

# WRC-19 and the Process for International Spectrum Decisions

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Roughly every four years, representatives of most of the 190+ member countries of the International Telecommunication Union (ITU) meet for four weeks at a World Radiocommunication Conference (WRC) to consider changes to the allocations and regulations governing the international use of spectrum. The ITU is the United Nations (UN) specialized agency for information and communications technologies. WRCs are international treaty-writing conferences at which new or modified spectrum allocations and regulations are adopted and are critically important to the United States and other nations driving wireless telecommunications technology and development. WRC-19 was held from Oct. 28-Nov. 22, 2019 in Sharm el-Sheikh, Egypt.

The ITU summarized the major accomplishments at WRC-19 in an understandably positive light:

- **International Mobile Telecommunications [5G mobile]** – Additional spectrum was identified in the 24.25-27.5 GHz, 37-43.5 GHz, 45.5-47 GHz, 47.2-48.2 and 66-71 GHz bands, facilitating the development of Fifth Generation (5G) mobile networks.
- **Earth exploration-satellite (EESS) service** – Protection was accorded to EESS with the possibility of providing worldwide primary allocation in the frequency band 22.55-23.15 GHz in order to allow its use for satellite tracking, telemetry, and control.
- **Non-Geostationary Satellites** – Regulatory procedures were

established for non-geostationary satellite constellations in the fixed-satellite service, opening the skies to next-generation communication capabilities. Mega-constellations consisting of hundreds to thousands of satellites in low-Earth orbit are becoming a popular solution for global telecommunications, as well as remote sensing, space, and upper atmosphere research, meteorology, astronomy, technology demonstration, and education.

- **High-altitude platform stations (HAPS)** – Additional frequency bands were identified for High Altitude Platform Systems (radios on aerial platforms in the stratosphere) to facilitate telecommunications within a wide coverage area below for affordable broadband access in rural and remote areas.
- **WiFi Networks** – Regulatory provisions were revised to accommodate both indoor and outdoor usage and the growth in demand for wireless access systems, including RLANs for end-user radio connections to public or private core networks while limiting their interference into existing satellite networks.
- **Railway radiocommunication systems between train and trackside (RSTT)** – A Resolution was approved on railway radiocommunication systems to facilitate the deployment of railway train and trackside systems to meet the needs of a high-speed railway environment, particularly for applications supporting improved railway traffic control, passenger safety, and security for train operations.
- **Intelligent Transport Systems (ITS)** – A Recommendation was approved to integrate Information and Communication Technologies in evolving ITS to connect vehicles, improve traffic management, and facilitate safer driving.

- **Broadcasting-satellite service (BSS)** – Protection of frequency assignments providing a priority mechanism for developing countries to regain access to spectrum orbit resources.
- **Global Maritime Distress and Safety System (GMDSS)** – GMDSS coverage was expanded.
- **Earth stations in motion (ESIM)** – A decision on ESIMs will support and facilitate communications between planes, ships, and trains and satellites.
- Regulatory changes were introduced to facilitate rational, efficient and economical use of radio frequencies and associated orbits, including the geostationary-satellite orbit.

The U.S. Department of State statement on the results of WRC-19 focused on actions tied to domestic wireless policy priorities:

Agreements reached at WRC-19 will help pave the way for the global harmonization of 5G, and the development of an ecosystem of applications and services that will fuel the growth of the digital economy for years to come. WRC-19 successfully identified over 15 GHz of globally harmonized millimeter wave spectrum for 5G, plus additional spectrum for 5G on a regional or country basis.

These decisions reinforce U.S. leadership in 5G, with successful outcomes in the 26 GHz, 40 GHz, and 47 GHz bands all aligning with actions already taken by the United States in its own aggressive 5G spectrum rollout. With this groundwork set, the world can now benefit from global roaming and economies of scale while permitting flexibility in 5G deployment.

WRC-19 also advanced a forward-looking framework for 5G and satellite

services, including critical passive weather systems, to coexist without limiting the opportunities and benefits of 5G and incumbent services. The Conference reached consensus on additional agenda items covering a range of new technologies and services, from enabling our commercial space sector through growth of next-generation non-geosynchronous orbit satellite constellations to innovative infrastructure platforms that keep us connected in the air and at sea.

