

World Radio Conference WRC-19: CEPT Prepares

The final CEPT Conference Preparatory Group (CPG) meeting prior to WRC-19 took place in the last week of August in Ankara and reached a key stage for 50MHz, 144MHz and microwave bands. This crucial meeting sets the European Common Positions (ECPs) for all topics as we now head into WRC-19 later in October. Most of its papers are now available online, including on current hot topics in the 6m, 2m and 23cm bands, where RSGB volunteers have been working hard to support the IARU.

Following WRC-15 (where the main amateur interest was 5MHz), the years since has seen most focus on an important WRC-19 agenda item for 50MHz as well as a raft of other items, including Wireless Power and microwave bands. However, a key feature of the tail-end of a WRC preparatory process are the proposals that would set the agenda for the following conference – WRC-23. This latter aspect has seen numerous headlines as both the 2m and 23cm bands have come under intense pressure. This edition of RSGB Matters bring you the background and latest results on these, although of course it may all change at WRC itself – so watch out for the next exciting instalment...

WRC-19: 50MHz in Region 1

Unusually for a WRC, the very first Agenda Item of WRC-19 (AI-1.1) is for an amateur radio topic. The aim is to facilitate harmonisation of the 6m band by making 50MHz an amateur allocation at ITU level across all of Region 1 – Europe, Africa and the Middle East.

Despite UK amateurs getting permission in the 1980s – the band is not a formal ITU allocation. Despite early hopes, the topic has been far from straightforward in CEPT with determined opposition from France, Switzerland and Russia. Under Ofcom's neutral stance, RSGB has supported IARU efforts by attending four years of difficult meetings in CEPT Project Team D (PTD). These have addressed both spectrum requirements (including innovative digital technologies for DATV and data nets) as well as sharing and interference concerns with other services. Whilst the lower segment of the band is known for Sporadic-E and DX (thus the 'magic band' moniker), studies tried to avoid that and yet propagation models still proved troublesome with countries demanding huge protection distances for flat conditions and negligible background noise.

With severe opposition to a wider Primary allocation, the exercise has culminated in a compromise ECP for WRC-19 in which the default would be 50-52MHz Secondary. However it also includes an optional footnote that we hope will be signed by as many administrations as possible to allow amateurs Primary access on a national basis in the lower part of the band at 50.0-50.5MHz. Both the RSGB and the UK Six Metre Group have requested Ofcom to sign the footnote to maintain our own privileges in the DX segment.

Outcome: 50MHz: A positive result. CEPT confirmed its common position for an overall 50-52MHz secondary allocation for ITU Region 1. Following requests from both the RSGB and the UK Six Metre Group to Ofcom, we are pleased to report that the UK signed an optional footnote in the CEPT proposal for national Primary status in the 50 to 50.5MHz segment, along with a number of other countries.

WRC-23: 144-146MHz for Aeronautical use

As *RadCom* readers will be aware, the 144-146MHz band has been subject to the recent French WRC-23 proposal for non-safety aeronautical use. IARU and its Member Societies have been busy in recent weeks in trying to counter this.

The RSGB and DARC in particular, assisted the IARU with its submission of a key paper to the CEPT meeting. This included background on amateur usage, regulatory concerns and a basic technical analysis.

The IARU paper clearly had some impact as, prior to the meeting, this was first countered by a follow-up French paper, but then a late German information paper again repeated their helpful opposition to the idea.

Outcome: 144MHz: After a major effort, the 144 to 146MHz frequency range was successfully withdrawn from the French WRC-23 aeronautical proposal. This hot topic had been the subject of detailed submissions by the IARU, France and Germany. This excellent result for amateur radio occurred in parallel to a number of other proposals being adopted to support aeronautical interests.

WRC-23: 1240-1300MHz

There is a WRC-23 agenda item proposal to study the amateur usage of the band 1240-1300MHz ahead of WRC-23 with a view to consider measures need to protect the Galileo satellite navigation system. This system operates over a number of ranges but one downlink signal, known as 'E6', operates over the range 1260-1300MHz overlapping the amateur 23cm band, which has a global Secondary allocation at 1240-1300MHz, with satellite uplinks permitted in 1260-1270MHz.

