WRC-19: Observations and outcomes

Peter Pokorny VK2EMR & Dale Hughes VK1DSH

Introduction

The International Telecommunication Union's (ITU) 2019 World Radiocommunication Conference (WRC-19) was held over four weeks in Sharm El-Sheikh, Egypt, between 28 October and 22 November 2019. Over 3300 delegates from some 150 countries attended WRC-19 to negotiate revisions to the global treaty known as the ITU Radio Regulations (RR). Each WRC-19 agenda item was discussed in meetings where the aim was to reach consensus on proposed changes to the Radio Regulations. This process was lengthy and often arduous.

In the week immediately prior to WRC-19, the ITU's Radiocommunications Assembly 2019 (RA-19) was held at the same venue. RA-19 approved many Recommendations and Reports and submitted its report to the WRC-19, marking the end of the ITU-R study period. Immediately after WRC-19, there will be held the first Conference Preparatory Meeting for WRC-23 (CPM23-1) lasting two days.

The structure of each WRC is hierarchical, with the detailed negotiations and crafting of draft regulatory text addressing each WRC agenda item undertaken in Sub-Working Groups which reported to Working groups, etc. The resulting regulatory text then passed through meetings of Working Groups, Committees and Plenaries. The text was subject to detailed scrutiny and often revised as it passed through each level before being approved after two readings in a plenary meeting. This structure is described below:

Meeting	**Function**
Plenary	Gives final approval to new Radio Regulations or revision of existing regulations.
COM 2,3,5,6,7 etc.	Committees covering credentials, finance, satellites and editorial issues. (attendance at these was on an 'as required' basis).
COM 4	The Committee covering terrestrial issues: amateur, aviation, maritime issues.
WG 4C	The Working Group covering maritime and amateur issues
SWG 4Cx	The Sub-Working Group covering WRC-19 agenda item x.
WG 6B	The Working Group covering future agenda items.

Most readers are aware of several WRC-19 agenda items of importance to amateurs and by the end of the Conference they were resolved to the extent possible. Technology and global politics continue to evolve, and this inevitably means that we may have to address some issues again at future WRCs, but for now the results are acceptable to the amateur service.

The Australian Government delegation was hosted by The Department of Communications and the Arts (DOCA). DOCA issued an invitation to the WIA, as the peak body for radio amateurs in Australia, to join the Australian delegation to WRC-19

Peter Pokorny VK2EMR (Weeks 1-2) and Dale Hughes VK1DSH (Weeks 1-4), as members of the Australian delegation nominated by the WIA, attended WRC-19 to take part in the negotiations. Both Peter and Dale took an active role in many meetings and presented Australia's view on relevant agenda items. This was the conclusion of four years of preparatory work that started just after WRC-15 concluded.

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The conference venue

Sharm El-Sheik itself is located on a relatively narrow strip of sandy land between the Red Sea and the mountains of south Sinai at the tip of the Sinai Peninsula in Egypt, facing the Straits of Tiran at the mouth of the Gulf of Aqaba, and just getting here was an adventure. The city is hot, dry and dusty and suffering from evident decay following the fall in tourist traffic after terrorist attacks some years ago. The conference facility (officially the Sharm El-Sheikh International Congress Center (SHICC)) and nearby hotels are surrounded by multiple rings of security consisting of police checkpoints, machine gun posts and roadblocks. An Egyptian navy gun-ship patrols off-shore and armed helicopters occasionally fly over the area. Entry to the conference facility is through two sets of check points with identity checks, metal detectors and X-ray machines. Entry to the hotels is similar and all vehicles are checked by security staff and sniffer dogs. It's a far cry from the more relaxed atmosphere of Geneva. Many delegates found the layout of the conference centre confusing at first, but by the end of Week 2, most were comfortable with the location of over 30 meeting rooms with names such as Abu Simbel, Capital, Summit, Sinai, Suez Canal, El Farouz, Red Sea, El Salaam, St. Catherine, El Alamin, Sphinx, Nile Valley, etc.

