Hearing on

"U.S. Leadership at the World Radiocommunication Conference 2027: Strategy and Challenges Ahead of Shanghai"

Before the

United States Senate
Committee on Commerce, Science and Transportation

Subcommittee on Telecommunications and Media

Testimony of

Michael Calabrese
Director, Wireless Future and
Senior Advisor on Technology & Democracy
New America

Washington, D.C.
March 17, 2026

Introduction

Good morning Chairman Fischer, Ranking Member Luján, and members of the Subcommittee. My name is Michael Calabrese. I direct the Wireless Future program at New America, a nonprofit policy institute based here in Washington, D.C., where I focus primarily on both terrestrial and satellite spectrum policy. I have also served, from 2009 to 2024, on the Department of Commerce Spectrum Management Advisory Committee (CSMAC). At New America, I've worked for over two decades to develop and advocate for policies to promote ubiquitous, seamless and more affordable wireless broadband connectivity, as well as more efficient spectrum use with a focus on expanding unlicensed access, closing digital divides, and promoting competition and innovation in ways that benefit consumers and the U.S economy more broadly.

Thank you for inviting me to participate in this important hearing. When it comes to preparing consensus positions, priorities and coalition-building for U.S. participation at the World Radiocommunication Conference late next year (WRC-27), high-level Administration leadership and Congressional oversight cannot come early enough. While the ITU's quadrennial WRC process is flawed in many respects—and will be especially challenging with China hosting WRC-27 in Shanghai—it is more vital than ever that the U.S. do everything it can to influence the outcome on the most important issues impacting our leading industries and economy.

As communications and connectivity is increasingly wireless, decisions at WRC-27 concerning the global harmonization of spectrum frequency bands for licensed use (IMT), unlicensed or Wi-Fi, satellite and other services has a large and growing impact on the global competitiveness of leading U.S. industries. ITU decisions on the global harmonization of spectrum frequencies often drive global economies of scale for telecom equipment and consumer products (e.g., smartphones and Wi-Fi routers). They will also determine whether America's emerging and currently dominant low-Earth orbit (LEO) satellite providers will have the global market access they need to scale up, lower costs, and innovate new services for consumers both at home and worldwide. Spectrum sharing and interference rules adopted by the ITU can also be crucial, particularly for satellite services, since virtually all satellite spectrum is shared.

Spectrum has been called the "oil of the information age" for good reason: Wireless data and communication is rapidly becoming an input for almost every other product and service in

our economy. The critical role of spectrum access and interoperability will soon become far more vital as artificial intelligence and distributed cloud computing are integrated into most personal devices and business operations, from smart phones and industrial IoT, to smart homes and fully automated vehicles. Access to sufficient spectrum with the right propagation characteristics will be key to processing data from smart devices, factories and sensors in real-time.

A balanced ITU spectrum policy favorable to U.S. values can further enhance the benefits of this wireless world by facilitating global and interoperable markets for truly ubiquitous and seamless connectivity. The integration of varied wireless networks (cellular, Wi-Fi, satellite) to create ubiquitous, seamless and interoperable networks can allow users to access and automatically switch to the best available connections anywhere and everywhere they go. Of course, while the U.S.-dominated Wi-Fi industry is central to this future indoors, satellite will close the gaps outdoors in places where cellular signals are absent or weak—and as a burgeoning industry, LEO satellite has attracted particular attention at the ITU. Indeed, it is striking and important to note that more than 80 percent of the WRC-27 agenda items directly or indirectly impact emerging and U.S.-led LEO satellite operators. And unlike cellular services, which can acquire exclusive-use licenses for what is inherently a domestic market, under ITU rules (and U.S. law) virtually all satellite spectrum is shared globally—and for LEO constellations, global spectrum harmonization, power levels and market access is critical to achieving economies of scale.