**Commissioner O'Reilly's Take on WRC-19.** On December 5, 2019, FCC Commissioner Michael O'Reilly testified before the Subcommittee on Communications and Technology of the House of Representatives Committee on Energy and Commerce. Commissioner O'Reilly offered an appraisal that WRC-19 "achieved some of [the U.S.] objectives in various, muddled forms." He raised "some fundamental concerns that ultimately call into question the continued value of future conferences." These included his view that some national delegations—Russia for one—opposed the interests of the U.S. and other forward-thinking nations for what appeared to be "larger geo-political purposes and to protect domestic industries from competition from U.S.-based companies." He also cited China and France as "unreasonably obstinate" and going "far beyond normal negotiation strategy..."

In his testimony, Commissioner O'Reilly raised alternatives to the ITU WRC process if needed to protect U.S. interests, including the U.S. and Japan (the two largest funders of the ITU). These included forcing change, or even cutting off their funding, or exploration of a "G7-like" organization or a "loose coalition of leading wireless nations as an alternative to the ITU." Any of those actions would be a drastic change to the current structure and process, but there are institutional reasons for the difficulties and frustration cited by Commissioner O'Reilly.

A threshold challenge for the U.S. is the process for developing positions on many issues for each WRC. Government agencies and the private sector undertake extensive discussions to develop the U.S. positions; the process consumes a good part of the four-year interval between the WRCs. Once U.S. national positions are developed, they are then coordinated with other nations to achieve broader support consistent with U.S. interests prior to the WRC.

**WRC Institutional Challenges.** Like most UN organizations, the ITU makes decisions on spectrum, regulatory rules, and standards using a one nation one vote system unless there is consensus. Each ITU member country can select the level of dues it pays to support the ITU. Even though the U.S. and Japan pay the highest dues of ITU member countries, their votes have the same weight as other member countries which contribute a much lower percentage of the funds needed to support the ITU.

Another institutional issue is divergent priorities and interests among various member countries. When cutting edge technology matters are at issue, many ITU member countries view implementation as too far removed from their present-day realities of wireless communications and have less stake in how future technology-related matters are resolved. The ITU works hard to ensure that developing countries receive benefits from the international system to make them stakeholders in technological progress. Otherwise, they could stay out of the decision-making process or even hold the process hostage.

In addition to this divergence of interests, the U.S. faces some significant disadvantages in successfully building alliances under the governance structure of the ITU.

For purposes of radiocommunications, the ITU divides the world into three

regions:

- Region 1: Europe, Africa, the former Soviet Union, Mongolia, and some of the Middle East
- Region 2: the Americas including Greenland, and some Pacific Islands
- Region 3: most of Asia and Oceania

The United States is in Region 2, which has far fewer ITU member countries than Regions 1 or 3.

The ITU also divides the world into five Administrative Regions:

- A: the Americas (35 ITU member countries)
- B: Western Europe (33 ITU member countries)
- C: Eastern Europe and Northern Asia (21 ITU member countries)
- D: Africa (56 ITU member countries)
- E: Asia and Australia (50 ITU member countries)

The number of countries in each of the regions is the basis for the distribution of important positions in the governance of the ITU such as the ITU Council and the International Radio Regulations Board.

Administrative Region A, which includes the U.S. has far fewer ITU member countries than Regions D and E. Europe includes parts of both Regions B and C, so it has a numerical advantage demonstrated by the fact that European positions for WRCs are usually prepared in the European Conference of Postal and Telecommunications Administrations (CEPT) process and there are 48 member nations of CEPT.

Thus, on a purely numerical basis, the U.S. is challenged to put together large coalitions to support its positions as compared to the number of voting members in other regional coalitions. The U.S. government understands this challenge and has done a much better job of achieving support in the Americas and beyond in recent years, but challenges persist when WRC participants have substantially different interests and priorities.

While a G7-type of body for spectrum issues sounds appealing for the U.S. in light of these institutional challenges, such change would require the U.S. and other leading nations in telecommunications to cast off over a century of reliance on the ITU and its radio conference process. There would be an inevitable political backlash from the other nations of the world, which would object to marginalization in this important decision-making process. Whatever the merits of a smaller decision-making body of more commonly interested nations, it does not seem a likely or realistic prospect, particularly when the WRC-19 results did not leave the U.S. or other major nations feeling that their interests were largely ignored or disregarded.