

## **“U.S. Leadership at the World Radiocommunication Conference 2027: Strategy and Challenges Ahead of Shanghai”**

U.S. Senate Committee on Commerce, Science, & Transportation

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I thank the Subcommittee for the opportunity to testify. My testimony will discuss four issues: the political environment for the World Radiocommunications Conference, known as WRC-27; the substantive issues of LEO satellite constellations, and 6G, and procedural goals for the WRC negotiations.

The WRC is held every four years to review and revise the International Telecommunication Union’s (ITU) Radio Regulations and harmonize international and satellite use of radio-frequency spectrum to prevent interference. By reaching a consensus on these rules, the ITU ensures that global communications systems operate efficiently.

We have entered an era of ubiquitous global connectivity. Ubiquitous global connectivity means that there will soon be no place on Earth not covered by at least one network. It means an environment of involuntary transparency, ubiquitous knowledge, and perhaps ubiquitous surveillance.

These overlapping networks will be created by mobile telecommunications, terrestrial and undersea fiber optic cables, and satellites, all interconnected in ways that provide access to the internet and digital services. The economic opportunities and the security implications are immense. The suppliers of this ubiquitous connectivity will have strategic advantage and commercial, political, and military outcomes will favor them more than others.

Pursuit of the strategic advantage that technology provides is a central part of the competition with China. This competition frames the upcoming WRC. China recognizes that economic strength and technological leadership are fundamental to national security. This is why it is seeking to dominate technology in the twenty-first century. As part of this strategy, China was able to narrowly win the WRC Chair.

### **The International Environment**

WRC-27 is particularly vital because its agenda will look at crucial topics for global connectivity and technological leadership. These are space-based services, 6G standards, and satellite regulations—areas where U.S.-China competition is most intense. Winning the WRC chair was an effort by Beijing to regain influence in the ITU. China will manage the conference and can influence the flow of information and informal networking among participants.

The outcome of the WRC will be shaped in part by the status of international relations when it begins 18 months from now and the outcome of the Iran intervention. This will be a challenging negotiating environment. The WRC’s negotiating terrain will be difficult for the US, but not impossible.

The WRC is ultimately more likely to concentrate on technical issues rather than political issues.

This helps the US. But in thinking about the WRC and preparation for it, there are a few larger political issues that deserve consideration. These involve the upcoming Plenipotentiary Meeting, where the reelection of Doreen Bogden as ITU Secretary General is crucial for American interests. On a related note, the election of Jennifer Warren to the Radio Regulation Board (RRB) is also in the US interest.

### **China as Host**

Negotiating in China poses unique security challenges. China owns the networks upon which delegates will communicate both with other delegations and with their home countries, China has an immense and powerful cyber intelligence effort that will circumvent most defensive efforts, and any unencrypted communication will likely be subject to interception. China has put a huge effort into managing surveillance data, so the volume of traffic will not be a challenge. This espionage program poses unique problems for all delegations in that the negotiations could easily be compromised to China's advantage.

Shanghai will not be a secure environment, and the Chinese have developed very sophisticated techniques to monitor communications within China, largely because of their paranoia about their own population. It will be very difficult to communicate without some degree of Chinese surveillance. Technologies similar to those developed by NSO group and others for implanting surveillance software without the device owners cooperation or knowledge suggest that even physically securing a phone, laptop, or tablet, will not be sufficient to safeguard a device

The US can reduce this risk by first ensuring that all delegations are aware, and by suggesting ways to counter it. There are a few commercially available encryption technologies, such as Signal, that might improve security. Others encryption technologies are likely compromised. An awareness of a heightened security challenge in the Shanghai environment will be useful for all delegations to bear in mind. This is a problem, but it can be managed.

### **Maintain Equitable and Transparent WRC Processes**

One important point for the preparations for WRC negotiations is the ability to emphasize the need to remain subject to the usual WRC decision-making processes, such as consensus rules rather than voting. The WRC operates on the principle of consensus. Unlike many international bodies that default to simple majority voting, the ITU's culture is rooted in finding a "common denominator" to ensure global interoperability of radio services and satellite orbits. While Article 28 of the ITU Convention allows for voting, if necessary, it is treated as a last resort. A vote is generally seen as a failure because it can lead to cross-border interference and fragmented global markets.

China and others would prefer voting because, frankly, they probably have a narrow majority, and they would get outcomes favorable to them. The requirement to get consensus forces greater compromise by all parties. Proposals to rely on voting are a standard UN negotiating ploy by Russia and China. To some extent, the procedural issues that are coming up in the WRC resemble conventional Chinese and Russian negotiating tactics in the UN and other multilateral fora. They may seek a decision making process based on voting rather than consensus, since

they have the votes, can influence developing nations, and press on issues that put the US in a difficult spot, such as seeking to reassign spectrum now assigned to national security purposes. The US has successfully dealt with these in the past and should be able to do it again at WRC-27 by insisting equitable and transparent consensus processes, and it is in the US interest to emphasize the need for the Chinese Chair to play by the rules. This is a case that needs to be made early and often with other countries

