

**U.S. LEADERSHIP AT THE WORLD
RADIOCOMMUNICATION CONFERENCE 2027:
STRATEGY AND CHALLENGES AHEAD OF
SHANGHAI**

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS
AND MEDIA

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED NINETEENTH CONGRESS

SECOND SESSION

MARCH 17, 2026

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ONE HUNDRED NINETEENTH CONGRESS

SECOND SESSION

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**U.S. LEADERSHIP AT THE WORLD
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TUESDAY, MARCH 17, 2026

U.S. SENATE,
SUBCOMMITTEE ON TELECOMMUNICATIONS AND MEDIA,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 10:03 a.m., in room SR-253, Russell Senate Office Building, Hon. Deb Fischer, Chair of the Subcommittee, presiding.

Present: Senators Fischer, Blackburn, Moreno, Luján, and Rosen.

**OPENING STATEMENT OF HON. DEB FISCHER,
U.S. SENATOR FROM NEBRASKA**

Senator FISCHER. I call the hearing to order. Welcome everyone and thank you for being here today to discuss the United States' preparation for the 2027 World Radiocommunication Conference.

The World Radiocommunication Conference convened by the International Telecommunication Union every four years is one of the most consequential global foras into spectrum policy. The decisions made at these conferences shape the international rules governing how radio frequency spectrum is allocated and shared around the world. Those decisions have far-reaching implications for United States economic competitiveness, national security, scientific research, and the continued leadership of the United States in wireless and satellite technologies.

Next year's conference will be hosted in Shanghai, and the Chinese Communist Party will certainly be prepared to advance positions meant to undermine the United States' leadership. The United States must enter these negotiations with a strong position. This requires a tightly coordinated interagency process.

This process, which is led by NTIA, begins with Federal agencies providing technical input and operational perspectives on each agenda item under consideration for WRC-27.

The United States' final position should reflect the full range of national spectrum interests. Among agencies, the Department of Defense plays a particularly significant role. DOD is the largest Federal user of radio frequency spectrum within the Federal Government, and many of its most critical capabilities, including satellite communication, raiders—radars—I had a dog named Raid-

er—radars and missile warning systems, depend on reliable and interference-free spectrum assets.

As the WRC agenda looks to address space-related services and satellite operations, the intersection between international spectrum policy and national security becomes even more pronounced. National security missions cannot simply be engineered around certain commercial spectrum priorities. This is exactly why Congress exempted 7.4 to 8.4 gigahertz band from FCC auction authority last year, in addition to the lower three band.

Other Federal agencies also contribute essential expertise to the interagency process, NASA and NOAA depend on spectrum for scientific satellites and weather monitoring systems that are crucial for forecasting and climate observation. The FAA relies on spectrum for aviation safety and navigation systems that support the integrity of the global aviation network.

Each of these missions must be carefully considered as the United States evaluates proposed regulatory changes at the international level, where they will inevitably impact the domestic use of America's airways. The challenge and the responsibility of the interagency process is to reconcile these diverse needs and translate them into a cohesive position that advances American innovation and resilience. This unified position will allow the United States to engage effectively with regional partners, build coalitions with allied nations, and advocate confidently for outcomes that protect the United States' interests.

Those interests are substantial. The regulatory frameworks adopted at the conference will influence how the next generation of satellite constellations operate, influence the coexistence of emerging communications services, and influence how spectrum policy supports both economic growth and national security.

That is why preparation for WRC-27 is not a short-term exercise. Today's committee hearing examines how best to support the interagency in the coming months. We all share the goal of advancing U.S. leadership in spectrum and in space.

Thank you and I look forward to your testimonies.

And now I recognize my friend, Ranking Member Luján, for your opening statement.

**STATEMENT OF HON. BEN RAY LUJÁN,
U.S. SENATOR FROM NEW MEXICO**

Senator LUJÁN. Chair Fischer, thank you so very much for calling this hearing. And to all of our witnesses, thank you for being available today to discuss how the United States will be preparing for the International Telecommunications Union's World Radiocommunication Conference at the end of 2027.

Now, the United States has long been the world's leader in communications technology, developing advanced networks and devices used by billions of people that have been critical in shaping the modern digital economy. We must not take that leadership role for granted. That is why we must take a hard look at the role the United States will play at the WRC-27 being held in Shanghai, China.

Now, hosting the conference gives China a clear homefield advantage in a forum that carries enormous geopolitical weight.

China understands that international standard bodies are strategic areas where economics and geopolitical powers can be built for decades. Congress has already acted to protect our own infrastructure from China, providing \$4.98 billion for the Secure and Trusted Communications Network Reimbursement program known as Rip and Replace to help small and rural providers remove equipment from Chinese companies like Huawei and ZTE.

The People's Republic of China has made it a national priority to suppress United States' dominance in the technologies that will define global connectivity. This would threaten our national security, which is why our engagement in the United States at the WRC-27 matters. Success requires a clearly executed strategy, coordination and accountability across our government, active partnership with the private sector, and most critically, strong coalitions with our allies. As we are learning in the time that we are speaking, that matters.

That is why I am deeply concerned that the Trump administration has been careless and outright reckless in its approach to our global relationships. While the President has touted this as an America First agenda, the execution is doing real damage to our alliances and to Americans at home. Over the last few months, the administration has cut tens of billions in global aid, conducted illegal military strikes across multiple regions, including in Nigeria and Iran, and imposed tariffs that hurt small businesses and families.

If we continue on this path, the logical conclusion is self-imposed isolation to our own detriment. Congress must ensure that the Trump administration, the FCC, NTIA, and the State Department are fully coordinating and accountable in their preparation for the WRC 2027. The United States must engage in the lead-up to the Conference with clarity and purpose. The outcome of WRC 2027 is not predetermined, but what we know for certain is that it will shape the future of global spectrum policy.

The United States must advance a unified strategy to promote U.S. innovation in space and wireless technologies and protect our national defense interests. If we fail to act, we will arrive in Shanghai divided and unprepared, handing our competitors a strategic advantage. This should not be a partisan issue. What matters now is whether we will step into our role as leaders in communication technology or willingly cede that ground to China.

We are fortunate to have an expert panel with us today, and I look forward to a productive conversation. And again, I thank you all for being here.

Thank you, Madam Chair.

Senator FISCHER. Thank you, Senator Luján.

I would like to now introduce our witnesses for today.

Our first witness is Ambassador Grace Koh, former Head of the U.S. Delegation to the 2019 World Radiocommunication Conference. In this role, she managed interagency discussions to develop United States' positions and oversaw negotiations at the conference. Ambassador Koh currently serves as Vice President of Government Affairs at Ciena.

Our second witness is Ambassador Stephen Lang, former U.S. Coordinator for International Communications and Information

Policy. In this capacity, he led the United States delegations to several international conferences, including the 2023 World Radiocommunication Conference. Ambassador Lang currently serves as a Senior Advisor at Crest Hill Advisors.

Our third witness is Dr. James Lewis, a distinguished Fellow at the Center for European Policy Analysis. His current work focuses on strengthening American foreign policy and examining how innovation shapes global competition.

And our final witness is Mr. Michael Calabrese. Am I saying that correctly? I am sorry. Mr. Michael Calabrese, Director of Wireless Future and Senior Advisor of Technology and Democracy at New America.

With that, Ambassador Koh, you are recognized for five minutes to give your opening statement. Welcome.

**STATEMENT OF AMBASSADOR (RET.) GRACE KOH,
VICE PRESIDENT OF GOVERNMENT RELATIONS AT CIENA
AND FORMER HEAD OF U.S. DELEGATION TO THE WORLD
RADIOCOMMUNICATION CONFERENCE 2019**

Ambassador KOH. Chairwoman, Ranking Member, and members of the Subcommittee, thank you for the opportunity to testify on U.S. leadership at the World Radiocommunications Conference 2027.

My name is Grace Koh. I am Vice President of Government Relations at Ciena, and I did have the privilege of serving as U.S. Ambassador and head of delegation to WRC-19. I am here in my personal capacity. My employer has no significant stake in the outcomes of WRC-27.

So I will make two points. Why consensus is essential at the WRC, and why it is so hard to achieve, and why we must prepare early, given the added risks of holding WRC-27 in Shanghai. The World Radiocommunication Conference is among the most technically complex treaty negotiations in the world. Nearly 200 administrations participate, and the outcomes set global rules for spectrum use and satellite operations.

These outcomes are almost always reached by consensus. A vote is widely viewed as a failure, not just as a matter of tradition, but because the system cannot work without broad buy-in. Spectrum rules only matter if countries implement them. And signals cross borders, satellites operate globally, if rules were adopted by a narrow margin, dissenting countries would have little incentive to comply, driving more interference and less predictability for everyone.

Consensus produces durable rules, but it is hard, and the work starts years before the conference begins. In the United States, WRC preparation pulls together Federal agencies, engineers, and private-sector stakeholders with competing priorities. Carriers want capacity for mobile networks. Satellite operators want globally harmonized rules for new systems. Federal agencies must protect missions tied to national security, aviation safety, and weather.

And reconciling those interests takes time. Technical studies, policy tradeoffs, and hard negotiation. Parties test limits and hold po-

sitions. Progress requires persistence, credible analysis, and practical compromises, and it also requires making hard calls.

But this work strengthens the U.S. position. By the time we arrive with a proposal, the toughest objections have been surfaced and addressed. We show up with a position that is technically credible and resilient at the negotiating table. At the conference, negotiators must turn those different proposals into operating rules for 4 weeks—in 4 weeks. That is why the final days can run late into the night, but consensus is usually reached because everyone understands the alternative, the possibility of no rules and more interference.

For WRC-27, the takeaway is simple. Start early. Consensus takes sustained work with U.S. stakeholders and with other delegations, and we cannot afford a delay. Here is why. Shanghai adds a real operational and political risk, including the fact that this host government has interests that diverge sharply from ours. We should assume that devices, communications may be monitored, and that raises significant cybersecurity risks for a delegation that depends on laptops, phones, and shared technical documents.

We should also plan for constrained connectivity. Common U.S. collaboration tools may not work reliably. Delegations may have limited access to remote technical support, so key experts need to be on the ground to respond to late-breaking proposals. Export controls may further limit discussions, and state media may try to shape the narrative.

The response is preparation and discipline. Resolve sensitive policy issues earlier, not in Shanghai. Train the delegation early. Name the delegation head early. Staff the delegation to cover parallel sessions and train the team throughout the cycle. Issue clear guidance on cybersecurity communications and export compliance, and at the conference, enforce tight information handling practices.

The State Department will also need to intensify its engagement with ITU leadership to protect a transparent, rules-based conference, and plan now with like-minded partners for contingencies, like unexpected political disruptions. Early decisions also let U.S. negotiators build support and shape regional priorities—positions before WRC-27. That requires a full-strength leadership at both the NTIA and the FCC.

In WRC-19, NTIA did not have a confirmed administrator, in WRC-23, the FCC Spectrum Auction Authority had lapsed. Thankfully, Congress has restored the FCC's Auction Authority and confirmed an NTIA administrator. Going forward, both agencies should be fully expected to represent Federal and private-sector equities.

We enter the WRC-27 cycle with major strengths: world-class technical expertise, a transparent preparation process, and strong government industry collaboration. If we start early and plan rigorously for the Shanghai environment, we will be well-positioned to shape global spectrum policy in ways that advance our innovation, growth, and national security.

Thank you, and I look forward to your questions.

[The prepared statement of Ambassador Koh follows:]

PREPARED STATEMENT OF GRACE KOH, VICE PRESIDENT OF GOVERNMENT RELATIONS
AT CIENA AND FORMER AMBASSADOR AND HEAD OF U.S. DELEGATION TO THE
WORLD RADIOCOMMUNICATION CONFERENCE 2019

Introduction

The International Telecommunication Union (ITU) plays a central role in the global governance of radiofrequency spectrum and satellite orbits—resources that follow the laws of physics rather than the jurisdictional boundaries of national governments. Wireless communications, satellite services, aviation systems, weather satellites, and many other technologies depend on international coordination to operate reliably across borders. The ITU’s World Radiocommunication Conferences (WRCs) are the principal international forum for negotiating the regulatory framework that governs these uses.

I had the privilege of serving as the United States Ambassador and Head of Delegation to the 2019 World Radiocommunication Conference (WRC–19) in Sharm el-Sheikh, Egypt. In that role, I led the U.S. delegation in negotiations on a broad range of issues affecting the future of wireless communications, satellite services, and scientific systems.¹ My testimony explains why the ITU and WRC matter to the United States, how the United States prepares for these negotiations, how decisions are reached in practice, and what the U.S. government can do now to ensure strong U.S. leadership at WRC–27.

The decisions made at World Radiocommunication Conferences have long-lasting consequences. The Radio Regulations negotiated at these conferences establish the international rules governing spectrum use and satellite operations, often shaping communications markets and technology development for decades.² As wireless technologies continue to evolve and satellite constellations expand, the outcomes of these conferences increasingly affect U.S. economic competitiveness, national security interests, and scientific capabilities.

Preparing for a WRC is therefore a complex national undertaking requiring extensive technical analysis, diplomatic engagement, and coordination across Federal agencies and the private sector. The United States has historically maintained a strong and transparent preparation process that allows government and industry experts to work together to develop national positions for international negotiations. One of the central lessons from recent conference cycles, however, is that successful outcomes depend heavily on beginning that work early and resolving key issues well before the conference begins. This requires the Administration to prioritize the work of preparation.