In short, the U.S. should strive to shape the global spectrum allocations and rules governing market access and interference avoidance to benefit major U.S. industries as well as to promote democratic conceptions of communications policy. The alternative would be to cede the playing field to adversaries pushing entirely different, self-interested and undemocratic agendas. This will make an all-out U.S. effort to prevail on key agenda items both more important and more challenging in Shanghai, where the PRC will have home-field advantages. Our delegation is very likely to be smaller and more difficult to coordinate given the likelihood of intense surveillance. The more worrisome, though less obvious advantage is that the host country is the presumptive chair of the Conference. And in the recent past, the host nation and chair (e.g., the UAE at WRC-23 in Dubai) has been able to manipulate the process in some important respects. For example, the American delegation at WRC-23 found itself frozen out of some key final

negotiating sessions at the end of the Conference—as final decisions were made—in part because the Conference chair decided that only the nations designated to represent one of the ITU's three regions should be able to participate.

Overcoming Key Challenges to U.S. Success

To effectively shape the outcomes on agenda items most important to leading American industries and interests, it is especially important that the U.S. quickly finalize unified positions on priority issues, select a senior official as head of the delegation far sooner than we have in the past, and begin consulting widely with allies to build a coalition in support, starting in our own ITU Region 2 (the Americas).

1. The Path to Early, Unified U.S. Positions

First, developing clear positions sufficiently far in advance is more challenging for the U.S. than most other nations. One reason is that we engage in a two-track consultative process with a wide variety of both governmental and industry stakeholders. On one track, NTIA coordinates federal agency recommendations through a subcommittee of its Interdepartment Radio Advisory Committee (IRAC). The Radio Conference Subcommittee conveys its views and recommendations, once approved by the IRAC, to the FCC.[1] On a separate and parallel track, the FCC has appointed a WRC Advisory Committee (WAC) of more than 40 private industry representatives to develop its own set of preliminary views and recommendations.[2] The FCC and NTIA must reconcile differences in their positions through their WRC coordinators, after which the positions are sent as draft U.S. preliminary views and proposals to the Department of State.

The State Department ultimately submits approved documents to CITEL PCC.II (the convening entity for the participating nations in ITU Region 2) or directly to the ITU depending on the timing. While this process is moving along, the WAC has reported out diverging "non-consensus" positions on several agenda items. The FCC puts these non-consensus views out for public notice and comment. It did this recently for five items that included agenda Item 1.7, concerning whether large swaths of the 7 and 8 GHz bands (7.125 – 8.4 GHz) should be allocated only for "IMT" (terrestrial cellular) or more generally for terrestrial "Mobile" (allowing individual countries to decide if a portion could be authorized for Wi-Fi or shared IMT/Wi-Fi).

[1] See NTIA, Radio Conference Subcommittee, https://www.ntia.gov/page/radio-conference-subcommittee-rcs.
[2] See FCC, WRC-27, https://www.fcc.gov/wrc-27.

The path to consensus within both the FCC's WAC and the NTIA's IRAC, followed by a reconciliation and final decision that includes the State Department, is a long and arduous process that has occasionally come too late for U.S. positions to be adopted as a regional position at CITEL. In short, while the U.S. has an admirably inclusive consultative process, we are at a disadvantage unless it now accelerates and yields final positions on the established agenda items that can jumpstart diplomacy and coalition building within CITEL and beyond.

At the same time, there are issues that are not formal agenda items yet that remain in play and of major importance to U.S. interests. The most salient example are the ITU rules that govern spectrum sharing between the traditional geostationary satellites (GSOs) and the increasingly prevalent LEO and other non-geostationary satellites (NGSOs). Under rules adopted more than 25 years ago, prior to commercialized LEO constellations, the ITU adopted strict power limits ("equivalent power flux density," or EPFD, limits) on the amount of interference NGSO satellites can impose on GSOs. However, as the FCC stated last year in its pending proposal to relax the EPFD limits, the ITU's metrics are very over-protective, wasting spectrum and needlessly reducing LEO satellite power, capacity and operational performance.[3] Studies show that modernizing these limits premised on avoiding unacceptable interference could yield enormous increases in LEO downlink capacity available to a given geographic area, which could alleviate data capacity shortages that limit the scale of LEO services today.

