



International Amateur Radio Union Region 1

Europe, Middle East, Africa and Northern Asia

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SUBJECT	Integrating the 5 MHz WRC-15 Allocation with Existing Usage		
Society	RSGB	Country:	UK
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Introduction

The IARU achieved a new secondary allocation of 15 kHz between 5351.5 - 5366.5 kHz for the amateur service at WRC-15. This new allocation complements existing amateur service use of the band under various article 4.4 arrangements in several countries.

The purpose of this paper is to encourage discussion on a band plan for this new allocation that could be adopted worldwide, and how it might be integrated with existing usage on the band.

Background

The amateur service has had access to the 5 MHz band in some countries for more than 10 years. Initially, this was limited to a few spot frequencies in a few countries, but gradually larger segments of frequencies have become available and more countries have gained access to the band.

There is wide disparity in the frequencies authorised at 5 MHz, with some countries having only a few spot frequencies and others having access to 100 - 200 kHz of spectrum. The UK has access to 71.5 kHz of spectrum in 11 non-contiguous segments. The current 5 MHz plan in the UK can be seen at <http://rsgb.org/main/operating/band-plans/hf/5mhz/>

As a result of this, there has been no formal band plan created but certain frequencies have become associated with various modes and activities. Some countries, notably Spain, have already authorised access to the new segment from 5351.5 - 5366.5 kHz and it is expected that more will rapidly follow.

Experience with band planning on other HF bands has shown that it is highly desirable to have consistent band plans across regions, especially for certain modes where there is an expectation of worldwide propagation on a daily basis. 5 MHz falls into this category. CW and weak signal modes in particular should have coordinated frequencies worldwide. It is also desirable to have some SSB segment that is compatible with operation in all regions.

A large problem exists in planning a very small 15 kHz segment in that there will not be sufficient space for every mode to have its own allocation. This is already proving to be a problem in other HF bands which are much wider than the 5 MHz allocation. There will need to be some sharing of frequencies across modes and some flexibility in the segment boundaries should be expected and accepted.

It is expected that in some jurisdictions, existing article 4.4 arrangements will continue and this may provide some solutions to potential overcrowding in the WRC-15 segment, particularly at a local level.

Proposal

It is proposed that a fairly simple band plan be adopted that allows for all modes over most of the band. However, it would seem desirable to have at least small sub-segments for CW and low power weak signal work.

Additionally, there is already some existing activity within the new allocation and, given the difficulty of changing existing behaviour, it should also be possible to try and accommodate existing use of the band with the new plan.

The proposal below is suggested as a template for discussion and it should not be limited to Region 1. As already mentioned, harmonisation across all regions is highly desirable so effort should be made to achieve consensus.

5351.5 - 5354 kHz CW

5354.0 - 5366 kHz All modes, USB recommended for voice operation

5366.0 - 5366.5 Weak Signal modes

5351.5	5354	5357	5360	5363	5366
CW	All Modes				WS
200 Hz	2700 Hz				

This plan is intentionally very simple as the band is too narrow for any detailed planning.

It provides separation for CW at the lower end of the band as well as a segment of at least 500 Hz at the top of the band for weak signal modes. Whilst this may seem small, in practice 500 Hz can accommodate a great many WSPR and JT9 type signals. The definition of a weak signal mode in this instance means narrow band signals of <<100 Hz occupied bandwidth at or below the noise level. It could also include signals such as QRSS CW. Modes such as PSK31 or JT65 probably fall outside this definition as the occupied bandwidth is too large.

The 12 kHz between 5354 - 5363 kHz is left unplanned, but fits well with existing USB usage on the suppressed carrier frequencies of 5354, 5357 and 5363 kHz all of which are used today in some areas under existing article 4.4 arrangements. SSB channels fit well at 5354, 5357, 5360, and 5363, or, more likely, operators will simply find a clear frequency on the VFO as is normal on other bands, which could allow also additional QSOs if some QRM is accepted.

Note also that the power limit of 15 W eirp should help mitigate potential QRM issues.

The concept of separating weak signal modes from other digital modes is new, but it is becoming increasingly clear that these modes are extremely susceptible to co-channel interference regardless of mode and that some separation from other modes is highly desirable. Allocating a narrow segment at the top of the band makes it less likely that strong signals would interfere, for example, if USB is restricted to 5363 kHz as the highest frequency, it is unlikely that any other strong signal would fit in such a narrow segment.

An important point that should not be overlooked is that quite a few countries have access to other frequencies at 5 MHz under article 4.4. It should be emphasised that the narrow 15kHz WRC-15 segment should only be used if other frequencies are not available. In particular, local nets, rag chews, and experimentation should not use the 5351-5 - 5366.5 kHz segment if other frequencies are available. As an example, the frequency of 5403.5 kHz is also used in many countries and has become a de facto DX channel between Europe and North America after dark; if access to this frequency continues, there is less reason to use the WRC-15 allocation for the same purpose.

Recommendation

That IARU Region 1, in conjunction with Region 2 and Region 3, develops a simple harmonised band plan for the new 5 MHz band which allows for common frequencies for CW, SSB and weak signal modes worldwide.

The plan presented above is a considered starting point which attempts to combine the existing use of the band with the objectives set out in this paper, but could be developed or modified as required.