 (WARC-79)** | Relating to the efficient use of aeronautical mobile (R) worldwide frequencies | *recommends to administrations*  1 that the number of HF aeronautical stations on the worldwide channels should be kept to a minimum consistent with the economic and efficient use of frequencies;  2 that, if possible and practicable, one such station should serve aircraft operating agencies in adjacent countries and there should not normally be more than one station per country. | − | 5 |
| **503 (Rev.WRC-19)** | High-frequency broadcasting | *recommends administrations*  1 to draw the attention of manufacturers to this matter, in order to ensure that future digital receivers take full advantage of the advanced technology while maintaining low cost;  2 to encourage manufacturers to monitor closely the development of the studies carried out by ITU-R, with a view to starting mass production of new low-cost digital receivers as soon as possible after the approval of relevant ITU-R Recommendation(s). | See Doc. [6/1](https://www.itu.int/md/R23-SG06-C-0001/en) | 5 |
| **506 (WARC-79)** | Relating to the harmonics of the fundamental frequency of broadcasting-satellite stations1  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1 WRC-97 made editorial amendments to this Recommendation. | *recommends*  that, when defining the characteristics of their space stations operating in the broadcasting-satellite service, particularly within the band 11.8-12 GHz, administrations take all necessary steps to reduce the level of the second harmonic below the values indicated in the relevant ITU-R Recommendations. | − | 5 |
| **520 (WARC-92)** | Elimination of HF broadcasting on frequencies outside the HF bands allocated to the broadcasting service | *recommends*  that administrations shall take practicable steps to eliminate HF broadcasting outside the HF bands allocated to the broadcasting service. | See Doc. [6/1](https://www.itu.int/md/R23-SG06-C-0001/en) | 5 |
| **522 (WRC-97)** | Coordination of high-frequency broadcasting schedules in the bands allocated to the broadcasting service between 5 900 kHz and 26 100 kHz | *recommends administrations*  to promote, as far as possible, regular coordination of their broadcasting schedules within appropriate regional coordination groups of administrations or broadcasting organizations in order to resolve or reduce incompatibilities, through bilateral or multilateral meetings or by correspondence (telephone, facsimile, e-mail, etc.). | See Doc. [6/1](https://www.itu.int/md/R23-SG06-C-0001/en) | 5 |
| **608 (Rev.WRC-07)** | Guidelines for consultation meetings established in Resolution 609 (Rev.WRC-07) | *recommends*  1 that in the implementation of *resolves* 5 of Resolution **609 (Rev.WRC-07)**, in the frequency band 1 164-1 215 MHz, the maximum pfd produced at the surface of the Earth by emissions from a space station in the RNSS, for all angles of arrival, should not exceed −129 dB(W/m2) in any 1 MHz band under free space propagation conditions;  2 that the RNSS characteristics listed in the Annex 1, used when applying the methodology contained in Recommendation ITU-R M.1642-2, as well as the calculated aggregate epfd in dB(W/m2) in each 1 MHz in the range 1 164-1 215 MHz, should be made available in electronic format by the consultation meetings. | − | 5 |
| **622 (WRC-97)** | Use of the frequency bands 2 025-2 110 MHz and 2 200‑2 290 MHz by the space research, space operation, Earth exploration-satellite, fixed and mobile services | *recommends*  that administrations planning to introduce new systems in the space research, space operation, earth exploration-satellite, fixed or mobile services in the bands 2 025‑2 110 MHz and 2 200-2 290 MHz take into account the ITU-R Recommendations referred to in *considering b)* above when making assignments to these services, and implement enhancements in technology as early as practicable with a view to minimizing the total bandwidth required by systems of each service. | − | 5 |
| **707 (Rev.WRC-23)** | Relating to the use of the frequency band 32.3-33 GHz shared between the intersatellite service and the radionavigation service | *considering*  …  *d)* that Recommendation ITU-R S.1151 provides the criteria for sharing between the inter-satellite service and the radionavigation service at 33 GHz,  *recommends*  that a future competent world radiocommunication conference consider the result of the ITU-R studies referred to in *considering d)* above with a view to the inclusion of such sharing criteria in Article **21**. | − | 1  AND  4 |
| **724 (WRC-07)** | Use by civil aviation of frequency allocations on a primary basis to the fixed-satellite service | *recommends*  1 that administrations, in particular in developing countries and in countries with remote and rural areas, recognize the importance of VSAT operations to the modernization of civil aviation telecommunications systems and encourage the implementation of VSAT systems that could support both aeronautical and other communication requirements;  2 that administrations in developing countries be encouraged, to the maximum extent possible and as necessary, to expedite the authorization process to enable aeronautical communications using VSAT technology;  3 that arrangements should be made to provide for urgent service restoration or alternative routing in case of a disruption of a VSAT link associated with the aeronautical communications;  4 that administrations implementing VSAT systems in accordance with *recommends* 1 to 3 should do so in satellite networks operating in frequency bands with a primary allocation to the satellite services;  5 to invite ICAO, noting Resolution **20 (Rev.WRC-03)**, to continue its assistance to developing countries to improve their aeronautical telecommunications, including interoperability of VSAT networks, and provide guidance to developing countries on how they could best use VSAT technology for this purpose,  *requests the Secretary-General*  to bring this Recommendation to the attention of ICAO. | − | 3  AND  5 |

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