This testimony explains why the ITU and the World Radiocommunication Conference matter to the United States, describes how the United States prepares for a WRC, explains how these conferences operate in practice, and offers recommendations for ensuring that the United States is fully prepared to advance its interests at WRC–27, which is scheduled to be held in Shanghai, China.

The ITU and the World Radiocommunication Conference: Why They Matter to the United States

Because radio signals cross national borders and satellites operate globally, international coordination is necessary to ensure that communications systems can function without harmful interference. Countries retain sovereignty over domestic spectrum decisions, but no country can fully realize the value of spectrum and satellite communications without agreed international rules. The principal forum for this coordination is the International Telecommunication Union.

The ITU provides the international framework through which nations coordinate the use of radiofrequency spectrum and satellite orbital resources.³ For a country such as the United States, whose economy, national security, and technological lead-

¹Today, I work for Ciena, a leading developer and manufacturer of optical networking equipment, critical to fiber deployments, submarine cables, and data center connectivity. Ciena does not participate in the World Radiocommunication Conference preparation or negotiations, nor does Ciena have a significant stake in the outcomes of WRC–27. I am testifying solely in my personal capacity as the former U.S. Ambassador and Head of Delegation to WRC–19, and my remarks are my own.

²*Constitution of the International Telecommunication Union* art. 4, Apr. 22, 1992, 1825 U.N.T.S. 331 (“ITU Constitution”); *see also* S. Treaty Doc. No. 104–34 (1996) (transmitting the ITU instruments to the Senate); 47 C.F.R. § 2.100 (2024). Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce, *Manual of Regulations and Procedures for Federal Radio Frequency Management* ch. 4 (Jan. 2023 rev. ed.), at <https://www.ntia.gov/page/manual-regulations-and-procedures-federal-radio-frequency-management>.

³*See* note 2 *supra*.

ership depend heavily on reliable access to spectrum, the ITU is an essential institution.

At the center of the ITU's radiocommunication work are the Radio Regulations, the international treaty instrument governing the allocation and use of spectrum globally.⁴ These regulations create the framework that allows communications systems to operate predictably across national boundaries. From satellite communications and mobile broadband networks to aviation safety systems and maritime navigation services, internationally coordinated spectrum use is fundamental to the modern global economy.

Participation in the ITU allows the United States to lead in shaping that framework. Through the ITU's study groups, working parties, and World Radiocommunication Conferences, countries negotiate how spectrum will be used internationally and under what technical conditions. These decisions affect the development of new technologies, the availability of spectrum for commercial and governmental services, and the ability of satellite systems to operate globally. As a result, the ITU's work has a direct impact on the competitiveness of U.S. industries and the effectiveness of U.S. government operations.

Although the ITU provides the framework for international coordination, each nation retains full sovereignty over its spectrum resources.⁵ In the United States, spectrum management responsibilities are established by Congress and divided primarily between the Federal Communications Commission (FCC), which manages spectrum used by commercial and non-federal entities, and the National Telecommunications and Information Administration (NTIA), within the Department of Commerce, which manages spectrum used by Federal agencies.⁶ These institutions implement international commitments through domestic regulatory processes.

That constitutional and statutory structure also explains how the United States participates in the treaty framework of the Radio Regulations. When a World Radiocommunication Conference concludes, member states sign the Final Acts incorporating the revisions adopted during the conference. The United States signs those Final Acts, typically with carefully considered reservations or declarations, to ensure that implementation remains consistent with U.S. law and preserves the statutory authorities of U.S. regulatory agencies. In practice, the United States has long supported the substance of the Radio Regulations while ensuring that its international commitments remain compatible with domestic law.

The ITU matters to the United States for several reasons.

*First, it matters for economic growth and innovation.*⁷ The United States is home to many of the world's leading telecommunications companies, satellite operators, equipment manufacturers, and technology innovators. Harmonized spectrum allocations developed through the ITU allow these companies to build technologies and services for global markets. Satellite operators have always recognized the critical role that ITU regulations play in the deployment of their services. The ITU governs orbital slot allocations and interference protections necessary to the operation of satellite services. More recently, mobile communications service operators have sought to harmonize bands at the ITU for next generation mobile telecommunications services. When bands are aligned internationally, manufacturers benefit from economies of scale, deployment costs fall, and new services can be introduced more quickly.

Second, the ITU matters for national security and government operations. Many U.S. government systems—including military communications, intelligence platforms, weather satellites, aviation systems, and other critical capabilities—depend on spectrum that must be coordinated internationally. Active engagement in the ITU helps ensure that these systems can operate without harmful interference and

⁴ *Radio Regulations*, ITU (2020 ed.), <https://www.itu.int/pub/R-REG-RR/en>.

⁵ ITU Constitution art. 44, ¶2, Apr. 22, 1992, 1825 U.N.T.S. 331.

⁶ Communications Act of 1934, 47 U.S.C. §§ 151, 301, 305 (2018); National Telecommunications and Information Administration Organization Act, 47 U.S.C. §§ 901–902 (2018); 47 U.S.C. § 305 (2018). Memorandum of Understanding Between the Federal Communications Commission and the National Telecommunications and Information Administration (Aug. 2, 2022), <https://docs.fcc.gov/public/attachments/DOC-385867A1.pdf;> 47 U.S.C. § 922 (2018).

⁷ See, e.g., Meredith Attwell Baker, #RestoreAuctionAuthority with a Spectrum Pipeline, CTIA BLOG (Mar. 8, 2024), <https://www.ctia.org/news/restoreauctionauthority-with-a-spectrum-pipeline> (stating that the U.S. wireless industry supports 4.5 million jobs and contributes \$825 billion to the economy each year); see also BryceTech, *State of the Satellite Industry Report: 2025 Executive Summary* (Satellite Industry Ass'n, May 13, 2025), <https://sia.org/wp-content/uploads/2025/05/SSIR25-2025-SSIR-FY2024-1-Pager-Exec-Summary-1.pdf> (indicating that In 2024, the satellite industry accounted for \$293 billion—71 percent of the \$415 billion global space economy).

that international decisions preserve the flexibility Federal agencies need to carry out their missions.⁸

Third, the ITU matters for public safety and critical infrastructure. Aviation communications, maritime navigation, weather monitoring, and emergency communications all depend on internationally coordinated spectrum allocations. Aircraft and ships move routinely across borders, and weather and Earth-observation satellites provide global coverage. International coordination through the ITU helps ensure that these safety-of-life and infrastructure-related systems operate reliably.

U.S. engagement with the ITU has remained broadly supportive across recent administrations, even as the geopolitical environment has evolved. During President Trump's first administration, U.S. policy toward multilateral institutions emphasized ensuring that international organizations advanced U.S. interests. Even so, the United States remained actively engaged in ITU radiocommunication work, recognizing that global spectrum coordination is essential to both government operations and the success of American technology companies. During that period, the United States strongly supported Doreen Bogdan-Martin's successful campaign for election as Director of the ITU Telecommunication Development Bureau, making her the first woman elected to a top ITU leadership post.⁹

The Biden administration placed renewed emphasis on coalition-building and international technology governance. That approach was reflected in the successful campaign to elect Doreen Bogdan-Martin as Secretary-General of the ITU in 2022, making her the first woman to lead the organization.¹⁰ The United States worked with a broad coalition of partner countries to support her candidacy, reflecting a shared commitment to a technically grounded and transparent international telecommunications framework.

The current Trump administration has continued to support active U.S. engagement and U.S. leadership within the ITU, including support for Bogdan-Martin's bid for re-election.¹¹ That continuity reflects a bipartisan recognition that the ITU remains important to protecting U.S. technological leadership, supporting open and competitive communications markets, and ensuring that international communications policies remain consistent with U.S. economic and security interests.

The strategic importance of the ITU has grown as communications technologies have become more central to economic growth, national security, and digital infrastructure. Demand for spectrum continues to increase as wireless systems, satellite constellations, and data-intensive applications expand. At the same time, competition within the ITU has intensified. China has increased its engagement in ITU activities, including through technical participation, leadership roles, and efforts to shape international telecommunications standards and spectrum policies. These efforts reflect a broader strategy to influence global technology governance.¹²

⁸See ITU Constitution, art. 45; *see also* ITU Constitution, art. 48 (explicitly recognizing the sovereignty of military and national defense systems).

⁹Press Release, Nat'l Telecomm. & Info. Admin., *Statement of Assistant Secretary Redl on Doreen Bogdan-Martin's Election as Director of the ITU's Telecommunication Development Bureau* (Nov. 5, 2018), <https://www.ntia.doc.gov/press-release/2018/statement-assistant-secretary-redl-doreen-bogdan-martins-election-director-itu-s>.

¹⁰Press Release, U.S. Dep't of State, Office of the Spokesperson, *U.S. Support for ITU Secretary General Candidacy of Doreen Bogdan-Martin* (Sept. 22, 2021), <https://www.state.gov/u-s-support-for-itu-secretary-general-candidacy-of-doreen-bogdan-martin/>.

¹¹Press Release, U.S. Dep't of State, Office of the Spokesperson, *U.S. Support for the Re-Election of Doreen Bogdan-Martin as ITU Secretary-General* (June 20, 2025), <https://www.state.gov/releases/office-of-the-spokesperson/2025/06/u-s-support-for-the-re-election-of-doreen-bogdan-martin-as-itu-secretary-general>.

¹²China's campaign to engage on the global stage and lead the innovation agenda shows clearly at the ITU. In 2014, China supported the candidacy of Zhao Houlin for ITU Secretary-General, which came after years of service in ITU leadership. Under Zhao's tenure, the ITU Secretary-General's office consistently lent rhetorical legitimacy to Chinese digital policy priorities. *See, e.g.,* Chen Meng, *ITU Secretary-General: ICT a Foundation for Development Under Belt and Road Initiative*, People's Daily Online (May 23, 2017), <http://en.people.cn/n3/2017/0523/c90000-9219335.html> ("[ICT networks] are essential to future prosperity. The Belt and Road Initiative recognizes this critical role played by ICTs as a foundation for development," Zhao stressed. He added that ITU and China are working together to implement ICT projects, which will enable growth and innovation across many industries.") (Chinese state media). *See also* Council on Foreign Relations, *China's Approach to Global Governance*, <https://www.cfr.org/china-global-governance> (last visited Mar. 7, 2026); Philip Lott, *How China Became the Standard Maker*, 9DashLine (Oct. 26, 2022), <https://www.9dashline.com/article/how-china-became-the-standard-maker>; Most Important UN Agency You Have Never Heard Of, CSIS (2021), <https://www.csis.org/analysis/international-telecommunication-union-most-important-un-agency-you-have-never-heard>; Elsa B. Kania & John Costello, *The Fight over the Fate of the Internet*, UC San Diego China Focus (Apr. 21, 2021), <https://chinafocus.ucsd.edu/2021/04/21/the-fight-over-the-fate-of-the-internet-the-economic-political-and-security-costs-of-chinas-digital-standards->

For that reason, sustained U.S. leadership in the ITU remains essential. Active participation in study groups, working parties, and World Radiocommunication Conferences allows the United States to shape the technical and regulatory foundations of global communications networks. It also allows the United States to work with allies and partners to promote spectrum policies that support innovation, interoperability, and efficient spectrum use.

The ITU's most consequential decisions regarding international spectrum use are made at the World Radiocommunication Conference. At these conferences, member states negotiate updates to the Radio Regulations and determine how spectrum will be allocated or regulated to support existing and emerging services. Those decisions directly affect U.S. commercial, scientific, and governmental interests. For that reason, the WRC is one of the most important international forums shaping the future of communications policy.

Key Issues at WRC-27

At WRC-27, administrations will confront a series of spectrum and satellite regulatory decisions that will shape the next decade of global communications.¹³

- *Spectrum for Future Mobile Networks (6G).* WRC-27 will consider identifying additional spectrum for International Mobile Telecommunications (IMT), the global framework used for 5G and future 6G systems. Decisions on mid-band spectrum—particularly in the 4–8 GHz range—will influence whether the United States and its allies can maintain leadership in next-generation wireless technologies while ensuring continued access for critical government and satellite systems.
- *Regulatory Framework for Large Satellite Constellations.* With thousands of satellites now being deployed in low Earth orbit by U.S. companies such as SpaceX, Amazon, and others, WRC-27 will examine rules governing how non-geostationary satellite systems share spectrum and coordinate with other space services. These decisions could significantly affect the growth of the emerging global satellite broadband industry.
- *Direct-to-Device Satellite Communications.* The conference will consider regulatory frameworks that enable satellites to communicate directly with consumer devices such as smartphones. This technology has the potential to extend connectivity to rural areas and provide critical communications during disasters, but it raises complex spectrum-sharing questions between terrestrial and satellite networks.
- *Protection of Weather and Earth-Observation Satellites.* Certain frequency bands used by passive sensing satellites are essential for weather forecasting, climate monitoring, and national security. The United States has historically played a leading role in protecting these bands at WRC conferences to ensure that commercial spectrum use does not degrade the data used by meteorologists and defense agencies.
- *Spectrum for Aviation, Maritime, and Global Connectivity.* WRC-27 will examine additional spectrum for satellite communications used by aircraft and ships, including systems that provide in-flight connectivity and maritime broadband. These systems are increasingly important for global transportation safety and economic activity.
- *Lunar Communications and the Expansion of Space Activity.* For the first time, the conference will study spectrum allocations that could support communications between spacecraft operating in lunar orbit and on the lunar surface. As both government and commercial lunar missions accelerate, these decisions could help shape the regulatory framework for communications beyond Earth orbit.
- *Interference Risks from Mega-Constellations and Spectrum Sharing.* The rapid growth of satellite constellations raises new technical challenges related to interference management, spectrum sharing, and coordination between space systems and terrestrial services. Addressing these challenges will be critical to

strategy/; Steve Lang, *The Path to Victory in Shanghai at the World Radiocommunication Conference*, Broadband Breakfast (Oct. 22, 2025), <https://broadbandbreakfast.com/steve-lang-the-path-to-victory-in-shanghai-at-the-world-radiocommunication-conference/>; Tech. Policy Inst., *International Spectrum Leadership: Key Takeaways* (Mar. 20, 2025), <https://techpolicyinstitute.org/publications/broadband/spectrum/international-spectrum-leadership-key-takeaways/>.

