



International Amateur Radio Union

Working for the future of amateur radio

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Preliminary IARU Positions on WRC-23 Agenda Items

In this document the International Amateur Radio Union (IARU) presents its preliminary views as of March 2021 on six WRC-23 agenda items of principal concern: 1.2, 1.12, 1.14, 1.18, 9.1 Topic A, and 9.1 Topic B. These positions have been approved by the IARU Administrative Council and are subject to revision as WRC-23 preparations proceed.

Introduction

The International Amateur Radio Union is the worldwide federation of national amateur radio organizations with member-societies in more than 140 Member States of the ITU. The IARU plays an active role in the work of the ITU Radiocommunication and Development Sectors on behalf of more than three million licensees in the amateur and amateur-satellite services.

The IARU seeks to protect the primary amateur and amateur-satellite service allocations in all the bands that may be affected by WRC-23 agenda items. The IARU does not wish to see any changes or reductions in the primary allocations to the amateur and amateur-satellite services.

The IARU also notes that several agenda items include within their scope spectrum ranges that include secondary amateur and amateur satellite allocations. The IARU asserts that the amateur and amateur-satellite services have shared and coexisted successfully with the primary services within these bands without any difficulties for many years. Therefore, the IARU does not foresee any need for changes in the secondary amateur and amateur-satellite service allocations in these ranges.

Agenda Item 1.2

Text of agenda item

1.2 to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)**.

Resolution **245 (WRC-19)** calls for sharing and compatibility studies with primary users in the bands:

- 3 600-3 800 MHz and 3 300-3 400 MHz (Region 2)
- 3 300-3 400 MHz (amend footnote in Region 1)
- 7 025-7 125 MHz (globally)
- 6 425-7 025 MHz (Region 1)
- 10 000-10 500 MHz (Region 2).

Existing amateur and amateur-satellite service allocations in 3 300-3 400 MHz and 10.0-10.5 GHz

The amateur service has a secondary allocation in 3 300-3 400 MHz in Region 2 and 3. The amateur service has a secondary worldwide allocation in 10.0-10.5 GHz with the frequency band 10.45-10.5 GHz also allocated to the amateur- satellite service on a secondary basis.

History of the allocations to the amateur and amateur-satellite services

At the International Radio Conference, Atlantic City, 1947, in Region 2 the band 3 300-3 500 MHz was allocated exclusively to the amateur service. In Region 3 the band 3 300-3 900 MHz was allocated on a co-equal basis to the amateur, fixed, mobile, and radionavigation services. The band 10.0-10.5 GHz was allocated worldwide exclusively to the amateur service.

At the World Administrative Radio Conference, Geneva, 1959, the allocation of 3 300-3 500 MHz was changed to radiolocation primary and amateur secondary in Regions 2 and 3. The same change was made to the worldwide allocation of 10.0-10.5 GHz. Because the radiolocation and amateur services are generally compatible there was minimal impact on the amateur service despite the downgrade to secondary.

At the World Administrative Radio Conference, Geneva, 1979, amateur-satellite allocations were added at 3 400-3 410 MHz in Regions 2 and 3 (not affected by the Agenda Item) and at 10.45-10.5 GHz worldwide.

Use of the 3 300-3 400 MHz allocation by the amateur service

Most amateur activity in the 3 300-3 500 MHz band has occurred above 3 400 MHz. The allocation is secondary and in Regions 2 and 3 only; there is no amateur allocation of 3 300-3 400 MHz in Region 1. Activity in the 3 300-3 400 MHz segment is mainly low-power, point-to-point, broadband digital links.

Use of the 10.0-10.5 GHz allocation by the amateur and amateur-satellite services

The worldwide secondary 10.0-10.5 GHz allocation is the most heavily used amateur microwave allocation with the largest investment in equipment and antennas. The band supports terrestrial broadband digital fixed links, beacons used for propagation research, and two-way communication using a variety of propagation modes including tropospheric scatter, rain scatter, and Earth-Moon-Earth (“moonbounce”).

The geostationary QO-100 satellite downlink is in the 10.45-10.5 GHz band. The satellite is positioned at 25.8 degrees East and covers the eastern portion of Region 2 along with most of Region 1 and much of Region 3. It is in constant heavy use for both narrow band voice and data communications as well as wide band Digital TV applications. Amateur operations in the 10.0-10.5 GHz band are compatible with the other services to which the band is currently

allocated. The identification of the band for IMT in Region 2 would seriously impair the utility of the band for existing and anticipated future amateur applications.

