

IARU Positions on WRC-15 Agenda Items

The International Amateur Radio Union (IARU) is a federation of national amateur radio associations in more than 160 countries and is the international organization recognized by the ITU under **CV 231** to represent the interests of the more than three million licensees in amateur and amateur-satellite services. The IARU is a Sector Member of the ITU Radiocommunication and Telecommunication Development Sectors.

To facilitate experimentation and communication by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest (No. **1.56**), the amateur and amateur-satellite services have been afforded frequency allocations at intervals throughout the radio spectrum from as low as 135.7 kHz to as high as 250 GHz.

The IARU has reviewed the agenda for the 2015 World Radiocommunication Conference contained in Resolution **807 (WRC-12)**. Some of the existing amateur and amateur-satellite service allocations, and in particular most of those between 225 MHz and 24 GHz, are on a secondary basis to other existing services. In general, the amateur services have been able to make constructive use of these secondary allocations without causing harmful interference to primary services. When allocations to new services in a band that is presently allocated to the amateur services are being considered it is important that the existing and likely future uses of the band by the amateur services be taken into account, whether the amateur service allocation is on a primary or a secondary basis.

The IARU has adopted the following positions with regard to the agenda items that are relevant to the amateur and amateur-satellite services.

Agenda Item 1.1 – “to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**;”

IARU Position: The IARU recognizes that there is great pressure on the portion of the radio spectrum that is best suited for terrestrial mobile broadband applications. The amateur service allocations between 450 MHz and 6 GHz are all on a secondary basis to other existing services. The amateur-satellite service allocations in this frequency range are on either a secondary or a not-to-interfere basis.

The existing allocations to the amateur service in this frequency range are 902-928 MHz (in Region 2), 1240-1300 MHz, 2300-2450 MHz, 3300-3500 MHz (in Regions 2 and 3 along with 3400-3475 MHz in certain countries in Region 1), and 5650-5925 MHz (5650-5850 MHz in Regions 1 and 3).

The existing allocations to the amateur-satellite service in this frequency range are 1260-1270 MHz (Earth-to-space only), 2400-2450 MHz, 3400-3410 MHz (in Regions 2 and 3 only), 5650-5670 MHz (Earth-to-space only), and 5830-5850 MHz (space-to-Earth only).

The identification of 2300-2400 MHz for the possible implementation of IMT is already placing significant constraints on the use of this band by amateurs. The band 3400-3500 MHz is already identified for the possible implementation of IMT, subject to certain constraints, in a number of countries in Regions 1 and 3.

European Common Frequency Allocation Table Footnote EU17 provides: “In the sub-bands 3400-3410 MHz, 5660-5670 MHz, 10.36-10.37 GHz, 10.45-10.46 GHz the amateur service operates on a secondary basis. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.”

As consideration is given to the identification of additional frequency bands for IMT, or for the extension of bands already so identified to additional countries or regions, care must be taken to maintain useful access to the radio spectrum at suitable intervals by the amateur and amateur-satellite services.

Agenda Item 1.4 – “to consider possible new allocation to the amateur service on a secondary basis within the band 5 250 - 5 450 kHz in accordance with Resolution **649 (WRC-12)**;”

IARU Position: The addition of a new allocation within the band 5250 – 5450 kHz is a high priority for the amateur service. Resolution **649 (WRC-12)** explains why:

- Communications in the HF bands allocated to the amateur service play a major role in work to mitigate catastrophes and in the delivery of communications in support of relief operations in areas where the telecommunication infrastructure is weak or has collapsed.
- Radiocommunication in the HF bands is dependent on propagation factors, with the result that frequencies in different bands have to be used.
- For amateur stations using typical antennas and power levels, it is important that the maximum usable frequency (MUF) not be excessively above the operating frequency.
- In the current allocations to the amateur service in the HF bands there is a significant gap between 4000 kHz (3800 kHz in Region 1 and 3900 kHz in Region 3) and 7000 kHz, which causes problems in maintaining communications when the MUF falls below 7 MHz.

Resolution **649 (WRC-12)** invites WRC-15 to consider “the possibility of making an allocation of an appropriate amount of spectrum, not necessarily contiguous, to the amateur service on a secondary basis within the band 5 250-5 450 kHz” based on the results of ITU-R studies of spectrum requirements for the amateur service and the impact to other services currently allocated in this band and adjacent bands.