The Administration has taken a valuable first step by appointing the US Head of Delegation to the WRC. The next step is to reach consensus on the US WRC positions on substantive issues as early as possible. We have 18 months, but if we could do that in a year or less, that would be a significant improvement. The earlier the US can begin to work with other nations develop common positions, the better. In the interim, the US can use the time to meet with other nations to advocate support for strong WRC processes. Finally, some have raised the issue of delegation discipline. A strong head of delegation with support from the Administration and Congress can hold delegates accountable if they do not support the US position, and deviating from that is unacceptable

## **LEO Constellations**

Sovereignty and competition in space will be a defining issue for WRC-27. The assumption of a borderless sky, where commercial efforts defined global networks, is being challenged. The sector has entered a new phase in which states have begun to assert what amounts to orbital sovereignty. Low Earth Orbit (LEO) has changed from a sparsely populated domain to a dense layer of critical infrastructure with profound political consequences.

China's push for a PRC-aligned space ecosystem is driven by a desire to avoid dependence on Western infrastructure, particularly as satellite networks become embedded in military systems. Many countries, and in particular, China suffer from what we could call Starlink envy. They are worried that the Starlink system will crowd them out of space. This worry afflicts more than China. It is a concern among developing countries as well. Finding a way to accommodate their sovereignty concerns without putting US companies at a disadvantage will be one of the challenges for WRC preparation. A bad outcome at the WRC could result in a fragmented global space architecture where critical ground-segment is aligned with Chinese technical standards and security protocols.

China is flooding the ITU with applications for LEO satellites, with an unprecedented number of filings), seeks to redefine orbital governance as a domain of state-supported critical infrastructure rather than commercial activity. A pivotal moment occurred in December 2025, when China submitted filings for satellite constellations totaling roughly 203,000 spacecraft. This is intended to challenge and constrain the first-mover advantage held Starlink.

There is a potential dispute over whether satellite providers should be subject to the same licensing as terrestrial carriers as less regulated satellite operators offer telecommunication services in competition with terrestrial providers governed by national regulations, A controversial agenda item involves regulatory measures to limit satellite operations to those that

are nationally authorized. This is a direct response by nations wanting the power to shut off satellite internet (like Starlink).

## **Spectrum for 6G**

The 6G spectrum disputes spectrum allocation issues are in many ways similar to the issues seen in the last WRC over 5G spectrum. Chief among these is that the Department of War occupies spectrum that other countries will see as commercial and China will use this as a way to put the US in a difficult position, forcing it to defend its national security allocations against the commercial desires of other countries.

The most contentious issues revolve around midband spectrum, where Europe and parts of Asia are leaning toward allocating this for licensed mobile (IMT/6G) while major American companies want to obtain license-exempt access to support Wi-Fi. There are also the usual difficult disputes over astronomy, navigation, and moving existing government, military, and fixed-satellite services. These are issues that can be worked out in preparatory discussions to define the US position.

The ubiquitous connectivity that 6G and 5G provides is central to twenty-first century national security and economic success. The WRC-27 6G discussions over spectrum allocation are in many ways similar to the issues seen in the last WRC over 5G for the US. These are that the Department of defense occupies spectrum that other countries will see as commercial and China will use this as a way to put the US in a difficult position, forcing it to defend its national security allocations against the commercial desires of other countries.

However, the same kind of negotiating strategies that worked the last time to achieve acceptable outcomes for the US will work again when it comes to spectrum allocation for 6G. The US can benefit from the move to rely more on software rather than hardware in telecom infrastructure. Progress in the development of dynamic spectrum sharing technologies will allow national security and commercial uses to inter operate safely and manage interference in ways that reduce the spectrum allocation burden. These and other changes in telecom technology (such as use of Open-RAN) are likely to help the US. The good news is the bands identified in the [One Big Beautiful Bill Act] are also under consideration for global harmonization at WRC 27.

Adequate radio frequency spectrum for commercially licensed use—particularly the mid-band spectrum that is ideal for high-capacity, wide-area deployments—are central to national security. This licensed spectrum, will constitute the backbone for future use. Presently, the United States has a significant shortage of licensed mid-band spectrum allocated to 5G when compared to China and other countries, and China is projected to further widen that disparity in the coming years.

Some of the issues that spectrum allocation will pose at the WRC may be addressed by an emphasis on the potential for dynamic spectrum sharing to allow for a greater interoperability less interference and the collocation of spectrum for both US defense requirements and by commercial concerns.

## **Conclusion**

The WRC cycle is four years long (2023–2027). We are now in the transition to a serious phase of preparation. The technical studies are being concluded and the U.S. must soon finalize its positions to advocate effectively at regional bodies, like CITEL in the Americas, before the final conference in 2027. The earlier the better for this advocacy, which means the earlier the better for agreement on a US position.

The US has advantages, but it could be easy to lose them and WRC 27 will require nimble negotiating skills as well as being able to demonstrate American technological superiority and a willingness to work with allies and partners to achieve the best outcome.

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