¹³ Int'l Telecomm. Union, Resolution 813 (WRC-23), Agenda for the 2027 World Radiocommunication Conference, in *Final Acts of the World Radiocommunication Conference (Dubai, 2023)*.

maintaining reliable communications and protecting scientific systems such as radio astronomy.

As in previous conferences, these discussions will require balancing the economic benefits of expanded mobile broadband capacity against the need to protect other critical services—aviation and maritime safety systems relied upon by U.S. airlines, aircraft manufacturers, and global shipping operators; and passive sensing bands essential to weather forecasting and climate monitoring conducted by NOAA and NASA. These decisions also bear directly not only on U.S. economic and technological leadership but also on U.S. national security and the defense industrial base, affecting military communications, space and intelligence systems, secure aviation and maritime operations, and the ability of U.S. defense and aerospace suppliers to operate and deploy globally under predictable international spectrum rules.

How the United States Prepares for a World Radiocommunication Conference

A defining feature of the U.S. preparation process for World Radiocommunication Conferences is its high degree of transparency and stakeholder participation. Unlike systems in which spectrum policy is developed largely within a government ministry, the U.S. approach incorporates extensive participation from Federal agencies, private-sector stakeholders, technical experts, and research institutions. Much of the preparatory work occurs in open forums where participants contribute technical studies, regulatory proposals, and operational perspectives. For example, meetings of the FCC's WRC Advisory Committee are generally open, and many of the documents developed through the process are publicly available. This openness allows the United States to draw on the technical depth of its communications industry, research institutions, and engineering community, producing sophisticated technical contributions that often strengthen the credibility of U.S. proposals abroad.

That openness also makes the process more complex. Stakeholders often have sharply different priorities. Wireless carriers may seek additional spectrum for advanced mobile systems, satellite operators may seek globally harmonized allocations for broadband constellations, and Federal agencies may require continued protection for military systems, aviation services, weather satellites, or scientific sensors. The scientific community may emphasize the importance of protecting passive sensing bands from harmful interference. Reconciling those competing interests into coherent U.S. positions is one of the central challenges of preparing for a WRC.

WRC Preparation Timeline

Preparation for a WRC begins soon after the conclusion of the previous conference and unfolds over several years. The agenda for each WRC is set by the preceding WRC. Once the agenda for the next conference has been adopted, the ITU Radiocommunication Sector begins conducting technical studies on the new agenda items. During this period, U.S. experts from both government and industry participate in ITU study groups and working parties to help develop the methods and analyses that will later inform regulatory decisions.

Roughly three years before the conference, the domestic preparation process becomes more formalized. The FCC establishes the WRC Advisory Committee (WAC), which organizes stakeholders into working groups around the conference agenda items. In parallel, Federal agencies intensify their internal and interagency analysis through NTIA-led processes. During this stage, stakeholders conduct detailed studies of compatibility, interference, sharing feasibility, and operational requirements. These technical analyses frequently form the basis of preliminary U.S. views and proposals.

The preparatory process culminates in the Conference Preparatory Meeting (CPM), held at the ITU several months before the WRC. The CPM compiles the technical and regulatory options developed during the study cycle and effectively sets the parameters for negotiation at the Conference itself. Success at the CPM is shaped not only by domestic preparation, but by sustained engagement in regional organizations and bilateral discussions well in advance of that meeting. The three meetings held by Inter-American Telecommunication Commission (CITEL) to plan regional strategies for the WRC are critical milestones in the preparatory process, as they can determine whether U.S. proposals enter the CPM and the WRC with regional backing.

Two to three years before the conference, the United States also begins to focus more intensively on international coordination. U.S. officials participate in regional preparatory meetings and bilateral consultations with other administrations to build support for U.S. positions, understand where other countries are heading, and identify where compromise may be possible.

During the final year before the conference, U.S. negotiating positions are refined, the delegation is assembled, and the Administration names a Head of the U.S. Delegation. The Head of the U.S. Delegation is granted the status of a U.S. Ambassador for six months during this period and is accorded full powers to conduct negotiations at the WRC and sign the treaty on behalf of the United States. Diplomatic engagement intensifies as administrations seek to narrow disputes before formal negotiations begin. Input on U.S. proposals and positions are closed to input from the general public and is limited to the members of the U.S. delegation.

Coordination of Federal Government Viewpoints

Within the Federal government, preparation for a WRC is coordinated through NTIA, which manages spectrum policy for Federal agencies and chairs the Interdepartment Radio Advisory Committee (IRAC). The IRAC is a long-standing interagency body composed of representatives from departments and agencies that rely on radio systems to carry out their missions. The IRAC advises NTIA in assigning frequencies to U.S. government operations and developing policies, technical criteria, and procedures for spectrum allocation.¹⁴

The IRAC's Radiocommunication Conference Subcommittee (RCS) serves as the principal Federal forum for examining the implications of specific WRC agenda items. Agencies submit detailed engineering studies and operational assessments addressing how proposed regulatory changes could affect Federal systems. These analyses commonly evaluate spectrum sharing, interference risks, and protection criteria for sensitive operations, including military systems, aviation services, Earth-observation satellites, and passive sensing bands used for weather forecasting and scientific research.

Because Federal agencies operate a wide range of systems with very different missions, the discussions within the RCS can be highly complex and, at times, contentious. The Department of Defense may depend on a band for mission-critical operations while commercial stakeholders seek greater access to that same spectrum for terrestrial or satellite services. Agencies such as NOAA and NASA may require strong protections for passive bands even as pressure grows to expand active services nearby. These are not merely bureaucratic disagreements; they reflect legitimate mission needs and the practical difficulty of accommodating them in a finite spectrum environment.

In parallel with the Federal interagency process, the FCC gathers private-sector input through the WAC.¹⁵ The WAC is a Federal advisory committee composed of representatives from wireless carriers, satellite operators, equipment manufacturers, technology companies, engineering organizations, and trade associations. It conducts much of its work through working groups organized around specific agenda items. Those groups develop technical analyses and draft proposed positions on matters such as mobile broadband allocations, satellite regulatory frameworks, access for emerging technologies, and protection of scientific and safety-of-life services. The private sector process can be as contentious as the intra-governmental process, as the uses of spectrum have proliferated over time and more businesses view access to spectrum as vital to their operations.

Technical studies are essential to World Radiocommunication Conference preparation, but they are not, by themselves, the basis for decisionmaking. Engineering analyses help define what is technically feasible and where interference risks or sharing constraints arise, but the resolution of U.S. positions ultimately reflects public policy priorities established by Congress, the Administration, national security authorities, and many other stakeholders. Those priorities—economic growth, national security, public safety, scientific integrity, and global competitiveness—guide how technical options are weighed and which tradeoffs are acceptable. The task of WRC preparation is therefore not to identify a single “correct” technical outcome, but to use technical evidence to determine how best to advance the Nation's stated objectives while making the most efficient use of an increasingly scarce and contested resource.

One of the defining strengths of the U.S. process is the diversity of interests engaged in the formation of U.S. positions and proposals. The WAC develops proposals and analyses reflecting commercial and technical perspectives. The IRAC and RCS evaluate how those proposals may affect Federal systems and missions. Through coordination among NTIA, the FCC, and the Department of State, these views are ul-

¹⁴ See U.S. Gov't Accountability Off., GAO-04-1028, *Interdepartment Radio Advisory Committee: IRAC Representatives Effectively Coordinate Federal Spectrum* (2004); 47 U.S.C. §305.

¹⁵ See Federal Advisory Committee, World Radiocommunication Conference Advisory Committee, 90 Fed. Reg. 59,825 (Dec. 22, 2025).

timately reconciled and integrated into U.S. preliminary views, formal proposals, and negotiating positions.

That process can be difficult, but it also produces an important benefit: by the time the United States reaches a final position, many of the most serious objections have already been surfaced and worked through domestically. A U.S. position that has survived that process is often stronger internationally because it has already been tested against a wide range of technical and operational concerns.

Department of State plays a critical role in bringing these domestic negotiations to as close to resolution as possible during the last year to year and half of preparation. Further, the WRC is ultimately an international treaty conference, which is the remit of the State Department.¹⁶ In addition to coordinating the final position of the United States during the final year of preparation, the Department of State prepares the delegation for negotiations, determines the strategy and fallback positions, and designates spokespersons who can effectively convey U.S. positions to persuasive effect.

Domestic preparation, however, is only one part of the process. Because decisions at a WRC are negotiated among nearly 200 administrations, successful outcomes depend heavily on international coalition building before the conference begins. U.S. officials participate actively in regional preparatory processes, especially through CITEL, where countries of the Americas develop common approaches for upcoming conferences. The Department of State also conducts bilateral consultations with administrations in other regions to exchange views, advance U.S. priorities, and identify areas where compromise may be possible. Those efforts are often decisive in shaping the conference environment before the first day of the WRC.

How a World Radiocommunication Conference Operates in Practice

A World Radiocommunication Conference is one of the most complex and technically demanding treaty negotiations conducted under the auspices of the ITU. Nearly 200 national administrations participate, along with representatives from international organizations, technical bodies, and industry stakeholders. The conference typically lasts four weeks, and the result is a set of revisions to the Radio Regulations that have been debated for the previous four years.

At the beginning of the conference, participating administrations elect the conference leadership. The chairman is traditionally nominated by the host country and formally elected in the opening plenary.¹⁷ The chairman plays a central role in guiding the work of the conference, maintaining momentum, and helping administrations find paths toward compromise.

Supporting the chairman is the Steering Committee, which helps coordinate the work of the various committees and manage the overall conduct of the conference. The vice chairs of the conference who make up the Steering Committee typically come from the leadership of the major regional telecommunications organizations: CITEL, Asia-Pacific Telecommunity (APT), the European Conference of Postal and Telecommunications Administrations (CEPT), the African Telecommunications Union (ATU), the Arab Spectrum Management Group (ASMG), and the Regional Commonwealth in the Field of Communications (RCC, representing central Asian countries). The Vice Chairs matter because they influence how negotiations are organized, how disputes are escalated, and how compromises are developed.

The substantive work of the conference is carried out through a system of committees, working groups, and ad hoc drafting groups. The Plenary, which includes all participating administrations, elects leadership, receives committee reports, and ultimately adopts the final revisions to the Radio Regulations. Other committees address credentials, budget and administration, detailed technical and regulatory negotiations, and editorial matters.

The substantive negotiations occur in committees and working groups addressing specific agenda items. Those groups review the technical studies developed during the preparatory cycle, debate competing regulatory proposals, and attempt to reconcile the needs of different services. The negotiations are often highly technical, and national delegations typically rely on engineers and subject-matter experts to lead them.

¹⁶See 22 U.S.C. § 2651a(a) (vesting authority in the Secretary of State to carry out the foreign relations of the United States); Delegation of Authority No. 480, 86 Fed. Reg. 70,885 (Dec. 13, 2021) (delegating authority to designate United States representatives to international conferences and meetings convened by international organizations); see also Federal Communications Commission, *World Radiocommunication Conference (WRC)*, <https://www.fcc.gov/wrc> (noting that the Executive Branch, led by the Department of State, heads the U.S. delegation to WRC).

¹⁷The election at the conference is a formality. The Chair of the WRC is typically well vetted and socialized with the conference members by the time the conference begins.

Each administration sends a national delegation composed of government officials, engineers, policy experts, and technical advisors. The United States delegation to WRC-19, for example, included representatives from the FCC, NTIA, the Department of State, the Department of Defense, NASA, NOAA, the Federal Aviation Administration, the National Science Foundation, and other agencies, along with private-sector advisors who provided specialized technical expertise. In the working sessions, government delegates serve as the official spokespersons for the United States; their responsibilities are to monitor the progress of the agenda items, ensure that the U.S. interests are considered appropriately, and coordinate with the U.S. delegation and regional organizations. Private-sector participants provide advice, technical support, and operational insight. The size of the U.S. delegation reflects the importance of many of the WRC agenda items to U.S. national security and economic interests as well as the U.S. capacity to address many of these intensely technical questions. Insufficient representation on a key agenda item risks undermining U.S. leadership in negotiations.¹⁸

Although negotiations formally occur among individual administrations, much of the real diplomatic activity at a WRC occurs through regional coordination groups. Regional organizations arrive with pre-conference proposals or common positions and continue coordinating strategy throughout the meeting. Because these groups may represent dozens of administrations, their collective views can significantly influence the direction and outcome of negotiations. For that reason, coalition building among regions—and not simply among individual countries—is essential to success.

Consistent with long-standing ITU practice, WRCs do not typically resolve issues through formal votes.¹⁹ Outcomes are reached by consensus, and a vote is usually treated as an indication that the preparatory and diplomatic process has broken down. The deepest incentive for compromise is that the alternative—no agreement—distributes costs widely while concentrating them unpredictably. At the WRC, the physical reality of interference, the treaty status of outcomes, the infrequency of conferences, and the complexity of cross-agenda linkage combine to make consensus the dominant strategy for most participants most of the time, even when the substantive terms fall short of any party's ideal. As a result, administrations devote significant effort to compromise and coalition-building, because durable international spectrum rules depend on broadly supported outcomes rather than narrow majorities.