Preliminary IARU position on WRC-23 Agenda Item 1.2

The IARU opposes the identification of the band 10.0-10.5 GHz for IMT in Region 2 as well as the introduction of a mobile service allocation in the region, which would be a necessary precursor to its identification for IMT. Spectrum sharing with a mass market deployment of mobile systems can be challenging and experiences have shown that the legal implications of national IMT licensing processes and service provider requirements tend to result in removal of national amateur service assignments which can severely affect the development of amateur radio.

Considering j) of Resolution 245 (WRC-19) notes that harmonized worldwide arrangements for IMT are “highly desirable;” it logically follows that an undesirable regional identification for IMT must be weighed against the continuing requirements of incumbent services. While studies are only invited with regard to the protection of primary services, *considering k) and l)* and *recognizing c)* of the resolution make no distinction between primary and secondary allocations with regard to the need to protect existing services. The use and evolving needs of the amateur and amateur-satellite services must not be overlooked as an undesirable regional arrangement for IMT is being considered. The IARU requests that the special status of 10.45-10.5 GHz as a worldwide amateur-satellite allocation with no mobile allocation be respected.

Agenda Item 1.12

Text of agenda item

1.12 to conduct, and complete in time for WRC-23, studies for a possible new secondary allocation to the Earth exploration-satellite (active) service for spaceborne radar sounders within the range of frequencies around 45 MHz, taking into account the protection of incumbent services, including in adjacent bands, in accordance with Resolution **656 (Rev.WRC-19)**;

Existing potentially affected amateur allocations and amateur usage

In Regions 2 and 3 a primary allocation to the amateur service of 50-54 MHz has existed for decades. WRC-19 adopted a secondary allocation in Region 1 of 50-52 MHz. Country footnotes provide primary status in numerous countries with a lower frequency limit of 50 MHz and upper frequency limits ranging from 50.5 to 54 MHz.

Amateur usage is documented in considerable detail in Report ITU-R M.2478, *Spectrum needs for the amateur service in the frequency band 50-54 MHz in Region 1 and sharing with mobile, fixed, radiolocation and broadcasting services*.

Preliminary IARU position on WRC-23 Agenda Item 1.12

The IARU believes that the studies for a possible new secondary allocation to the Earth exploration-satellite (active) service for spaceborne radar sounders within the range of frequencies around 45 MHz should include the need to protect the incumbent amateur service in the adjacent 50-54 MHz band. The IARU will contribute to the studies to ensure adequate protection of the sensitive receivers used by stations in the amateur service in the 50-54 MHz band, especially the frequencies 50-50.5 MHz where the majority of amateur communication via the ionosphere is conducted, often with very low signal levels.

Agenda Item 1.14**Text of agenda item**

1.14 to review and consider possible adjustments of the existing or possible new primary frequency allocations to EESS (passive) in the frequency range 231.5-252 GHz, to ensure alignment with more up-to-date remote-sensing observation requirements, in accordance with Resolution 662 (WRC-19);

Existing allocations to the amateur and amateur-satellite services in 231.5-252 GHz

Both the amateur and the amateur-satellite services have a secondary allocation from 241 GHz to 248 GHz and a primary allocation from 248 GHz to 250 GHz.

History and use of the allocations by the amateur and amateur-satellite services

The amateur and amateur-satellite allocations of 248-250 GHz (primary) and 241-248 GHz (secondary) were made at the 1979 World Administrative Radio Conference. The allocations have been used for terrestrial propagation experiments; communication over paths as long as 114 km has been achieved. No amateur satellites have utilized the allocation yet.

Preliminary IARU position on WRC-23 Agenda Item 1.14

The IARU supports retention of the 248-250 GHz primary allocations and the 241 – 248 GHz secondary allocations to the amateur and amateur-satellite services.

Within this frequency range there is ongoing experimentation by amateur service stations, which is expected to grow as technology and equipment availability improves. Any introduction of EESS into the 241-250 GHz frequency range should not unduly constrain the ongoing experimental use by the amateur and amateur satellite services in their secondary and primary allocations or their future development.

Agenda Item 1.18

Text of agenda item

1.18 to consider studies relating to spectrum needs and potential new allocations to the mobile-satellite service for future development of narrowband mobile-satellite systems, in accordance with Resolution **248 (WRC-19)**;

Resolution **248 (WRC-19)** calls for sharing and compatibility studies with primary users in the bands:

- 1 695-1 710 MHz in Region 2
- 2 010-2 025 MHz in Region 1
- 3 300-3 315 MHz, 3 385-3 400 MHz in Region 2.

Existing allocations to the amateur service in 3 300-3 400 MHz

The amateur service has a secondary allocation in 3 300-3 400 MHz in Region 2 and 3.