Considering the complex IT systems to support all electronic documents and the requirement to run many parallel meetings in the six official languages of the United Nations the conference facilities have worked very well. The Egyptian administration has been a gracious host and delivered completely satisfactory transport, logistics and security arrangements.

Despite the activities at the nearby Conference centre, the hotel resorts host a steady stream of international tourists, soaking up the sun, and enjoying pursuits such as snorkelling and scuba diving on the coral reefs in clear blue waters. Often overhead were passenger jets from the nearby Sharm El-Sheikh International Airport.

Relevant WRC-19 agenda items

An early success for amateurs was removal of the 47 – 47.2 GHz frequency band from the list of frequency bands under consideration for allocation to International Mobile Telecommunications (IMT) applications.

An issue that arose unexpectedly was the proposed suppression of ITU-R Resolution 642 which covered the amateur-satellite service. It took some quick work in various national delegations and regional groups to oppose the suppression and this was achieved. A related agenda item (1.7) of interest to the amateur-satellite service was for additional spectrum for short duration satellite missions (CubeSats etc.) because additional spectrum for these missions would reduce pressure on the amateur bands (particularly the 2 m band) that many of these missions are using even though they don't fit well with the definition of the amateur service. This agenda item was surprisingly contentious and it took many meetings to reach agreement on a new allocation, of two frequency bands, for satellites with short duration missions. The critical thing here is that the use of the frequencies within the allocation does not require the same level of time-consuming geographic coordination (for interference protection) required by most other satellite missions. The new allocation provides for transmissions in the space-to-Earth direction in the 137 – 138 MHz band and for Earth-to-space in the 148 – 149.9 MHz band. This is a good outcome for amateurs.

Agenda item 9.1.6 (Wireless Power Transmission for Electric Vehicles) was of great concern to amateurs because of the potential for poorly engineered WPT-EV systems to cause serious Radio Frequency Interference. After much work in various national and regional meetings, along with work at WRC-19 there were no changes made to the Radio Regulations (at least at this WRC) to

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accommodate WPT-EV systems. However, this is not the end of the issue and it was agreed studies should continue via ITU-R Study Group 1 in collaboration with various organisations which develop product and emission standards so that WPT-EV products are engineered and installed in such a way so that they don't cause RFI. These issues were early successes and the real hard work is yet to come, and it was recognised that the studies are not complete.

The key WRC-19 agenda item of interest to Region 1 amateurs was the allocation of 2 MHz of spectrum (50-52 MHz), on a secondary basis, to the amateur service in Region 1. This allocation is now listed in the table of frequency allocations (Article No. **5**) of the Radio Regulations. There is also now a complex set of footnotes (to the entry in RR No. **5**) which allows for a 4 MHz primary allocation (50-54 MHz) in many African countries and some other variations e.g. 500 kHz Primary/1500 kHz secondary and 2 MHz Primary in some countries as well as providing protection to other services across the region.

Given the range of proposals made by many countries, reaching consensus of the issue was challenging and it took 10 meetings of Sub-Working Group 4C1 (chaired by Dale VK1DSH) to deal with the issue, along with several meetings of higher-level groups. Towards the end of the process a political roadblock arose which halted progress for a while; this roadblock concerned the murky politics of the middle-east and it took the efforts of the ITU legal branch to overcome the problem so that the draft regulatory text could approved in a plenary meeting. The path to a frequency allocation in the Radio Regulations is never straightforward or easy, and international politics always lurks just below the surface.