Striving for consensus means that the pace of a WRC can be extremely demanding. People, companies, and governments must make hard choices to walk away from the negotiating table with what they need if not what they wanted. Working groups meet throughout the day and often into the evening. During the final week, negotiations frequently continue late into the night as administrations attempt to close remaining gaps. Informal consultations organized by committee chairs or working group leaders can become especially important during this stage. These smaller drafting groups often allow for more candid exchanges and more rapid movement toward compromise than formal sessions permit.

Leadership quality can strongly affect outcomes. Effective chairs help structure discussions, manage procedure fairly, identify the real points of disagreement, and develop pathways to compromise. Weak leadership can delay discussions, create confusion, or force unresolved issues upward too late in the conference. In some instances, poor management of a working group can lead to last-minute scrambles that could have been avoided with more disciplined chairing. As such, active involvement from the United States in selecting the leadership for the conference committees contributes to success.

As unresolved issues accumulate, they are gradually elevated through the conference structure. Matters that cannot be resolved in a working group may be taken up by committee leadership, and especially difficult questions may eventually require attention from the conference chairman and the Steering Committee. This escalation process contributes to the accelerating tempo of the final days of the conference.

An important but often overlooked part of the conference structure is the Editorial Committee, which is responsible for finalizing the treaty text that will amend the

¹⁸ At WRC-19, the U.S. delegation included 167 participants drawn from multiple Federal agencies and from the private sector, reflecting the wide range of spectrum users and technologies affected by the conference. WRC-19 may have been the first WRC, where the Chinese delegation (183) outnumbered the U.S. delegation.

¹⁹ See *World Radiocommunication Conferences (WRC)*, Int'l Telecomm. Union, <https://www.itu.int/en/ITU-R/conferences/wrc/Pages/default.aspx> (last visited Mar. 12, 2026) (describing World Radiocommunication Conferences as treaty-level negotiations conducted under ITU constitutional procedures, with outcomes reflected in negotiated revisions to the Radio Regulations).

Radio Regulations. Because the Radio Regulations are issued in the six official languages of the United Nations, the Editorial Committee must ensure that the language adopted by the conference is reflected accurately and consistently across all official versions. That responsibility requires not only linguistic precision but also a deep understanding of the underlying technical and regulatory concepts. Members of the Editorial Committee must therefore possess a high degree of technical competence and professional integrity. Their role is not to reopen compromises, but to ensure that the conference's negotiated outcome is faithfully captured. The United States regularly offers a delegate for the Editorial Committee.

The resolution of the WRC agenda alone is enough to generate substantial friction as the conference moves toward resolution of these questions. To complicate matters further, geopolitical issues can occasionally surface on the margins as well. At WRC-19, for example, a number of administrations circulated a declaration supporting greater participation of women in telecommunications and spectrum policy. Many delegations supported the objective, but the initiative also prompted discussion about whether broader policy declarations should be associated with a conference whose formal mandate is technical in nature. The declaration ultimately remained a voluntary statement rather than becoming part of the treaty outcome.²⁰

Questions related to Palestinian participation and status have also surfaced periodically at WRCs and ITU Plenipotentiary meetings. These issues can create serious legal and diplomatic difficulties for some administrations, including the United States, if handled incautiously. In practice, such disputes are often managed through quiet diplomacy involving the United States, the host country, and moderate Arab administrations that have a strong interest in preventing political disputes from derailing the conference's technical work. The result is typically a compromise that acknowledges Palestinian concerns while allowing the conference to proceed without jeopardizing the participation of key administrations.²¹ However, preparation for this particular issue often requires the State Department to engage with the Palestinian and Israeli governments during the periods between ITU conferences to mitigate disruption at the conference.

Challenges and Recommendations for WRC-27 in Shanghai

The challenges of preparing for WRC-27 will be even more difficult, simply due to the mounting pace of technological change and the scale of the negotiations. As a result, the most important overarching lesson from recent conference cycles is the need to start earlier, align U.S. positions sooner, and resolve the most difficult issues well before the conference convenes. Earlier alignment strengthens the ability of U.S. negotiators to build international support, shape regional outcomes, and manage the increasingly complex diplomatic environment surrounding international telecommunications policy.

One challenge arises from the diversity of U.S. spectrum stakeholders; the resolution of these interests can be difficult and protracted. Reconciling these interests into unified U.S. positions requires sustained coordination among experienced officials at NTIA, the FCC, the Department of State, and numerous other agencies and stakeholders. Just as importantly, the debate between NTIA, FCC, and the Department of State must occur on equal footing to ensure that private sector and governmental equities are evaluated legitimately. The FCC's loss of auction authority during the WRC-23 cycle also weakened an important component of its domestic spectrum policy toolkit, at a time when private-sector interests were pressing for clear U.S. leadership on spectrum issues.²² Fortunately, this has been remedied.²³ During preparation for WRC-19, NTIA operated for a period under an Acting Administrator, which may have limited its ability to fully leverage the Department of Commerce's institutional weight in negotiations. These key agencies should have full authority during these negotiations to ensure full, timely resolution of U.S. positions.

These disagreements are not unusual. Experienced negotiators sometimes hold high-value issues until late in the process to preserve bargaining leverage. But the

²⁰ See World Radiocommunication Conference 2019 (WRC-19), Declaration on Promoting Gender Equality, Equity and Parity in the ITU Radiocommunication Sector, in *Final Acts of the World Radiocommunication Conference (Sharm el-Sheikh, 2019)* (Int'l Telecomm. Union 2020).

²¹ See, e.g., Res. 12 (Rev. WRC-19), Assistance and Support to Palestine, in *Final Acts of the World Radiocommunication Conference (Sharm el-Sheikh, 2019)* (Int'l Telecomm. Union 2020).

²² See Patricia Moloney Figliola & Jill C. Gallagher, *The Federal Communications Commission's Spectrum Auction Authority: History and Options for Reinstatement*, Cong. Research Serv., No. R47578 (Sept. 12, 2023) (noting expiration of FCC auction authority on Mar. 9, 2023); see also "Wireless Telecommunications Bureau Seeks Comment on Ways to Facilitate Access to Spectrum in Light of Ongoing Lapse of Auction Authority," 39 FCC Rcd 2143 (2024).

²³ See One Big Beautiful Bill Act, Pub. L. No. 119-21, § 43101, 139 Stat. 72 (2025) (amending 47 U.S.C. § 309(j)).

risks of delay have become more serious in this geopolitical environment. When U.S. proposals are finalized late in the study cycle, the United States has fewer opportunities to socialize those positions internationally, build support within regional organizations, and shape the negotiating environment before key meetings occur.

For WRC-27, that problem is compounded by the operating environment in Shanghai, where the United States should assume that some issues will be harder to resolve safely and candidly once the conference is underway. The United States should therefore seek to finalize most major proposals well before the Conference Preparatory Meeting and the final regional preparatory meetings. Earlier resolution will improve coalition building and reduce the risk of hasty decisions in Shanghai with unintended consequences.

A second challenge concerns the availability of experienced negotiators and technical experts. As noted earlier, spokespersons are critical to the success of the U.S. argument in shaping the outcome of a WRC resolution. Recent conferences have shown that it can be difficult to field enough seasoned spokespersons when multiple negotiations are occurring simultaneously. The skills needed to conduct technical studies are not identical to the skills needed to negotiate effectively in a multilateral treaty setting. Federal agencies should therefore identify and develop future spokespersons earlier in the cycle and provide training on conference procedure, negotiation strategy, and delegation coordination.

A third challenge is the logistics of managing a large U.S. delegation in an environment where surveillance must be assumed. A WRC delegation typically includes several hundred participants representing Federal agencies, private-sector advisors, and technical experts. That breadth is one of the strengths of the U.S. system, but it also creates management challenges. Leadership must ensure that information flows efficiently, that negotiators across committees understand broader delegation strategy, and that sensitive issues are elevated promptly. These challenges will be even greater in Shanghai, where operational discipline among both government and private-sector delegates will be especially important. Delegation leadership should strengthen structured reporting mechanisms, hold focused issue meetings, and ensure that decision-making channels are clear well before the conference begins. Security training for the delegation should begin quickly after the delegation is formed.

Administrative and logistical preparation also deserves more attention than it sometimes receives. Accreditation, travel coordination, security planning, document handling, and conference logistics must be managed early and carefully. Delays in delegation formation or accreditation can impede training, complicate security preparations, and reduce opportunities to build internal delegation cohesion before the conference. Administrative planning should therefore begin early in the cycle, with clear timelines and accountability for accreditation, travel, communications support, and other logistics.

International coalition building will remain indispensable. Because WRC decisions are negotiated among nearly 200 administrations, technical merit alone is not sufficient for success. Regional organizations play a central role in shaping the conference environment, and for the United States, CITEC remains a particularly important platform for developing support in the Americas. At WRC-19, engagement with key partners such as Canada, Brazil, and Mexico was instrumental in advancing U.S. priorities. Looking toward WRC-27, early and sustained engagement will also be important in Africa, among Arab administrations, and within Asia-Pacific processes. The United States should intensify diplomatic outreach early in the study cycle and use both bilateral and regional channels to build support well before the conference opens.

Although WRCs are primarily technical conferences, the broader geopolitical environment can affect them. Political disputes unrelated to spectrum policy can consume diplomatic attention and complicate negotiations. The Department of State should therefore begin early integration into the preparation process, not only to manage diplomatic outreach but also to anticipate and contain political issues before they disrupt progress on the technical agenda.

As discussed above, the decision to hold WRC-27 in Shanghai introduces an additional set of operational and security challenges that require early attention. The bottom line is that State Department must begin logistical preparation early in the year, perhaps even before the delegation is formed. To do so, State Department will require strong political support to ensure that it has the resources and clarity of mandate to act.

First, the United States should work with the ITU Secretariat and other relevant actors to ensure that the conference is conducted in a fair, transparent, and open manner consistent with long-standing ITU practice. The host country plays an important role in conference logistics, communications infrastructure, and administra-

tive arrangements. Early engagement will be important to ensure that delegations have reliable access to facilities, documents, and communications, and that conference procedures are administered evenhandedly.

Beyond these institutional considerations, the operating environment in Shanghai presents practical risks for the U.S. delegation. Internet access may be inconsistent or restricted, and commonly used collaboration platforms—such as Slack, Google Workspace, and certain Microsoft applications—may be unavailable or unreliable. Because WRC negotiations require constant communication with experts in Washington and elsewhere, reliable connectivity is essential. The State Department should work with conference organizers and the U.S. post in Shanghai to ensure that delegates have the tools and support necessary to maintain effective communications.

Delegation members should also assume that electronic communications and personal devices will be monitored. WRC delegations rely heavily on laptops, mobile devices, and shared technical documents to coordinate strategy and consult with outside experts. Protecting sensitive communications and information will therefore require careful planning and disciplined execution. The U.S. Consulate in Shanghai will be an important resource in this regard. Coordination with the Consulate can help ensure that delegation leadership has access to secure communications when necessary and appropriate locations for sensitive discussions away from the conference venue.

Other risks should also be anticipated. State-affiliated media may seek to frame conference developments in ways that support the host government's broader messaging. Delegation members should therefore exercise caution in public statements and media interactions. Protocol issues may arise during official events and bilateral meetings hosted by the organizing government, requiring clear guidance to ensure that participation remains consistent with U.S. diplomatic practice.

The location of the conference also raises export control and compliance concerns. U.S. export controls explicitly treat China as a heightened-risk destination for advanced and dual-use technologies, particularly in telecommunications, AI, semiconductors, and space systems. The Bureau of Industry and Security (BIS) and the International Trade Administration (ITA) both emphasize that China's military-civil fusion strategy complicates end-use and end-user risk assessments, creating elevated compliance risk for U.S. persons and companies.²⁴ Many U.S. delegates will represent companies or organizations involved in advanced communications technologies. Technical discussions at the conference may touch on sensitive matters, and delegation members must remain mindful of export control obligations. Pre-conference guidance should therefore address not only cybersecurity and travel security, but also device management, information handling, export compliance, and official protocol.

These risks reinforce the importance of forming the U.S. delegation early and beginning training well in advance of the conference. Delegates should receive briefings on cyber hygiene, travel security, communications discipline, export compliance, and host-country operating risks. This is especially important for agenda items involving national security concerns, where resolving U.S. positions earlier in the cycle will reduce the need for sensitive deliberations once the delegation is on the ground in Shanghai.

Finally, delegation leadership must establish and enforce clear expectations regarding discipline and operational security. The effectiveness of the U.S. delegation depends on its members acting in a coordinated and responsible manner. Delegates should understand that adherence to security guidance and delegation protocol is not optional. Leadership should be prepared to enforce those expectations, including sending individuals home if their actions place the security of the delegation or the effectiveness of the U.S. negotiating position at risk.

Conclusion

The World Radiocommunication Conference is one of the most consequential international forums shaping the future of wireless communications, satellite services, and scientific systems. The decisions made at these conferences influence global spectrum policy for decades and directly affect U.S. technological leadership, national security capabilities, and scientific interests.

²⁴ See Int'l Trade Admin., U.S. Dep't of Com., *China—U.S. Export Controls*, <https://www.trade.gov/country-commercial-guides/china-us-export-controls> (last published Sept. 25, 2025). Importantly, export control risk is not limited to physical shipments. The Export Administration Regulations (EAR) cover exports, re exports, transfers, and releases of controlled technology, including intangible transfers such as technical discussions or access to controlled data while abroad. See also 15 C.F.R. § 734.13(a)(2), (b) (2025).