Due to opposition by GSO interests at WRC-23, modernizing the EPFD limits did not make it onto the formal agenda for WRC-27. Instead, an ITU-R study group was tasked with conducting studies on whether and how the currently very restrictive EPFD limits can be modified to enhance NGSO capacity and performance while still protecting GSOs from harmful interference.[4] Under a standing agenda item, these results can result in a recommendation to adopt at least incremental changes. The studies that have already been conducted indicate that the current framework is technically obsolete and overprotects GSO satellites past what is necessary to the detriment of LEO satellites' operations, which is similar to the conclusion the FCC has come to domestically. The U.S. should prioritize this issue and submit it to CITEL with the goal of developing a regional proposal to be voted on at WRC-27.

---

[3] Federal Communications Commission, Modernizing Spectrum Sharing for Satellite Broadband, Notice of Proposed Rulemaking, SB Docket No. 25-157, at para. 11 (rel. April 29, 2025).

[4] This obligation has fallen on ITU working party 4A, which covers efficient orbit and spectrum utilization for satellite services for the ITU. See https://www.itu.int/en/ITU-R/study-groups/rsg4/rwp4A/Pages/default.aspx.

2. Appointing Senior Delegation Leadership Further in Advance

A second challenge that can be met more readily is the timely appointment of a senior U.S. official to lead the U.S. preparations and the ultimate delegation for WRC-27. In 2023, current FCC Commissioner Anna Gomez's appointment was announced roughly 9 months before the Conference. Her predecessor's appointment was announced with an even shorter lead time to WRC-19. Indeed, the U.S. has a history of appointing delegation heads—who receive the rank of ambassador—less than a year before the Conference. This limited runway hampers appointees' ability to fully understand the technical issues and to build relationships and coalitions, across first our own ITU Region 2 and then globally for the Conference itself. And because the agenda for WRC-27 is laden with novel LEO satellite issues, this challenge will be heightened for WRC-27 if the delegation head does not have prior satellite spectrum expertise.

While the State Department is constrained by the short-term nature of the appointment, the Administration can still decide who will be occupying the role and bring them on board (whether at State or NTIA) at least 12 to 18 months prior to the Conference. This advance notice could enable the candidate to begin strengthening their understanding of the issues, attending CITEL meetings, coalition-building, and even socializing U.S. positions as they emerge. The longer runway would leave the U.S. on much stronger footing by the time of the Conference. In this respect, it is a hopeful sign that the Administration appointed Adam Cassidy to be Ambassador at Large for Cyberspace and Digital Policy earlier this month.

3. Focusing Early on Coalition Building at CITEL and Then Globally

A third and related challenge for the U.S. is the imperative to build coalitions in support of U.S. priority positions in the current international environment. This process needs to begin in the Inter-American Telecommunication Commission (CITEL) process, as we engage with the other nations in ITU Region 2 (the Americas and Greenland).[5] The outcomes of the WRC process often vary substantially by region, and it is also far more difficult for the U.S. to sustain a position at the Conference unless it has already been endorsed through Region 2's CITEL process during the year prior to WRC itself.

[5] See Organization of American States, Inter-American Telecommunication Commission (CITEL), https://www.oas.org/ext/en/main/oas/our-structure/agencies-and-entities/citel/About.

Recent international developments could make this more difficult. Ultimately, the ITU process can be as much about larger political alignments and grievances as it is about good telecommunications policy. The 11 emerging market countries that comprise the BRICS group—Brazil, Russia, India, China, South Africa, and five newer members—appear to be coordinating economic and diplomatic efforts more than they were just a few years ago. In addition, the current Administration's widespread imposition of tariffs, as well as both actual and threatened military interventions in both our own region and more widely, are likely to create additional obstacles to persuading many countries to publicly support U.S. interests on issues such as space-based services.

