

Competing Interests for the Microwave & Millimeter Wave Bands

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Competing Interests for the Microwave & Millimeter Wave Bands

- Introduction.
- Regulatory Background.
- Champions for Amateur Radio Interests.
- Near term threats: 2019 World Radiocommunication Conference Agenda.
- Long term threats: 2023 World Radiocommunication Conference and beyond.
- How can amateurs help protect the spectrum?

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It is hard to avoid the constant flow of advertisements singing the praises of the next revolution in the telecommunications world known as 5G.

Consumers want/demand faster data speeds as well additional features/functionality for a plethora of electronic devices.

Industry's objective is to grow market share. New platforms create opportunities to sell/provide more hardware and services.

As a result there has never been more pressure by industry on the radio frequency spectrum above 1 GHz.

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The telecommunications era began in 1844 with the invention of the telegraph.

Rapid expansion of telegraph networks crossing international borders necessitated the need to establish equipment standards, operating practices and tariffs.

In 1865 twenty European countries met in Paris establishing the International Telegraph Union.

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As technology advanced with the invention of the telephone, patented in 1876, and with the rapid advancement of radio at the turn of the 20th Century there was a need for establishing international regulations for international telephone and radio communications.

The 1912 International Radiotelegraph Conference, held in London, assigned maritime radio distress frequencies.

At the 1927 Washington conference frequency bands were allocated to the various radio services including broadcasting, maritime/aeronautical mobile, experimental and amateur.

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Reflecting the expansion of the International Telegraph Union's responsibilities the organization changed its name to International Telecommunication Union at the Madrid conference in 1932.

The start of the modern age of the ITU began with the 1949 agreement between ITU and the newly created United Nations recognizing the ITU as the specialized agency for telecommunications.

Today ITU membership includes hundreds of private-sector organizations as well as members from 193 countries/foreign states.

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Periodically the ITU conducted World Administrative Radio Conferences (WARC) with the purpose of modifying international regulations pertaining to all telecommunication services throughout the world reflecting changes in technology and new demands by users.

For the amateur radio community WARC 1979 was notable as it created three new amateur radio bands at 30 meters, 17 meters and 12 meters (frequently referred to as the WARC bands.)

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Eight conferences have been held since 1993 when the conference name was changed to the World Radiocommunication Conference (WRC.)

The 2012 WRC was attended by more 3,000 delegates from 165 countries. Thirty agenda items were on the schedule. One resulted in the creation of a new secondary allocation to the amateur service at 472 – 479 kHz (The 630 meter band.)

The next World Radiocommunication Conference (WRC-19) will take place from 28 October to 22 November 2019 in Sharm el-Sheikh, Egypt.

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International Amateur Radio Union

The IARU has been the watchdog and spokesman for the world Amateur Radio community since 1925 and has participated in ITU conferences since 1927.

The IARU is organized into three regional organizations corresponding to the three ITU radio regions.

The ARRL and several other national member societies of the IARU participate in the domestic preparations in their respective countries and on their national delegations. The IARU is invited to attend WRCs as an observer in an advisory capacity.

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Immediately after a WRC a Conference Preparatory Meeting (CPM) is held with assignments given to Working Parties of the ITU Radiocommunication Sector (ITU-R) to conduct studies and develop methods for satisfying the upcoming agenda items.

The Working Parties (WPs) typically meet twice a year to prepare the text for a comprehensive draft technical report that is reviewed and finalized at a second CPM held approximately eight months prior to the WRC.

The International Amateur Radio Union (IARU) is a Sector Member of ITU-R and is entitled to participate fully in the Working Parties and Conference Preparatory Meetings.

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In preparation for the upcoming WRC-19 the second Conference Preparatory Meeting was held in February 2019 with more than 1,200 participants from 107 countries.

Their task was to review a 780-page Draft CPM Report and nearly 200 documents proposing changes.

Among the participants were nine who attended specifically to represent the interests of the amateur and amateur-satellite services.

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Two represented the IARU with the remainder serving on their national delegations. All were connected to the IARU either directly or through their national IARU member society.

The CPM attendees do not comprise the entire IARU WRC team.

There are some two dozen volunteers from more than a dozen countries who are engaged in WRC preparation on behalf of amateur radio.

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In August the CEPT Conference Preparatory Group met in Ankara, Turkey to finalize their position in preparation for ITU WRC-19. Positions of interest to radio amateurs include:

- Agreement to an European Common Proposal (ECP) on spectrum to be considered for International Mobile Telecommunications. The 47- 47.2 GHz primary amateur radio allocation had been considered. The proposal has been removed from the WRC-19 agenda. It is likely to resurface at WRC-23.
- Agreement to an ECP that retains the current regulatory position in the 5725-5850 MHz frequency band which includes secondary allocations to the amateur service and the amateur-satellite service (WRC Agenda Item 1.16)

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- At the insistence of the European Commission, a WRC-23 agenda item was considered necessary to address the world-wide protection of Regional Navigational Satellite Systems from amateur emissions in the band at 1240-1300 MHz.
- A draft WRC Resolution was agreed which underlines the importance of this frequency band to the amateur service and explicitly excludes the removal of existing allocations as part of the proposed agenda item. (WRC Agenda Item 10)

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- Agreement to a European Common Proposal (ECP) on allocating 50-52 MHz to the amateur service in Region 1 on a secondary basis with a footnote listing those countries where the amateur service will have a primary allocation in the band 50-50.5 MHz (WRC Agenda Item 1.1)
- Removal of 144-146 MHz from a French proposal for study of additional spectrum for aeronautical applications. (WRC Agenda Item 10)

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How can amateurs help protect the spectrum?

- Support the ARRL Spectrum Defense Fund.
- Operate the microwave and mm-wave bands.
- Document/log all activity.
- Beacons, beacons and more beacons.
- Publish:
 - Submit operating activity reports & contest logs.
 - Conference proceedings, newsletters, websites, etc.