For amateurs interested in exploring the microwave bands, 23cm is a good entry point. There are several commercially available transceivers offering the band and the recently released Icom IC-9700 is a good example. Transverters in ready-built and kit forms are readily available for operation in conjunction with a 144MHz or 28MHz transceiver. SDR receiving dongles (such as the RTL2832U) can provide an inexpensive window onto the band as a starting point. Full transceiver-capable SDRs for experimentation and homebrewing for 23cm and above is also possible with for example the LimeSDR.

All the traditional narrowband activities can be found in this band at ~1296MHz and it is a key band for wider bandwidth data, amateur television simplex and repeater operation with an emphasis nowadays on digital amateur television (DATV). There are over 20 TV repeaters around the UK in this band as well as 10 voice repeaters and 10 propagation beacons. The UK is fortunate that the 23cm band is extended up to 1325MHz on a national basis and this spectrum is used for TV repeater outputs. Without this, other countries may find it challenging to accommodate wideband modes such as ATV.

The Amateur Service has a "Secondary" status according to the ITU-R Radio Regulations and is therefore duty bound to not cause interference to the Primary band services (which include the Radio Navigation Service, as well as radars). Following a few interference incidents in Europe, the purpose of the proposed ITU studies ahead of WRC-23 would be to evaluate global regulatory measures that could ensure the amateur service can continue to meet the non-interference requirement. At best this may result on some careful re-planning of the amateur band usage, but at worst could result in the Amateur Service allocation being removed from the band.

The IARU and the RSGB agree that some action will be needed by the Amateur Service but they have been pushing back on the proposals for a WRC agenda item as there is an alternative activity already underway to carry out studies at a European level. This is a better environment for the studies away from the political and sometimes unpredictable ITU-R WRC arena. The IARU has been strongly supporting this approach instead and believes that the needs of all the concerned parties can be served more efficiently with this way forward.

Outcome: Following intense discussions and European Commission pressure, a WRC-23 proposal was considered necessary to ensure the protection of new satellite navigation systems such as Galileo from amateur emissions in

the 1240-1300MHz range. The draft Resolution that would guide such studies excludes the removal of the existing amateur Secondary allocations.

WRC-19: 5GHz

RSGB and IARU volunteers have been working hard to achieve positive results for the Amateur Service in other microwave bands coming under the spotlight. Wi-Fi expansion at 5GHz is the topic of Agenda Item 1.16 and overlaps the amateur Secondary allocation at 5725-5850MHz. This item has been an example of how difficult it is to lobby for amateur radio when you are Secondary.

Outcomes: In most microwave bands it is pleasing to report that the CEPT positions adopted should result in no further regulatory change to the amateur 5GHz Secondary and 47GHz Primary allocations, as well as innovative UK usage above 275GHz.

WRC-19: 24/47GHz

The next generation 5G mobile phone services are seeking more spectrum and the amateur bands at 24GHz and 47GHz have been within the scope of discussions for AI-1.13. The regional positions on these bands are starting to crystallise and are heading in a good direction for the Amateur Service, assisted by our Primary status.

WRC-19: >275GHz

The millimetre wave bands above 275GHz offer the greatest potential for innovation (see GHz Bands on p76 for recent progress at 288GHz). Internationally these bands are not specifically allocated to the amateur (or any other) services although access by 'active services' is possible. Agenda Item 1.15 reviews the 275-450GHz range and IARU has been working to maintain this freedom for the Amateur Service whilst other sectors have been seeking specific bands. The pressure to allocate bands in these higher regions is likely to increase in years to come as demand emerges from 5G backhaul, wireless sensors and even 6G.

Comments on outcome

Commenting on the overall outcome, IARU Region 1 President Don Beattie, G3BJ praised the IARU team of volunteers and their contributions; and was pleased that regulators had recognised the strength of the amateur case.

RSGB President Dave Wilson, MO0BW also thanked the great work of the RSGB team members and wider international effort. This has been sustained not just in recent weeks, but over the past few years, with research, papers, meetings and support to the IARU – showing the value of membership and highlighting the volunteer effort.

– and the next exciting episode? WRC-19 is 28 October to 22 November. Further info is at www.rsgb.org/wrc-19