4. Setting and Managing Priorities That Do Not Concede Any Key U.S. Interests

A fourth key challenge is developing and managing priorities for a nation with multiple world-leading industries and interests that can be substantially impacted, for better or for worse, by most of the outcomes of WRC-27. The U.S. must be extremely resistant to making concessions to gain votes on one set of issues if it undermines another important U.S. industry or interest. This is most evident for LEO satellite and other space-based services, where the U.S. is the dominant player by far. China and even the European Union have little self-interest in helping the U.S. accelerate changes to satellite spectrum policy that will widen the U.S. lead before their own national champions are in a position to compete. And as we saw at WRC-23, too many developing nations seem inclined to give more weight to the interests of incumbent GSO operators providing current services rather than to the far greater advances in connectivity possible by optimizing spectrum access and sharing for new LEO systems.

Telecommunications equipment is another industry with a sharp dichotomy. The U.S. dominates the world market for enterprise Wi-Fi equipment and services. Cisco and HPE Aruba had a 55 percent market share in 2024, while China's Huawei is third with a 9 percent share. In contrast, for mobile cellular equipment, Huawei's global market share (31 percent in 2024) is more than Europe's Nokia and Ericsson combined, while the U.S. has no significant part of that market. It is not surprising, therefore, that China's agenda for upper 6 GHz is to use WRC-27 as an opportunity for countries to exempt themselves from the current and flexible "Mobile" allocation decided in 2023 and instead pledge allegiance to spectrum for IMT (which excludes Wi-Fi) via footnote modifications to the international regulations. If China is successful in

recruiting more nations to jump into IMT footnotes, the outcome is an expanded and lucrative market for their national champions (Huawei and ZTE).

At the same time, China is the only major nation in the world that has not allocated even the lower 6 GHz for Wi-Fi. Not only is Wi-Fi a U.S.-dominated industry, but it's a type of decentralized communication technology that is far more difficult for an authoritarian regime to surveil and censor. We believe the U.S. should not take or accept any position that undermines a harmonized—and hence larger—global market for Wi-Fi equipment and services.

This tension between Wi-Fi and terrestrial mobile interests has clearly surfaced in the FCC's WAC. Agenda Item 1.7 proposes to potentially change the ITU's allocation of the upper mid-band spectrum between 7.125 and 8 GHz to "International Mobile Telecommunications" (IMT) for Regions 2 and 3. The significance is that adopting an IMT rather than a "MOBILE" allocation (which includes Wi-Fi) would work to restrict the flexibility of member nations to use these higher-frequency bands to meet their future needs for more Wi-Fi capacity. In the U.S. and Canada, for example, the unlicensed 6 GHz band that is fueling next generation Wi-Fi 7 and 8 with very wide contiguous channels currently extends to 7.125 GHz. The sub-bands immediately above this, including possibly some 7 GHz military spectrum, could work well for Wi-Fi on at least a low-power, indoor-only (LPI) basis. But even if the FCC were to authorize this, an IMT identification at the ITU would undermine the potential global markets for the dominant U.S. enterprise Wi-Fi companies noted just above.

Despite all this, the FCC's WAC reported three "non-consensus" views to the FCC that diverged precisely along industry lines, with mobile industry representatives supporting a changed allocation to IMT and representatives from technology, cable and other companies supporting No Change. This disagreement is counterproductive and at best premature. In the U.S., last July's One Big Beautiful Bill Act specifically excluded the entire 1,000 megahertz between 7.4 and 8.4 GHz from consideration for reallocation or assignment for IMT to protect national security operations. Item 1.7 does not propose this same allocation for Region 1 (Europe, Africa, Middle East, northern Asia), since at WRC-23, this region excluded 7.25 – 7.75 GHz. And, consistent with the OBBBA, NATO reportedly now supports excluding 7.75 up to 8.4 GHz from IMT as well while European regulators would impose conditions that would protect incumbent operations. In Region 3 (the rest of Asia and Pacific nations), China is likewise opposed to allocating 7.25 – 8.4 GHz for IMT.