The United States enters the WRC-27 cycle with important advantages: a transparent and inclusive preparation process, world-class technical expertise, and a tradition of close collaboration between government and industry. To capitalize on those strengths, however, the United States must act to:

- Resolve major U.S. positions earlier in the preparation cycle.
- Authorize and fund early logistical and security preparation for the Shanghai conference.
- Identify and train U.S. spokespersons earlier.
- Intensify coalition-building before the CPM and final regional meetings.
- Maintain strong delegation discipline and operational security.

Congress can play a key role in empowering the State Department to prepare early for logistical challenges and supporting the Department's authority to ensure discipline within the delegation.

If the United States does so, it will be well positioned to continue leading in the development of global spectrum policy and to ensure that the international regulatory framework supports innovation, economic growth, scientific progress, and critical government missions.

Senator FISCHER. Thank you, Ambassador. You were right on point there with your five minutes. Thank you.

Ambassador Lang, welcome. You are now recognized for five minutes.

**STATEMENT OF AMBASSADOR (RET.) STEPHEN A. LANG,
SENIOR ADVISOR, CREST HILL ADVISORS LLC AND
FORMER U.S. COORDINATOR FOR INTERNATIONAL
COMMUNICATIONS AND INFORMATION POLICY**

Ambassador LANG. Thank you, Chairwoman, Ranking Member, and members of the Subcommittee. I am honored and grateful for the opportunity to share my perspectives on this important topic. I had the honor of leading our delegation to the 2023 World Radiocommunication Conference and recently retired from the State Department after a 30-year career serving under five presidents.

I am honored to testify today on my own behalf based on those experiences and should note that I am not testifying on behalf of clients of Crest Hill Advisors.

The World Radiocommunication Conference may be the most consequential international negotiation that most people have never heard of. At the WRC, ITU members negotiate updates to the International Radio Regulations, a treaty-level instrument that allocates and harmonizes radio frequency spectrum to enable new services, prevent interference, and promote interoperability. As you know, spectrum is a finite resource. And with the rapid advancement of evermore data-intensive technologies and accelerating growth of mobile and wireless devices, it is increasingly precious to an ever-growing number of industries, government agencies, scientists, and consumers.

Radio frequency spectrum harmonization through the WRC has allowed industries ranging from mobile phones to Wi-Fi to achieve global economies of scale, driving billions of dollars in investment. It ensures our military that its radar and communication systems can operate reliably and without interference. And increasingly, the WRC is critical to unlocking the space economy, from new satellite technologies, to a human presence on the moon.

Like other multilateral bodies, the ITU and WRC are flawed, but there is no other mechanism that can realistically open global markets to wireless services. Private companies can join the ITU as sector members and participate in the WRC, an unusual feature for a U.N. organization that has worked to our advantage.

The stakes are high. China is aggressively promoting its approach to digital technology around the world, an approach that uses technology to restrict speech and repress dissent. It has targeted the ITU as a venue for expanding its global technology reach. That is why it was a significant blow to U.S. interests when the ITU Council voted to accept China's offer to host WRC-27 in Shanghai. A Chinese official will now be the presumptive Chair of the Conference, and information security will be a serious concern.

But these potential obstacles must not deter us. They should drive the United States to recommit to winning at the WRC. China's offer to host in the first place was motivated by the successful U.S. effort in 2022 to replace the Chinese Secretary General of the ITU with Doreen Bogdan-Martin, a uniquely qualified American citizen and former Department of Commerce official. China's offer to host the WRC was aimed at reasserting its influence.

With advanced preparation and planning, effective leadership, and a high-level commitment to success, the United States can achieve all of its objectives at WRC-27. I believe there are four critical steps that the U.S. Government must take to win.

First, keep the pressure on China. China won the vote to host by a narrow margin of only 25 votes of the 48 ITU Council members, and its legitimacy as host is already in question. We must continue to hold China accountable and press like-minded partners to do the same while urging the ITU to do so in its negotiations of the host country agreement.

Second, accelerate U.S. preparations. The U.S. delegation in the past has too often been disadvantaged by delays in developing U.S. positions. Senior leadership of U.S. agencies, including the FCC, and Departments of Commerce, Defense, and State, need to commit with White House support to developing U.S. positions as quickly as possible.

Third, build coalitions early. We cannot win this contest without friends and allies who share our priorities and are committed to standing up to opposition. The earlier we start building coalitions through persistent, high-level diplomatic engagement, the more successful we will be.

And finally, identify leadership now and build the right team. I understand that the administration has been working to identify the head of delegation for WRC-27, and I hope we will see an announcement soon. The sooner that happens, the better.

It will also be critical to make sure that he or she has the right team in place and is fully resourced to engage diplomatically on a global scale. The ITU is far from perfect, and the WRC process is frustrating and difficult. However, with a high-level commitment to action now, the United States can emerge from WRC-27 stronger and more competitive in the global tech race.

Thank you. And I look forward to your questions.

[The prepared statement of Ambassador Lang follows:]

PREPARED STATEMENT OF AMBASSADOR (RET.) STEPHAN A. LANG, SENIOR ADVISOR, CREST HILL ADVISORS LLC, AND FORMER U.S. COORDINATOR FOR INTERNATIONAL COMMUNICATIONS AND INFORMATION POLICY

Thank you, Chairwoman, Ranking Member, and members of the subcommittee. I am honored and grateful for the opportunity to share my perspectives on this important topic—U.S. Leadership at the World Radiocommunication Conference 2027: Strategy and Challenges Ahead of Shanghai. I had the honor of leading our delegation to the 2023 World Radiocommunication Conference in Dubai while I served as deputy assistant secretary of state in the Bureau of Cyberspace and Digital Policy. I recently retired from the State Department after a 30-year career serving under five Presidents and currently work as a senior advisor with Crest Hill Advisors LLC. Today, I am testifying on my own behalf based on my experience leading the WRC-23 delegation and working as a Foreign Service officer and not on behalf of any clients of Crest Hill Advisors.

The World Radiocommunication Conference may be the most consequential international negotiation that most people have never heard of. The conference takes place under the auspices of the International Telecommunication Union, or ITU, usually at four-year intervals. At the WRC, ITU members negotiate updates to the international Radio Regulations, a treaty-level instrument that allocates and harmonizes radiofrequency spectrum to enable new services, prevent interference, and promote interoperability. As you know, spectrum is a finite resource, and with the rapid advancement of ever more data-intensive technologies and the accelerating growth of mobile and wireless devices it is increasingly precious to a growing number of industries, government agencies, scientists, and consumers.

Radiofrequency spectrum harmonization through the WRC has allowed industries ranging from mobile phones to Wi-Fi to achieve global economies of scale driving billions in investment. It ensures militaries that their radar and other systems can operate reliably and without interference. It enables our devices to connect to local networks when we travel. It makes sure that aircraft and ships have continuous communications and functioning navigation wherever they go. And increasingly, the WRC and its work are critical to unlocking the space economy, from new satellite technologies to a human presence on the Moon.

Like other multilateral bodies, the ITU and WRC are flawed. The bureaucracy has grown bloated over the years; politics occasionally bleeds into technical conversations; and adversaries, like Iran and Cuba, have equal seats at the table. But there is no other mechanism that can realistically open global markets to wireless services on the ground, at sea, in the air, and in space. Private companies can join the ITU as sector members and participate in the WRC, an unusual feature for a UN organization that has worked to the advantage of the United States.

The stakes are high at the ITU. China is aggressively promoting its approach to digital technology around the world—an approach that uses technology to restrict speech, control assembly, and repress dissent. China's technological advancement is a direct threat, not only to our national security and economic prosperity, but also to our democratic values. It has targeted the ITU as a venue for expanding its global technology reach.

That's why it was a significant blow to U.S. interests when the ITU Council, the organization's governing body, voted to accept China's offer to host WRC-27 in Shanghai, despite the aggressive U.S.-led diplomat campaign to prevent such an outcome. A Chinese official will now be the presumptive chair of the conference, and information security for the delegations attending will be a serious concern.

But these potential obstacles must not deter us. They should drive the United States to recommit to winning at the WRC. China's offer to host in the first place was motivated by the successful U.S. effort in 2022 to replace the Chinese Secretary General of the ITU with Doreen Bogdan Martin, a uniquely qualified American citizen and former Department of Commerce official. Offering to host the WRC was an attempt by China to reassert its influence.

These challenges are not insurmountable. With advanced preparation and planning, effective leadership, and a high-level commitment to success, the United States can achieve all of its objectives at WRC-27.

I believe there are four critical steps that the U.S. government must take to win:

1. *Keep the Pressure on China:* China won the vote to host by a narrow margin with only 25 votes of the 48 ITU Council members, and its legitimacy as host is already in question. We must continue to hold China accountable and urge likeminded partners to do the same. We can do this directly with Chinese leadership in bilateral conversations while urging the ITU to do the same in its negotiation of the host-country agreement with Beijing. This should include demanding mitigating measures to address information security concerns as well

as securing commitments to impartial management of the conference. We must then work with partners to make sure China fulfills those commitments before and during the conference.

2. *Accelerate U.S. Preparations:* The WRC process continues throughout the four years between conferences. The U.S. delegation in the past has too often been disadvantaged by delays in developing U.S. positions through complicated internal negotiations. Senior leadership of U.S. agencies, including the Federal Communications Commission and the Departments of Commerce, Defense, and State, needs to commit, with White House support, to developing U.S. positions as a quickly as possible. Industry should cooperate in this effort. Even when positions are not fully finalized, identifying top priority issues early in order to be able to begin engagement with our foreign partners will be essential.
3. *Build Coalitions Early:* We cannot win this contest without friends and allies who share our priorities and are committed to standing up to opposition. The earlier we start building coalitions through persistent, high-level diplomatic engagement, the more successful we will be. This includes locking in support from our most closely aligned partners while also working hard to win over as many middle ground countries as possible. We must think creatively as well and explore new ideas for engagement. This could include a U.S.-hosted spectrum summit to build support among allies and countries on the fence in the months ahead of the conference.
4. *Identify Leadership Now and Build the Right Team:* I understand that the administration has been working hard to identify the right person to lead our delegation to WRC-27, and I hope we'll see a formal announcement soon. The sooner that happens the better. It will also be essential to make sure that he or she has the right team in place that is fully funded to engage diplomatically on a global basis. The conference is a complicated and sprawling event with multiple committee and working party meetings taking place simultaneously. It will be critical to have an adequately sized U.S. government contingent with the right skill sets at the conference to cover all of these competing events.

The ITU is far from perfect, and the WRC process can be frustrating and difficult. However, the United States has achieved much in reshaping the institution through Bogdan Martin's leadership and our own persistent and strategic engagement to make it fit for purpose and a venue where the United States can win. Now is the time to double down. With a high-level commitment to action now, the United States can emerge from WRC-27 stronger and more competitive in the global tech race.

Senator FISCHER. Thank you, Ambassador.

Next, we have Dr. Lewis. Welcome, and you are recognized for your opening comments.

**STATEMENT OF DR. JAMES A. LEWIS, DISTINGUISHED
FELLOW, CENTER FOR EUROPEAN POLICY ANALYSIS**

Dr. LEWIS. Thank you, and I thank the Committee for the opportunity to testify.

My testimony will discuss four issues: The environment in Shanghai, issues for LEO constellations and 6G, and process goals for the WRC. We have entered an era of ubiquitous global connectivity. The economic opportunities and the security implications are immense. The suppliers of ubiquitous connectivity will gain strategic advantage, and this is perhaps the subtext that drives the work. It is also a central part of competition with China. China recognizes the importance of technological leadership. It was, as you heard, narrowly able to win the WRC Chair, and will use this to shape the conference and strengthen its influence at the ITU.

Negotiating in China poses unique security challenges. Chinese espionage efforts can circumvent most defenses. Any unencrypted communication is subject to interception. Technologies that allow for surveillance without the device owner's cooperation or knowl-

edge suggest that even physically securing a device is insufficient. The U.S. can help reduce this risk by ensuring that all delegations are aware, and by suggesting possible means to counter it.

The outcome of the work will be shaped in part by the state of international relations 18 months from now. The WRC's negotiating terrain will be difficult, but not impossible. One important point to make is that the U.S. can insist on equitable and transparent processes, and emphasize the need for the Chinese Chair to play by the rules and respect consensus.

Sovereignty and competition in space are defining issues. China and other nations suffer from Starlink envy, fearing that U.S. commercial dominance will crowd them out of low-Earth orbit. In response, China submitted filings in late 2025 for roughly 2,003 satellites to challenge the U.S. They do not actually have the satellites in orbit, but they filed the claim.

Another issue will be how to regulate satellite providers as they increasingly compete with terrestrial providers. One controversial proposal suggests requiring national approval for satellite operations. This is an effort to shut off Starlink and a response to events in the Ukraine. Finding a way to accommodate sovereignty concerns without putting U.S. companies at a disadvantage is one of the challenges for the WRC.

Spectrum allocations, I do not need to tell you, spectrum allocations are always contentious. This will be the last WRC—people say 6G will appear in 2030, and if that is true, this will be the last WRC before it is deployed, 6G spectrum disputes it will be similar to the issues seen previously over 5G spectrum. Chief among these, not the only, but chief, is that the U.S. Government occupies spectrum that other countries see as commercial. China will likely try and force the U.S. to defend these national allocations.