The above work took place in the first two and a half weeks of the conference. The challenge in the remaining week and half was deciding what agenda items might be selected for the 2023 conference (WRC-23) and even WRC-27. Given the finite resources available, each WRC can only deal with a limited number of agenda items so it was necessary to attend many lengthy and complicated meetings to decide which agenda items would be selected. (One meeting ran until mid-night and the next evening the meeting ran to 3:15 AM) While there are no new allocations being proposed for the amateur service there are many potential threats to our existing bands, so it was necessary to be part of the process to defend what we have. Each national delegation decides what it will support or oppose, this information then feeds into the various regional groups who then decide what they might support or oppose. Ultimately the selected topics are discussed in Committee 6 where the final decision was made and then approved by a Plenary meeting.

One topic was of great concern to amateurs and that was a proposed review of the 1240 – 1300 MHz frequency band as it is shared by the amateur service and the radio navigation satellite service (RNSS), most notably the European Galileo system. The view of the amateur representatives at WRC-19 is that, as the amateur service is a secondary service in that band, the review was unnecessary, however there was strong push from the European Commission, France and others that a review was required to protect evolving RNSS applications. After a very late meeting the compromise result was that a study of the band will occur; the study will cover typical amateur application and how they might share with the Galileo system, with the specific provision that no changes to the regulatory text of the Radio Regulations will be made i.e. the allocation will remain. It was necessary to argue the case in national delegations and regional groups against a specific agenda item covering the issue because that might imply regulatory changes. In the end it was a delicate compromise to accept doing the report and having to undertake the necessary work at ITU-R working parties to assess the potential for interference, and possible mitigation measures, while keeping the allocation. It's worth noting that wideband modes like analogue television systems are likely to be the main problem because under the existing 23 cm band plan they overlap the Galileo centre frequency, narrow band modes appear to be much less of a potential problem.

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Other WRC-23 agenda items also cover some amateur bands including the 10 – 10.5 GHz band, and this will require work at national and regional meetings as well as at ITU-R in the years leading up to WRC-23. This is very similar situation to WRC-19 where a number of amateur bands may have been affected by IMT applications.

Participation in WRC-19 by amateurs

As the amateur and amateur-satellite service is recognised under the Radio Regulations (see RR Nos. **1.56, 1.57** and Article No. **25**) there is a need to attend WRCs to advance the needs of the amateur service, either by striving for new bands or to protect existing bands. Such work is undertaken by amateurs who are part of national delegations (like Peter and Dale) or as representatives of the IARU, however as each WRC is a meeting of sovereign states, the IARU has observer status and cannot usually take a direct part in negotiations.

However, amateurs who are part of national delegations and are designated coordinators or negotiators can take an active part in the meeting discussions, so their attendance at a WRC is critical to success. The importance of the IARU is that it provides a focus for amateur views and helps ensure that amateurs speak with a united voice which is essential for any success; also, the meeting chair may invite the IARU to provide information or views as appropriate.

An additional reason for attending WRC is that it allows the representatives of the amateur service to build personal relationships with other delegates which is essential to working together in a constructive way, especially since many amateur bands are shared with other services. Establishing areas of common interest and trying to address concerns in an informal way before going into formal meeting assists all parties in reaching consensus.

As noted, the IARU has a strong presence, and along with delegates covering issue of interest to the amateur service, all important topics are being covered. Peter thanks the WIA for its support and funding his attendance at WRC-19 and Dale thanks the WIA for its ongoing support of this work and IARU International Secretariat for its support and funding of his WRC-19 attendance.

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Delegates representing amateur interests at WRC-19 (the IARU team): Ken Yamamoto (Japan), Hans Blondeel Timmerman (Netherlands & CEPT), Dave Sumner (IARU), Bernd Mischlewski (Germany), Bryan Rawlings (Canada), Flávio Archangelo (Brazil/CITEL), Tim Ellam (IARU), Ole Garpestad (Norway), Jon Siverling (USA), Peter Pokorny (Australia), Ulli Muellur (Germany), Murray Niman (UK), Dale Hughes (Australia/APT/Chair SWG4C1), Dave Court (IARU).

A view of the main conference hall which seats about 3000 people. The large video display was amazing! (Photo used with permission of the ITU)