History and use of the allocation by the amateur service

At the International Radio Conference, Atlantic City, 1947, in Region 2 the band 3 300-3 500 MHz was allocated exclusively to the amateur service. In Region 3 the band 3 300-3 900 MHz was allocated on a co-equal basis to the amateur, fixed, mobile, and radionavigation services. At the World Administrative Radio Conference, Geneva, 1959, the allocation of 3 300-3 500 MHz was changed to radiolocation primary and amateur secondary in Regions 2 and 3. Because the radiolocation and amateur services are generally compatible there was minimal impact on the amateur service despite the downgrade to secondary.

Most amateur activity in the 3 300-3 500 MHz band has occurred above 3 400 MHz. Activity in the 3 300-3 400 MHz segment is mainly low-power, point-to-point, broadband digital links.

Preliminary IARU position on WRC-23 Agenda Item 1.18

The IARU supports retention of the amateur secondary allocation of 3 300-3 400 MHz in Regions 2 and 3.

Agenda Item 9.1 Topic A

Text of agenda item

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

9.1 on the activities of the Radiocommunication Sector since WRC-19:

- In accordance with Resolution **657 (Rev.WRC-19)**, review the results of studies relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors with a view to describing

appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services;

IARU position on WRC-23 Agenda Item 9.1 Topic A

The IARU notes that the scope of Resolution 657 is very broad. The systems described in Report ITU-R RS.2456-0 utilize radio frequencies from 13 kHz up to at least 15 GHz.

A significant proportion of amateur activity is directly affected by daily and longer-term variations in space weather. Consequently, amateurs have a significant interest in space weather and its impact on the ionosphere and radio wave propagation. At the same time, the amateur and amateur-satellite services are incumbent services with allocations in frequency bands ranging from 135.7 kHz to 250 GHz.

In considering potential new regulatory provisions for the recognition of space weather systems, additional constraints on incumbent services including the amateur and amateur satellite services must be avoided.

IARU will monitor developments in WP 7C and will contribute to inputs via WP 5A.

Agenda Item 9.1 Topic B

Text of agenda item

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

9.1 on the activities of the Radiocommunication Sector since WRC-19:

...

– Review of the amateur service and the amateur-satellite service allocations in the frequency band 1 240-1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service operating in the same band in accordance with Resolution **774 (WRC-19)**;

Assignment of studies to ITU-R Working Parties

Responsible group: WP 5A

Contributing groups: WP 3M, WP 4C (responsible for developing studies on *resolves to invite ITU R 2* and sending this to WP 5A)

History of the allocations to the amateur and amateur-satellite services

An amateur service allocation of 1 215-1 300 MHz was made on a primary, exclusive basis at the 1947 International Radio Conference in Atlantic City. At the World Administrative Radio Conference (WARC), Geneva, 1959, the allocation was changed to radiolocation primary and amateur secondary. narrowed to 1 240-1 300 MHz. At the 1979 WARC radionavigation-satellite (space-to-Earth) was added to 1 240-1 260 MHz as a primary service and an amateur-satellite allocation (Earth-to-space) was added at 1 260-1 270 MHz. The radionavigation-satellite service was added to 1 260-1 300 MHz at the World

Radiocommunication Conference, Istanbul, 2000. Also in 2000 the earth-exploration satellite service and space research service were added to 1 215-1 300 MHz as primary services but with certain constraints to protect other primary services including the radionavigation service, which is allocated by footnote in a very large number of countries.

Use of the band 1 240-1 300 MHz by the amateur and amateur-satellite services

The amateur service has a secondary allocation in the 1 240-1 300 MHz frequency band. The amateur-satellite service has a secondary allocation in 1 260-1 270 MHz (Earth-to-space).

A preliminary draft new Report ITU-R M.[AMATEUR.CHARACTERISTICS] is in preparation in ITU-R Working Party 5A. The current version of the working document is Annex 10 to Document 5A/221-E (Chairman's Report) dated 23 November 2020. The document provides a comprehensive illustration of how the band is used by amateurs.

Preliminary IARU position on Agenda Item 9.1 Topic B

During many years of operational experience, the secondary amateur and amateur satellite services have successfully co-existed with all the primary services in the range 1 240-1 300 MHz with very few issues. In cases where certain applications (in particular wide bandwidth, high duty cycle applications) could increase the potential for interference, careful spectrum management and national licensing conditions have minimised any risk. Radio amateurs have successfully co-existed and innovated in this frequency range for many years and IARU believes that the regulatory status of the amateur and amateur satellite services in this range is already clear. Therefore any additional regulatory, operational or technical measures incorporated into the Radio Regulations are unnecessary. Any recommendations resulting from studies under Resolution 774 can be applied on a national basis and should be based on realistic assumptions, proportionate in scope and carefully justified so as not to unnecessarily inhibit development of the amateur services.