In response to Agenda Item 1.15 WRC-12 created a new allocation of 5250-5275 kHz (among others) for the radiolocation service, limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. The CPM Report for WRC-12 concluded that for oceanographic radars, “Sharing with amateur, broadcasting, and radio astronomy services seems to be difficult due to their protection requirements.” With respect to sharing with the amateur service the difficulty arises mainly because the operation of an oceanographic radar on a particular frequency is expected to be more or less continuous (see Recommendation ITU-R M.1874-1), offering no opportunity for time-sharing. By contrast, the operation of an amateur station is both intermittent in time and variable in frequency to adjust to changing propagation conditions and to avoid interference.

In considering the “appropriate amount of spectrum” to the amateur service it should be borne in mind that the administrations wishing to implement an amateur allocation domestically as well as the amateur operators desiring to utilize it will benefit from there

being the greatest possible flexibility afforded by the international Table of Frequency Allocations.

An allocation to the amateur service within the band 5250-5450 kHz is envisioned to be on a secondary basis. Stations of a secondary service must operate so as to avoid causing harmful interference to stations of primary services. In the aftermath of a major natural disaster afflicting a region in which several languages are spoken the IARU estimates that there could be a need for amateur networks in the 5 MHz band to use approximately 16 separate frequencies simultaneously, each with a bandwidth of approximately 3 kHz, in order to provide voice and data communications. While this suggests that an “appropriate amount” of spectrum might be less than the 200 kHz suggested above, in such a situation the selection of operating frequencies by amateurs will be constrained by the need to avoid frequencies occupied by stations of primary services.

Further, as amateur communication increasingly uses digital modes of emission, inter-symbol distortion caused by multipath propagation requires choice of an operating frequency as near as possible to the MUF.

Accordingly, the IARU requests that consideration be given to a secondary allocation of as much spectrum as possible within the band 5250-5450 kHz.

Agenda Item 1.6.1 – “(to consider possible additional primary allocations) to the fixed-satellite service (Earth-to space and space-to-Earth) of 250 MHz in the range between 10 GHz and 17 GHz in Region 1;”

IARU Position: The band 10.0-10.5 GHz is allocated to the amateur service on a secondary basis. It is a popular band for amateur experimentation, investigation of propagation phenomena, and point-to-point communication between networked repeater stations.

The band 10.45-10.5 GHz is allocated to the amateur-satellite service on a secondary basis. Owing to the popularity of the 10.0-10.5 GHz band for terrestrial amateur communication, increased use of this allocation for amateur satellite communication is anticipated.

European Common Frequency Allocation Table Footnote EU17 provides: “In the sub-bands 3400-3410 MHz, 5660-5670 MHz, 10.36-10.37 GHz, 10.45-10.46 GHz the amateur service operates on a secondary basis. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.”

The IARU requests that existing and future use of this band be taken into account and continue to be provided for.

Agenda Item 1.10 – “to consider spectrum requirements and possible additional spectrum allocations for the mobile-satellite service in the Earth-to-space and space-to-Earth directions, including the satellite component for broadband applications, including International Mobile Telecommunications (IMT), within the frequency range from 22 GHz to 26 GHz, in accordance with Resolution **234 (WRC-12)**;”

IARU Position: Above 440 MHz, the band 24.0-24.05 GHz is the lowest frequency primary allocation to the amateur and amateur-satellite services. The next lowest primary allocation is at 47.0-47.2 GHz. The 24.05-24.25 GHz band is allocated to the amateur service on a secondary basis. While the designation of the 24.0-24.25 GHz band for ISM applications and the high water vapor absorption at this order of frequency create challenges, amateurs are actively pursuing experimentation in this band. Maintaining the primary allocation and assuring that any new services introduced into the band are compatible with the amateur and amateur-satellite services is essential for the continuing contribution by radio amateurs to the body of experience and knowledge of microwave equipment construction, operation, and propagation research.

Agenda Item 1.12 – “to consider an extension of the current worldwide allocation to the Earth exploration-satellite (active) service in the frequency band 9 300 - 9 900 MHz by up to 600 MHz with the frequency bands 8 700 - 9 300 MHz and/or 9 900 - 10 500 MHz, in accordance with Resolution **652 (WRC-12)**;”

IARU Position: As noted under Agenda Item 1.6.1, the band 10.0-10.5 GHz is allocated to the amateur service on a secondary basis. It is a popular band for amateur experimentation, investigation of propagation phenomena, and point-to-point communication between networked repeater stations.

The band 10.45-10.5 GHz is allocated to the amateur-satellite service on a secondary basis. Owing to the popularity of the 10.0-10.5 GHz band for terrestrial amateur communication, increased use of this allocation for amateur satellite communication is anticipated.

The IARU requests that existing and future use of this band be taken into account and continue to be provided for. An illustration of how this can be accomplished is found in Recommendation ITU-R RS.1260-1; see No. **5.279A** which applies to the use of the band 432-438 MHz by the Earth exploration-satellite service (active).