The administration is moving quickly and is working to appoint the U.S. head of delegation. This is a valuable first step. A head of delegation with support from the administration and Congress can ensure consistency in the U.S. position and in the U.S. delegation. The next step is to reach consensus on U.S. WRC positions. WRC-27 will require nimble negotiating skills and a willingness to work with allies and partners to achieve the best outcome.

With that, thank you.

[The prepared statement of Dr. Lewis follows:]

DR. JAMES A. LEWIS, DISTINGUISHED FELLOW,
CENTER FOR EUROPEAN POLICY ANALYSIS

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 U.S. 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 U.S. 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 U.S. 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 U.S. in a difficult spot, such as seeking to reassign spectrum now assigned to national security purposes. The U.S. 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 U.S. 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 U.S. Head of Delegation to the WRC. The next step is to reach consensus on the U.S. 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 U.S. can begin to work with other nations develop common positions, the better. In the interim, the U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. will work again when it comes to spectrum allocation for 6G. The U.S. 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 interoperate 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 U.S. 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 U.S. 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 U.S. position.

The U.S. 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.

Senator FISCHER. Thank you, Dr. Lewis.

Next, we have Mr. Calabrese. Welcome, and you are recognized for your opening statement.

STATEMENT OF MICHAEL CALABRESE, DIRECTOR OF WIRELESS FUTURE AND SENIOR ADVISOR OF TECHNOLOGY AND DEMOCRACY, NEW AMERICA

Mr. CALABRESE. Thank you, Chairman Fischer. I direct the Wireless Future Program at New America, a nonprofit policy institute here in Washington. Decisions at WRC–27 concerning the allocation of spectrum for licensed cellular, Wi-Fi, and satellite services will have a substantial impact on the global competitiveness of leading U.S. industries. The ITU's harmonization of spectrum drives global economies of scale for equipment and consumer products.

ITU rules also determine whether our Nation's dominant low-Earth orbit, or LEO satellite providers, will have the spectrum and global market access they need to scale up lower costs and innovate both at home and worldwide. It is therefore crucial that the U.S. quickly finalize unified positions on priority issues, select a senior official as head of the delegation far sooner than in the past, and begin consulting widely with allies to build coalitions early.

To succeed in Shanghai, we will need to overcome several key challenges. The first is to develop clear, unified U.S. positions as soon as possible so that the State Department can first submit them for consideration by CITEL, the group of nations in our own ITU Region 2. There are also important issues that are not formal agenda items. The most salient are the ITU rules that govern spec-

trum sharing between traditional geostationary satellites, or GSOs, and the increasingly prevalent LEO constellations launched by SpaceX, Amazon, and others.

As the Space Bureau has acknowledged, the ITU's 25-year-old sharing rules are overprotective, needlessly reducing LEO satellite power, capacity, and operational performance. It remains possible to modernize satellite spectrum sharing rules at WRC-27, but this will require a focused U.S. effort.

A second challenge is the appointment of a senior official to lead preparations. Regardless of the short-term nature of the formal appointment, the U.S. should have that future delegation head on board at least 12 to 18 months prior to the conference.

A third challenge is the imperative to build coalitions in support of U.S. priorities. This must focus initially on consensus among the nations in our own Region 2 through the CITEL process.

A fourth key challenge is developing and managing priorities. The U.S. must resist making concessions, particularly early, on one set of issues if it undermines another vital industry or interest. An example is the global market for telecom equipment. The U.S. dominates the world market for enterprise Wi-Fi equipment and services. In contrast, for cellular equipment, China's Huawei controls a larger share of the global market than Europe's Nokia and Ericsson combined, while the U.S. has no significant share.

Not surprisingly, China is using the WRC process to push more nations to allocate the upper 6 GHz spectrum for licensed cellular, spectrum the U.S. allocated for unlicensed and Wi-Fi use in 2020. This effort undermines 6 GHz as a global superband for next-generation Wi-Fi. Agenda Item 1.7 proposes to change the allocation of 7.1 to 8.4 GHz to International Mobile, or IMT, for regions 2 and 3 only. This would restrict the flexibility of member nations to use portions of these bands to expand Wi-Fi capacity.

Mobile industry representatives on the FCC's WRC Advisory Committee support this change, despite the fact that the One Big Beautiful Bill specifically excluded 7.4 to 8.4 GHz from reallocation to IMT to protect national security operations.

As Chairman Fischer mentioned at the outset, we believe the U.S. position should oppose a change to IMT that U.S. law prohibited just nine months ago. Moreover, the results of NTIA's ongoing studies of the lower-7 GHz band will be available later this year, making a position now other than no change premature at best.

Finally, it is notable that 80 percent of the entire WRC agenda is focused on space-based and LEO satellite issues. My written testimony describes three agenda items that should be U.S. priorities because of their potential impact on our world-leading LEO satellite industry.

Thank you for the opportunity to testify.

[The prepared statement of Mr. Calabrese follows:]

PREPARED STATEMENT OF MICHAEL CALABRESE, DIRECTOR, WIRELESS FUTURE AND SENIOR ADVISOR ON TECHNOLOGY AND DEMOCRACY, NEW AMERICA

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).

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

¹ See NTIA, Radio Conference Subcommittee, <https://www.ntia.gov/page/radio-conference-subcommittee-rs>.

² See FCC, WRC–27, <https://www.fcc.gov/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>.

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.

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.

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

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>.

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 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.

Senator FISCHER. Thank you very much.

We will start our first round of questioning now, and I will begin five minutes for questions.

First, thank you for all your testimonies. I want to emphasize the point that the United States' influence work at WRC depends on the strength of the interagency coordination.

Ambassador Koh, what happens when other countries perceive that the United States has not fully aligned its domestic stakeholders before these negotiations begin?

Ambassador KOH. Thank you for the question, Chairwoman. I can speak personally from experience when I was able to—when I had the honor of representing the delegation. But when people do perceive that the U.S. Government is not aligned, the positions and proposals that the U.S. offers at regional conferences are not taken seriously, and not considered for adoption by other administrations, readily.

This can be countered to some degree by very frank discussions and negotiations between seasoned negotiators who can discuss with each other where things are going and where things are laid out. That is the beauty and use of having seasoned professionals at these negotiations. But at the same time, the truth is that the position is not settled, and other delegations can make hay with

⁶See 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).

⁷See 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).

that where they will. The best course of action, obviously, is to have a seasoned leader pushing those positions into place at the interagency domestically. Thank you.

Senator FISCHER. Can you tell me, do you know if other nations have their teams together already?

Ambassador KOH. Madam, the other teams do not have the same spectrum regulatory structure that the United States does. As every young telecommunications attorney knows, allocation of spectrum policy is divided between the NTIA and the FCC with Federal spectrum responsibility at the NTIA, and private spectrum responsibility at the FCC.

The two have always been a bit at odds with each other given the value of spectrum resources. As such, I did point out in my testimony that the discussion between the two entities can be fierce, must occur among equals in order to be able to bring the best positions to light, and when the resolution does come, and it does, because the alternative is worse, when it does come, our positions are stronger and more resilient as a result.

Senator FISCHER. As we look at the priorities of Federal agencies, the head of WRC-27, we know that national security space operations rely on that 7.4 to 8.4 GHz band, and that is why that band, as was mentioned, it was specifically excluded from the FCC's current Auction Authority in statute last year.

Ambassador Koh, can you tell me, has the United States ever gone into a World Radiocommunication Conference and advocated for a position that directly contradicts its own domestic law, yes or no?

Ambassador KOH. No, ma'am.

Senator FISCHER. And what would that mean for American leadership globally and our credibility if that would happen?

Ambassador KOH. I think that that is self-explanatory, madam, that it would undermine our own positions.

Senator FISCHER. Thank you. Dr. Lewis, when DOD's spectrum needs, such as protecting certain radar bands or high-priority military satellite communications, when they diverge from the global harmonization proposals, how should the delegation, how should our delegation balance those tensions while at the conference?

Dr. LEWIS. Thank you for the question. So far, the U.S. has been successful in defending its national allocations, and in some ways, IT rules permit that in a way. We are such a big country, we can get away with it. There is a first-mover disadvantage for the U.S., which is we develop spectrum applications for government purposes, for defense decades before other countries, and their positions now diverge. One of the options that has come up in the past is the potential for spectrum sharing. This is something that every administration, since the Bush administration, has been working on, and every year it gets a little better, so perhaps there is a technical solution. But at the moment, it is in our interest to defend the national allocations from—and China will try to exploit that. It is an obvious target. But we can probably successfully defend it.

Senator FISCHER. I hope so. That day has not come yet, to have that technology present for the spectrum sharing. I support that, and I support as we continue to look at research and be able to accomplish that goal. Thank you.

Senator Luján, you are recognized.

Senator LUJÁN. Thank you, Chair Fischer. Now, this question will be for each of the witnesses. In your testimony, you all clearly laid out the important role the United States played in previous world radio conferences, a treaty-level international forum every four years. However, President Trump just this past January, through a recent memorandum, announced that the United States is withdrawing from a long list of international organizations, conventions, and treaties that are, and I quote, "Contrary to the interests of the United States".

This is in addition to the United States withdrawing from the World Health Organization at the start of this administration. My concern is this, that the administration will not have the discipline necessary to be impactful in Shanghai in WRC-27. So the question I have for each of you, Ambassador Koh, what are the consequences if the United States withdraws from the World Radio Conference?

Ambassador KOH. Thank you, Senator Luján, for the question. This is a concern that I have long tracked. International coordination on spectrum and satellite operations are not really a policy choice, it is a science. Spectrum does not respect borders and satellite operations impact large swaths of the Earth as they orbit. Without international coordination, wireless networks, and satellite systems, aviation communications, weather satellites, they cannot work. So we really do not have a choice. Our national security systems depend heavily on our ability to maintain interference-free operations.

Senator LUJÁN. Appreciate that. Ambassador Lang?

Ambassador LANG. Thank you for the question, Senator. I think it is an important one. And I fully agree with everything that Ambassador Koh has said, and would also add that we would be ceding the field to China and that it would be able to take advantage of that to promote its approaches to spectrum allocation, which would give its firms a clear advantage in markets around the world and provide them enormous economies of scale in production.

Senator LUJÁN. Thank you, sir.

Dr. Lewis.

Dr. LEWIS. Well, to be a little contrarian, there was some deadwood in the international system that probably needed to be cleared out. And certainly there was bloat, particularly at the U.N. I actually got a phone call last week about an agreement that I negotiated is now on the chopping block. So it is a bit shocking when you see one of your own children at risk, but it does make some sense. We have 18 months to work this out. Over the long term, nations will vote their national interests.

And if we play our cards right, most countries will realize their national interest does not lie with China. So that is a shot, that is a difficult question, but I think we can do it. And I conclude by saying America First does not necessarily mean America alone. So you are right to emphasize the importance of partners in these negotiations.

Senator LUJÁN. So, Dr. Lewis, if I can read into your response, it is not a good idea that the United States would withdraw from WRC-27?

Dr. LEWIS. Definitely not a good idea with that.

Senator LUJÁN. Appreciate that. Mr. Calabrese?

Mr. CALABRESE. Yes, I mean, on the one hand, there is no question that multilateral organizations like the WRC and the ITU can be very frustrating. At the same time, we should be very motivated to engage here because, you know, as was said, spectrum knows no borders. Global harmonization of spectrum policy is in the interest of the U.S. probably more than any other country because of economies of scale for some of our largest industries.

As I mentioned, because 80 percent of the agenda is concerning satellite issues, we are leading the world on that, and the rest of the world is just, they are just lying in wait to some degree to trip us up, to slow us down while they subsidize their national champions in the sky who are running so many years behind us. So we have to be there, at a minimum, to defend ourselves, and hopefully to push things further ahead.

Senator LUJÁN. Mr. Lang, why is it important for the White House to nominate a WRC Ambassador early in the process?

Ambassador LANG. I am sorry for?

Senator LUJÁN. Yes.

Ambassador LANG. Yes, we need leadership in place to oversee the development of our positions, to make sure that we have unity in our delegation and that we are able, I think most importantly, to begin diplomatic engagement around the world to build global support for our priorities.

Senator LUJÁN. And Ambassador Koh, same question?

Ambassador KOH. I absolutely agree with Ambassador Lang on the need to bring somebody in early. There is something about having that leader that actually forces the delegation to start paying attention and start realizing that things are nearing the end, and they need to actually compromise. This person also does need to be a little bit practiced at cracking heads.

Senator LUJÁN. I appreciate that. Ambassador Koh, can you provide your top recommendation for this administration for WRC-27?

Ambassador KOH. I think it is all in prepare early, especially because this is in Shanghai. We need to be logistically ready. We need to be diplomatically ready.

Senator LUJÁN. Appreciate that, Ambassador Lang.

Ambassador LANG. Yes, I think accelerating our preparation process, making sure that we have our positions in place, and unified support for them, as quickly as we can, and then begin that diplomatic engagement.

Senator LUJÁN. Dr. Lewis.

Dr. LEWIS. Same thing, early preparation, early appointment of a strong leader.

Senator LUJÁN. Mr. Calabrese.

Mr. CALABRESE. Yes, very much the same. Early positions, especially into the regional process, which proved to be very important last time, whether we had support from our, you know, ITU Region 2 or not. And even if this Ambassadorial position is 6 months, the person should be on, like I said, at least 12 to 18 months ahead,

driving not only preparations, but establishing these relationships, you know, in the Americas and then globally.