As a default, the U.S. position should oppose a change to IMT that U.S. law (OBBBA) prohibited just 9 months ago. Moreover, the OBBBA designated 7.25 – 7.4 GHz as one of three bands that NTIA is studying this year for potential reallocation to IMT by auction. In December, in his "Winning the 6G Race" executive order, President Trump extended that study down to 7.125 GHz. Since the results of these studies will be available before the end of this year, we agree with the leading U.S. technology companies that early IMT identification is premature and unnecessary for the moment.

WRC-27 Is an Opportunity for the U.S. To Boost Its Lead in LEO Satellite Services

The WRC-27 agenda is unusual for its heavy emphasis on satellite-specific issues. This represents an opportunity for the United States to play a leading role in influencing global policy that shapes the trajectory of this emerging and rapidly growing industry. Indeed, the ITU is playing catch-up on several key satellite policy issues that the U.S. has already addressed, or is in the process of addressing, domestically. A strong and consistent U.S. focus on these agenda items is imperative to both advance our current leadership on innovative satellite services as well as to not cede ground to adversaries and competitors hoping to shape the regulatory landscape to slow down or undermine U.S. dominance. Maintaining a strong and active showing in the process can help the U.S. achieve its optimal outcomes in some of these key issue areas. Three of the key agenda items include:

Agenda Item 1.3 proposes an additional thousand megahertz of satellite spectrum (51.4 – 52.4 GHz) to support NGSO earth station gateways that provide internet backhaul for fixed satellite broadband and other services. Today's rapidly growing demand for LEO satellite services is putting pressure on the limited availability of spectrum and the earth station gateways that serve as backhaul. The FCC has already proposed to make this spectrum available for earth stations domestically in its recent Spectrum Abundance Proceeding.[6]

Agenda Item 1.5, initiated by Russia and supported by Iran, has attracted controversy for suggesting the need for new regulatory measures to preclude all satellite transmissions over

[6] See Federal Communications Commission, *Satellite Spectrum Abundance*, Further Notice of Proposed Rulemaking and Notice of Proposed Rulemaking, SB Docket No. 25-180 (rel. May 27, 2025),

countries and territories in which they are not authorized. However, under current ITU rules, satellite operators cannot offer commercial services without a market access authorization from a nation's regulator (e.g., FCC). While satellite operators should ensure they are not communicating with unlicensed terminals, crafting new regulations requiring satellites to turn off all transmissions every time they fly over, or where their beams overlap, an unauthorized country is impractical and would hamper their ability to serve areas in neighboring countries where they do have authorization. Domestic regulators are better situated to address unauthorized use of satellite equipment. More broadly, the United States has long maintained the view that the ITU should not become an instrument for enforcing censorship or for helping authoritarian regimes control communication.

Agenda Item 1.14 supports the need to allocate additional Mobile Satellite Service (MSS) spectrum to facilitate satellite direct-to-device services, or D2D, by which satellites can directly enable 3G and even 4G levels of connectivity on consumer handsets, vehicles and enterprise IoT networks in any location regardless of terrestrial mobile coverage. It is the more consequential sibling of Item 1.13, which effectively proposes to adopt globally the same framework the FCC approved in 2024 to authorize D2D mobile services to operate, in partnership with terrestrial mobile carriers, where there is no mobile coverage in specified terrestrial mobile bands.[7] Item 1.14, in contrast, opens the door to additional, and potentially globally-harmonized, MSS spectrum that can be used by satellite providers on a significantly less constrained basis to innovate and provide more commercially available direct-to-device mobile connectivity to consumers. The current partnership between U.S.-based Globalstar and Apple to allow texting between new iPhones anywhere on Earth is an example.

Thank you for this opportunity to share our views with the Committee on the critical preparations necessary for successful U.S. participation at the ITU's World Radiocommunication Conference 2027.

* * * * * *

[7] See Federal Communications Commission, *Supplemental Coverage from Space*, Report and Order and Further Notice of Proposed Rulemaking, GN Docket No. 23-65 (rel. March 15, 2024).