Agenda Item 1.18 – “to consider a primary allocation to the radiolocation service for automotive applications in the 77.5 - 78.0 GHz frequency band in accordance with Resolution **654 (WRC-12)**;” and

IARU Position: Currently the only primary incumbent services in the band 77.5-78.0 GHz are the amateur and amateur-satellite services. These services also have secondary allocations in the adjacent bands of 76.0-77.5 GHz and 78.0-81.5 GHz. Amateur experimentation in the band is ongoing.

When allocations to services between 71 GHz and 84 GHz were made for the first time at WARC-79, the amateur and amateur-satellite services received a primary and exclusive allocation of 75.5-76.0 GHz and a secondary allocation of 76.0-81.0 GHz. The allocation of 75.5-76.0 GHz was withdrawn at WRC-2000 and as compensation the band 77.5-78.0 GHz was upgraded to primary and No. **5.561A** was added, creating a new secondary allocation to the amateur services at 81.0-81.5 GHz.

The IARU acknowledges that there are significant benefits to be gained from worldwide standards for technologies such as automotive radars. However, automotive radars are classic examples of short- range devices (SRDs) for which, in general, allocations are neither essential nor appropriate.

Should a primary allocation to the radiolocation service for automotive applications nonetheless be added to the 77.5 – 78.0 GHz frequency band, the IARU earnestly requests that the primary allocation to the amateur and amateur-satellite services be maintained; or, in the alternative, that a suitable replacement allocation be provided on a primary basis within the band 71 – 84 GHz.

Agenda Item 8 – “to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution **26 (Rev.WRC-07)**,”

IARU Position: There are a number of country footnotes that apply to amateur service allocations, some of which appear to be obsolete. In particular, the IARU invites the administrations listed in Nos. **5.98, 5.99, 5.102, 5.119, and 5.122** relating to the bands 1810-1830 kHz, 1850-2000 kHz, 3500-3750 kHz, and 3750-4000 kHz to consider proposing the deletion of their country names from these footnotes.

Agenda Item 9.1.4 – Updating and rearrangement of the Radio Regulations (Resolution **67 (WRC-12)**)

IARU Position: The scope of ITU-R “studies for possible updating, review and possible revision of outdated information” in the Radio Regulations envisioned by Resolution **67 (WRC-12)** does not exclude Article **25, Amateur services**. Article **25** was last revised by WRC-03 and is not reviewed for possible revision on a regular basis.

Article **25** includes restrictions on communications by amateur stations on behalf of third parties that are clearly outdated in view of the vast array of telecommunications alternatives now available to individuals. Specifically, No. **25.3** states: “Amateur stations may be used for transmitting international communications on behalf of third parties only in case of emergencies or disaster relief. An administration may determine the applicability of this provision to amateur stations under its jurisdiction.”

Restrictions on international communications by amateur stations on behalf of third parties date to the 1932 International Radiotelegraph Conference held in Madrid and originally were intended to protect the revenues of telecommunications monopolies and to discourage “uneconomic bypass” of common carriers. Such concerns are no longer relevant, and No. **25.2** is sufficient to protect the non-commercial nature of the amateur service. No. **25.2** reads: “Transmissions between amateur stations of different countries shall be limited to communications incidental to the purposes of the amateur service, as defined in No. **1.56** and to remarks of a personal character.”

In the absence of a determination by an administration that the limitation on international communications on behalf of third parties to cases of emergencies or disaster relief does not apply to amateur stations under its jurisdiction, amateurs under the jurisdiction of that administration as well as amateurs communicating with them from other jurisdictions are prohibited from conducting even the most mundane and routine communication on behalf of friends, family members and the general public. This has a chilling effect on demonstrations of the amateur service to the public as well as on training exercises to develop skills for use in emergencies and disaster relief.

Accordingly, the IARU supports the revision of No. **25.3** to read: “Amateur stations may be used for transmitting international communications on behalf of third parties consistent with No. **25.2** as well as in case of emergencies or disaster relief.”

Agenda Item 9.1.8 – Regulatory aspects for nanosatellites and picosatellites (Resolution **757** (WRC-12))

Resolution **757** calls for the results of studies of the procedures for notifying space networks that presently apply to nanosatellites and picosatellites to be reported to WRC-15. Because of the possible implications of these studies for the amateur and amateur-satellite services, the IARU is following the progress of these studies attentively. Nanosatellites and picosatellites that are properly licensed in the amateur-satellite service and are operated consistent with the purposes of the amateur and amateur-satellite services as defined in Nos. **1.56** and **1.57** may utilize the provisions of Resolution **642**.