Senator LUJÁN. Appreciate that. And Chair Fischer, thank you for your thoughtfulness in calling this hearing. I look forward to the follow up from this as well going forward.

Thank you for your time, to everybody.

Senator FISCHER. Thank you, Senator Luján. As we wait for more committee—oh, Senator Blackburn is coming in. Senator, would you like us to ask a question before you sit? Are you ready to go?

Senator BLACKBURN. Yes.

Senator FISCHER. OK. OK, welcome, Senator Blackburn, you are recognized.

**STATEMENT OF HON. MARSHA BLACKBURN,
U.S. SENATOR FROM TENNESSEE**

Senator BLACKBURN. Thank you, Madam Chairman. And as Ms. Koh, and many on this panel know, I am never short on questions on this topic because I do think that it is vitally important.

Ambassador Lang, I want to come to you first because I think you know, I was very concerned last time around, Ms. Gomez's departure and just kind of throwing sticks to the wind, if you will, as we were getting ready for the WRC. And I thought it was bad timing and a very poor choice and left our Nation in a disadvantaged position. So you stepped in, took over, had that short runway.

So I want you to talk for a moment about your experience and the challenges that you had by having to truncate that preparation for the WRC? And then follow that with why it is important to go in ready for the fight?

Ambassador LANG. Thank you very much for the question. And thank you for your support for this process and for your attention to this important topic. I really do appreciate that. And it was certainly a challenge stepping in after Anna Gomez had to step down after her confirmation as FCC Commissioner. And my recommendations for 2027 reflect some of the challenges that we had during that experience.

We weren't able to develop our positions for 2023 as quickly as I would have liked. I was, unfortunately, unable to fully participate in a robust series of diplomatic engagements in the months preceding the conference, because I was going to be away—

Senator BLACKBURN. OK, I want to jump in right there. Ms. Koh, I want to ask you to step in. You talked in your response to the Chairwoman earlier about seasoned negotiators. So I want you to weigh in on what he just said about that preparation and that continuum that is so necessary for that?

Ambassador KOH. Thank you, Senator Blackburn, for the question. It was a tough situation that Ambassador Lang was put into, but he had been aware and had been involved in the discussions beforehand. It is not the same as being first. This by no means was the ideal situation for the leader of the WRC delegation for the United States.

Fortunately for us, the State Department does offer a seasoned rank—a seasoned bench of negotiators and people who are willing

and able to step into those shoes, but they do have to be activated with the right leadership, with the political support above, and with really good staff beneath to be able to use and deploy within the delegation.

Senator BLACKBURN. And then Ambassador Lang, coming back to you, what kind of challenge did having to do this truncated process actually put you in as you got to the WRC?

Ambassador LANG. Well, I think one of the greatest challenges was, I had not been able to attend many of the preparatory meetings leading up to the conference, especially the final year before the conference. There is a series of regional meetings all around the world to prepare positions regionally, like our CITELE process in the Americas. I was not able to attend those series of meetings, and unfortunately hadn't fully developed all the relationships that I would have liked to have had leading into the conference. I had a shorter runway and needed to do a lot of that on the ground.

Senator BLACKBURN. So it is important to realize this is not a one-and-done prep meeting, this is something that depends on the U.S. having a solidified front, a strong position, and a well-seasoned team who realizes that it is imperative we put our interests first, correct?

Ambassador LANG. That is correct.

Senator BLACKBURN. Thank you. Dr. Lewis, I want to come to you. We have got China as the host for this and I think that this is something that is going to present some unique situations and problems. We all know that China is, primarily, a surveillance state, and they make—they do not try to hide that. And I have supported the development of technology through the Open Technology Fund for years. I think this is important. I think Ms. Koh probably remembers those days in the House when I fought furiously to be certain that we were doing this.

And of course, we have seen that pay dividends as we have looked at the situation in Iran. But as we look at the situation in China with the surveillance state mentality that we have, give a brief assessment of what you think the security threat is to our delegation as they go into the WRC?

Dr. LEWIS. Thank you, Senator. The last time I was in China, I was a little annoyed because they weren't following me anymore. And I thought, gee, I must not be important. And when I got back, a friend told me, they are not following you because they do not need to. Their surveillance is ubiquitous. It is digital, it is electronic. So the environment you go into in Shanghai will be one of complete coverage by the Chinese State.

And I think a lot of the smaller nations may have trouble understanding that. One of the technologies that is most interesting to me and that rises objections is, you do not need to cooperate for them to tap your phone. You can have software implanted on your phone, even if it is not on, that would let it become a communications device for the Chinese State.

So this is, as my colleagues have said, a serious obstacle for the U.S. moving forward because China is probably a peer when it comes to communications intelligence now, a peer with the U.S.

Senator BLACKBURN. OK, so how do we mitigate that?

Dr. LEWIS. One way is to—thank you, one way is to ensure that all the delegations, certainly the friendly delegations, know that you can't overestimate how much people are aware of this threat. And I do that routinely. We live with it. It is not clear that every delegation feels that way. There are some technologies, as you have said, that allow you to communicate more securely, not necessarily the mass market technologies, but certainly some of the things that you can buy on the market, and encouraging people early to think about that level of security.

Finally, there will need to be an attention to how you meet, where you meet, who you meet with to take this way. So there are steps we can take to manage the risk. But again, and I think one of the themes of this hearing is it needs to be done early so that people are prepared.

Senator BLACKBURN. Great. Thank you.

Thank you, Madam Chairman, for letting me go way, way over.

Senator FISCHER. We are happy you are here, Senator. Thank you.

I think we can begin a second round of questions, and when we are joined by members, we will slot them in. I understand there are some on their way.

Ambassador Lang, I have a question for you. Moving forward, what principles should guide U.S. policy when commercial demand for spectrum intersects with bands that support critical national security or scientific missions? How do you balance that out? Because the United States, obviously, is advancing very quickly in technology. We have these bands set up already. How do you deal with that at an international conference?

Ambassador LANG. Well, thank you for the question. I do not think there is an easy answer. It is always a tradeoff. I would note that I believe that having spectrum available for commercial use is also important to our national security, that we need a strong innovative—a strong environment for technical innovation in the United States that is fueled by spectrum in order to be competitive globally, and that it contributes directly to our national security.

Senator FISCHER. Thank you. And Ambassador Koh, at past conferences, you mentioned negotiations, and tradeoffs, and the importance of firming up the position within the United States' delegation before we get there. How does that support our national security or scientific missions when you have those competing interests? How do you rate the tradeoffs?

Ambassador KOH. Rating the tradeoffs is a very difficult question. And thank you for raising this important topic, Senator. One of the things that I would constantly say during my time as head of delegation was that we have to do it all. It is not an option to do one or the other, but we have to figure out how to have both important weather satellites and weather-sensing services in addition to allocating spectrum for advanced telecommunications. The possibilities are there when we look at technical studies that allow us to understand the parameters to which these services can operate.

Spectrum has always been shared. It has always been shared, and it is going to continue to be a shared resource. The problem is, do you get everything that you want out of your service because

you were able to get all of the technical resources—technical parameters that you would like, or will you be able to operate part of your service?

There has to be an acceptance of limitations regardless, because there are different competing priorities. That is why the technical studies are not the end of it. It is also the political priorities and the public policy priorities that the administration brings to bear, and that is why seasoned leadership, practiced political eye is necessary in these discussions. Thank you.

Senator FISCHER. Thank you very much.

Senator Luján, is it OK if we call on Senator Rosen?

Senator LUJÁN. OK.

Senator FISCHER. Thank you. Senator Rosen, you are recognized.

**STATEMENT OF HON. JACKY ROSEN,
U.S. SENATOR FROM NEVADA**

Senator ROSEN. Well, thank you, Chair Fischer, Ranking Member Luján. This is such an important issue, it is fundamental to our national security and to our leadership in technology as a whole; and I want to thank all of the witnesses for being here, again for having this hearing.

You know, because advocating for harmonized global spectrum standards is essential for protecting American investments, protecting investments specifically in trusted technology like Wi-Fi, which our adversaries, we know, seek to undermine us. So I am going to ask each of you, I will start with Ambassador Koh first, about the risk of failure here, the risk of failure.

So think about this for a second. I want you to think about some context, the upcoming World Radio Conference. What are the stakes? What happens if we, the United States, fails to protect the 6 GHz band and other key bands we are invested in? And so what would that mean for American leadership in telecom? Because we want to be the world leader.

So Ambassador Koh, we will start with you. And I only have 5 minutes, so you can each maybe—I know it is a very long answer, but maybe you can give some perspective.

Ambassador KOH. Thank you, Senator, and that is an important question, particularly as it is one of the biggest issues that faces WRC-27. Obviously, the economic impacts will be significant as we have become quite dependent and interested—and committed to the use of Wi-Fi and expanding the use of Wi-Fi in the United States, and have put our regulatory efforts behind creating that ecosystem. In addition, I guess I might leave it to others to speak to the reservation process as well.

Senator ROSEN. OK.

Ambassador KOH. Because I do not want to take up all of the time, but happy to come back to you at another point.

Senator ROSEN. Thank you. The stakes are really high, we have to succeed, so just wanted to start off a little bit on that, and give a top line.

Ambassador LANG. Well, thank you, Senator. I would emphasize that this is an important arena for competition with China. That China is aggressively promoting its approach to technology in the ITU and the WRC and wants to see a global harmonization that

reflects its own domestic allocations. That would give its companies a huge advantage in the international marketplace, one that would set us back in terms of our national security, our own innovation environment, our economic prosperity. And I actually think it is a potential threat to our democratic values as well.

Senator ROSEN. Thank you, Dr. Lewis.

Dr. LEWIS. Thank you, Senator. We have learned from the experience in Ukraine, in Venezuela, and now Iran, of the importance of spectrum. And one of the interesting things to me is, first, electronic warfare has come out of the closet and is now crucial. Electronic warfare is electromagnetic spectrum.

Second, what we have seen is a blend of commercial and military technologies, and that has been one of the sources of U.S. success. The Chinese know that, the Russians know that, and so they will be trying to exploit that. The outcome of the work will immediately affect our national security and our economic competitiveness. So it is a much more high-profile event than might be judged from its press appearances.

Senator ROSEN. Yes.

Mr. CALABRESE. Yes, Senator, the stakes are high on the issue that you mentioned. We know that China will be making an effort to get more countries to opt for an allocation of IMT, which precludes Wi-Fi in the upper 6 GHz band. This is one of those issues I mentioned in my oral statement that are not on the formal agenda, it is not a formal item, but should be a priority for the U.S., which is to work against China's effort to get more and more countries to jump aboard those footnotes to designate IMT in the upper six, because on one hand, they want to undermine U.S. Wi-Fi, which we lead the world by far in equipment, enterprise equipment and chips, and at the same time, they are the only major economy that has not even adopted the lower 6 for Wi-Fi.

Senator ROSEN. Let me get a last quick question in to you then, Mr. Calabrese. The United States develops its WRC positions through multiagency process, FCC, NTIA, State Department, other Federal agency, industry, other stakeholders. How well is the current interagency process functioning as the U.S. prepares for WRC-27, and what can we do to be sure agencies—to help, be sure that they are coordinating effectively?

Mr. CALABRESE. Yes, we have a greater challenge because we have this dual-track consultative process, as you mentioned. I mean, it seems to be going well, except for the fact that there are these non-consensus positions on things that do not make sense to me to be non-consensus.

You know, as Chairman Fischer mentioned earlier, about 7.4 to 8.4 for IMT, when in fact that was prohibited by the One Big Beautiful Act. Similarly, we need to make it more clear on defending Wi-Fi allocation up to at least 7125.

Senator ROSEN. Mm-hmm.

Mr. CALABRESE. So anyway, the process is going apace, but it needs to accelerate and become unified.

Senator ROSEN. Thank you. Well, if there are things we can do to help, now please let us know. Thank you.

Senator FISCHER. Thank you, Senator Rosen. Hopefully, current statute will be a basis from which the delegation can come together

and achieve that consensus before they attend the conference, so thank you for that.

Senator Moreno, you are recognized.

**STATEMENT OF HON. BERNIE MORENO,
U.S. SENATOR FROM OHIO**

Senator MORENO. Thank you, Madam Chairman.

I will start with you, Dr. Lewis. What are your thoughts on, just generally speaking, getting out of the weeds a little bit, on China and how they are doing with telecommunications infrastructure, spyware, et cetera?

Dr. LEWIS. Thank you for the question. it is an important one. One of the problems we have is that very often we tend to overestimate China's capabilities. When I speak to Chinese friends, I kid them that a grown-up power doesn't need to float a balloon if they are going to do spying, but we also can underestimate their ability to improve rapidly. So for a conference occurring in Shanghai on Chinese networks, owned and controlled by the Chinese Government, the risk is immeasurable.

Senator MORENO. Well, and for example, when you travel to China, would you take your personal cell phone with you, or would you have a different phone that you would use just to go there?

Dr. LEWIS. On one of my trips, the Chinese complained that I never brought my phone, so they gave me a Chinese phone, and that is what I take.

Senator MORENO. Well, my point, if I were traveling to China, or any of my colleagues were traveling to China, would it surprise you that the advice from the Military liaisons is not to bring our government phones, not to bring our personal phones?

Dr. LEWIS. So a friend who works for an intelligence agency thought he would test your theory, this was some years ago, and see how many times his phone was probed between when he got off the airplane and when he got to his hotel. He did not have to do the full test because it was probed four times in the walkway between the plane and the terminal. So any device going to China will be subject to some kind of intrusive activity.

Senator MORENO. And then, shifting to the world that I hold near and dear to my heart, which is the auto industry, a lot of automobiles, people do not realize how much cars have really transitioned into really portable telecommunications devices, connected vehicles, et cetera, with cameras and things like that. What are your thoughts on where these Chinese car manufacturers are doing and why it is so important to keep them out of the U.S. market?

Dr. LEWIS. One indication of what is going on, Senator, is that the Chinese have banned Teslas from military and government installations. That is because as cars become more and more digital, as they become autonomous, as they are loaded with sensors, and many of them have wireless connectivity, the car is now a collection device. The Chinese know that. I am not sure everyone here does.

Senator MORENO. Right. And I am hoping my colleagues on this committee will support my efforts later this month and maybe next month, to make certain that we do not allow the threat of Chinese automobiles to enter the U.S. market for the reasons that you just

stated. And I think you are pretty familiar, I am sure the rest of you are, with what has happened in other markets with Chinese-made automobiles, where the market share has gone from basically zero to 30, 40 percent and climbing. Are you familiar with that? What are your thoughts?

Dr. LEWIS. The Chinese subsidize in a different fashion from the way we would use government subsidies, but it has created rampant competition in China that leads to vicious price cutting and an effort to find global markets. So the term “dumping” occurs. China itself makes enough cars to supply the entire world. You do not need Germany, you do not need Japan, you do not need the U.S. or Korea. And so they have to find a home for those cars to pay off the debts.

Senator MORENO. And this is extraordinarily predatory. And I will start with you, Ambassador Koh. From the conversation you just heard, anything that you would want to add or subtract?

Ambassador KOH. Actually, thank you for the question, Senator. This is exactly what China needs to do. This is not—for the Chinese Government, this is existential, you do need to have a fully functioning economy with significant exports. So this is not going to change. The behavior of the Chinese economy will not change. It is on, I think, the United States and other like-minded countries to be able to contain the economic aggression that is coming from the country.

Senator MORENO. So if you look at our auto industry—I know this is not the topic. I will land the plane, I promise, Chairperson, on bringing this back to the topic at hand. But four American auto companies lost \$60 billion chasing electric vehicle mandates, \$60 billion. That has already made our industry less competitive than the Chinese, who didn’t lose \$60 billion, who actually got massive, probably 2-, 3-, 4-X that subsidies from the government. I guess my question to all of you would be, and where this ties in, is why on earth would we have a conference in China when they are an obvious bad actor? I mean, it would be like the hens having a conference at the wolf’s den. Seems like a really, really bad idea. Thoughts in my last few seconds here?

Dr. LEWIS. You don’t always win, Senator. And this was one where the Chinese, it was exceptionally close, as Steve said. Out of 48 votes, the Chinese got 25. That means they won by one vote, right? So it was very close, and we just didn’t make it.

Senator FISCHER. Thank you, Senator Moreno.

Senator Luján, you are recognized.

Senator LUJÁN. Thank you. And I appreciate that last question from my colleague. I will answer the question. The United States got rolled. This vote happened under President Trump’s first term. Whoever the President was when 2027 happened, this is what happened. I do not mean to point fingers at the current President, Bernie.

But every article that I read about this says that the Chinese conspired with the Rwandans. This is normally a consensus vote by ITU, and you all tell me if I am wrong about this, and at the last minute, the Rwandans withdrew, opened the door for the Chinese to roll in. They got the bid. I would stand by, the United States got rolled, and this is something, colleagues, for us to look for the

next one, to be ready, whoever the President is, so that the United States is not in this posture, in this position again, and I have concerns about that.

Now, there was a question earlier that was a little critical of the previous President. I do not think it was at you, Ambassador Lang, but the question that the Biden administration, that this maybe could have gone better, maybe on the planning side. But let me ask you this. The United States in WRC-23, was the United States able to beat back China's attempt to repurpose the 6 GHz band?

Ambassador LANG. Well, thank you for the question, Senator. I believe that we had important successes in 2023 in preserving the 6 GHz band for unlicensed use.

Senator LUJÁN. What about expanding connectivity? The United States did OK there?

Ambassador LANG. I think we did. I think we had successes both on the unlicensed side with the 6 GHz and also——

Senator LUJÁN. What about unlocking the space economy?

Ambassador LANG. Yes, I think we had some important achievements in 2023 with regard to various satellite communications.

Senator LUJÁN. I think Elon Musk should be thankful to you, and so should Jeff Bezos, because without the work you did, we wouldn't have SpaceX, and we wouldn't have Amazon launching satellites today, because of the great work that you and the United States did in that space.

And last, what about protecting spectrum used for national security? Did you do OK there?

Ambassador LANG. I think we did. We were able to make sure we preserved some critical protections even as we identified additional spectrum for various other telecommunications uses.

Senator LUJÁN. And the proof will be what happens after this one. I hope that the list is longer than the one that I just read coming out of WRC-27. Now, what I will say from the critical nature of that question is planning is important and this should have been done much better under the Biden administration on the planning side.

And I certainly hope that the Trump administration is taking note to all of your testimony today, and also what we learned that could have gone better in preparation of 2023, because to me it just feels like we are lacking a little bit. And I certainly hope that the thoughtfulness again of our Chair, of Senator Fischer, calling this hearing is just a reminder: Hey everybody, time to get to work. Roll up your sleeves and let us get at this as well.

So I very much appreciate the time for the second round of questions.

Senator FISCHER. Thank you, Senator Luján.

If I can close the hearing, unless one of our colleagues tries to get in here under the wire, but if I could just close the hearing and ask each of you, you know, we have talked about this during the hearing, how important it is for the delegation to work together, to work with our allies, to be able to have a strong leader. If we can just go down the panel here and you tell me what we need to see in the background of a strong leader, besides "cracking heads", what we need to see in their background and what you would hope

to see in our delegation that is chosen for this very, very important work? Ambassador?

Ambassador KOH. Thank you, Chairwoman. I would hope to see a willingness to—I think what I would like to see is discretion and a willingness to see past the surface arguments.

Senator FISCHER. Thank you. Ambassador Lang.

Ambassador LANG. Thank you very much for the question. For the head of delegation, I think we need somebody who understands how the telecommunications industry works, and how radio frequency spectrum works, appreciates the important strategic consequences of this event and is a great negotiator. And he or she will need a team that is fully equipped across the U.S. interagency, with strong experts, with good negotiation skills. They will need to be aggressive and persistent in inserting themselves into every conversation of the WRC.

They will also need to be good diplomats. And I think they will also need, as a group, the resources to engage globally on a diplomatic—diplomatically on a global scale. That is going to take significant funding for travel. And then there are other creative tools that we should be thinking about for engagement, things like we have heard suggestions of a spectrum summit hosted in the United States in advance of the conference. I think that would be a great idea.

We should be looking at opportunities like providing training for other delegations' members in advance of the conference. So a strong diplomatic strategy leading up to the conference I think is absolutely critical.

Senator FISCHER. Thank you. Dr. Lewis.

Dr. LEWIS. Thank you, Senator, for your question. Thank you. When you are taught negotiating skills, they always tell you that you are engaged in two simultaneous negotiations, one with the other side and one with the people back home. And so a negotiator will need to have the authority, the discipline, the skill to make sure that the American delegation sticks to consensus positions.

It is exceptionally damaging if other agencies go off the reservation and say things that are contrary. A second part of that is that multilateral negotiations are a different art. You need people who have some knowledge of how multilateral negotiations work that need not be international. I was talking in preparation for this with people that said the skills that you bring to the legislative process, you need a similar set of skills, the ability to sense positions, cut deals, identify things.

So you need basically a negotiator who has both the domestic skills and the international skills. They can be learned. I am less worried about the technical side. We are not technical experts. But the ability to forge that deal, forge that agreement with other countries is essential.

Senator FISCHER. Thank you, Doctor. Mr. Calabrese.

Mr. CALABRESE. The early public identification of a leader with all the experience that Steve—Ambassador Lang outlined, but I would add, who puts a particular focus on building relationships, diplomatic relationships early, starting next month at CITEL with the Americas, you know, with these other countries engaging in their perspective. We were, I think, surprised in some cases last

time around Mexico, Brazil, and others. And China is going to be trying to pull more of those tricks. And so I think very early engagement and relationship building in those places, particularly to anticipate where the Chinese might have backdoor influence.

Senator FISCHER. Thank you very much. I appreciate all of the witnesses for their testimony here today. Thank you.

Senators will have until the close of business on March 24 to submit questions for the record. The witnesses will have until the close of business on April 7 to respond to those questions.

This concludes today's hearing and the Committee stands adjourned.

[Whereupon, at 11:16 a.m., the hearing was adjourned.]

A P P E N D I X

NCTA—THE INTERNET & TELEVISION ASSOCIATION
Washington, DC, March 17, 2026

Hon. TED CRUZ,
Chair,
Committee on Commerce, Science, and
Transportation,
United States Senate.

Hon. DEB FISCHER,
Chair,
Subcommittee on Telecommunications
and Media,
Committee on Commerce, Science, and
Transportation,
United States Senate.

Hon. MARIA CANTWELL,
Ranking Member,
Committee on Commerce, Science, and
Transportation,
United States Senate.

Hon. BEN RAY LUJÁN,
Ranking Member,
Subcommittee on Telecommunications
and Media,
Committee on Commerce, Science, and
Transportation,
United States Senate.

Re: Hearing on U.S. Leadership at the World Radiocommunication Conference 2027
(WRC-27): Strategy and Challenges Ahead of Shanghai

Dear Committee Chair Cruz, Ranking Member Cantwell, Subcommittee Chair
Fischer, Ranking Member Luján, and Members of the Subcommittee:

Decisions made at the World Radiocommunication Conference (WRC) shape the global market for a wide range of communications technologies, from satellite services to Wi-Fi to commercial mobile services. Ensuring that the marketplace remains flexible and open to innovation will require a whole-of-government approach, as well as consistent engagement with both industry and our international partners and allies. In support of that engagement, NCTA recommends that Congress and the Administration (1) prioritize WRC-27 advocacy that reinforces U.S. technological leadership and captures all aspects of our telecommunications marketplace, (2) invest in robust public-and private-sector participation in the WRC-27 preparation process, and (3) work to ensure the conditions necessary for full and secure stakeholder participation in Shanghai.

A well-coordinated campaign to promote U.S. priorities has never been more important. Other nations, particularly the People's Republic of China, are investing significantly in attempts to dominate international standards, proliferate untrustworthy technologies, and lock U.S. companies out of key international markets. Sustained and robust U.S. engagement will help ensure that international spectrum policies reflect principles of open markets, free speech, technical rigor, and innovation-driven growth—not authoritarian values. That engagement should be focused on three pillars.

First, Congress and the Administration should prioritize efforts that maximize our Nation's leadership and competitive advantage, especially with regard to unlicensed and shared spectrum technologies. For decades, Americans have benefited from a spectrum policy framework that encourages innovation, promotes investment, and supports an "all of the above" wireless ecosystem. That environment has helped make shared and unlicensed spectrum critical economic drivers and consistent sources of U.S. wireless leadership and competitive advantage. Much of the technology ecosystem supporting Wi-Fi and related platforms—including chipsets, networking equipment, software, and services—has been developed by American companies and continues to support high-skilled jobs, research, and manufacturing in the United States. Wi-Fi, in turn, supports a large and growing U.S. innovation ecosystem that drives investment, high-skilled employment, and global leadership in networking equipment, semiconductor design, and connectivity services. As NTIA Administrator Arielle Roth put it, when it comes to unlicensed technologies, "[n]o one does it better," than the United States, "and the world knows it."

Second, NCTA recommends that Administration leaders promote sustained participation by U.S. government and private-sector experts to ensure that the conference's decisions are informed by the experience of the world's most dynamic communications ecosystem. NCTA recognizes that WRC preparation is a multi-year process that, when done right, requires significant investments of time and resources. Making that long-term commitment may be particularly challenging when Congress, under the One Big Beautiful Bill Act, has also charged the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA) with strict timeline benchmarks for allocating our Nation's spectrum airwaves. Congress can support this work by stating clearly that investments in WRC preparation support a wide range of priorities for the economy, national security, and innovation.

Third, NCTA urges the Administration to help remove obstacles to broad public- and private-sector participation in Shanghai. The U.S. approach is strengthened by our Nation's commitment to a transparent, collaborative partnership between the public and private sectors. Alongside government experts, participation by American private-sector leaders has consistently advanced technically sound and forward-looking proposals that reflect the cutting edge of technology. Industry partners also help government negotiators fully understand the commercial consequences of each proposal and serve as force multipliers in formal negotiations and informal engagements around the world. A significant American presence at preparatory events and on the ground at WRC-27 is essential.

Without careful planning, the location of the conference in Shanghai could deter some stakeholders from undertaking this important work. Potential participants have raised concerns about data security, safety, privacy, and rule-of-law protections. The U.S. government can promote participation by encouraging the International Telecommunication Union to ensure the host country offers protections and conditions consistent with international norms. These should include guarantees of timely entry and exit for registered delegates; access to consular services; secure communications capabilities at the conference site, including reliable encrypted Wi-Fi connectivity; appropriate privacy safeguards in meeting spaces and lodgings; and assurances that all registered participants may freely conduct official conference business consistent with the rules of the conference.

In short, maintaining leadership at WRC-27 will help ensure that international spectrum frameworks continue to support innovation, investment, and the development of advanced communications technologies that benefit consumers and businesses both domestically and around the world.

We thank you for your leadership on this issue and for holding such an important hearing regarding America's continued emphasis of our technology and innovation on the global stage. Our nation faces a critical moment in Shanghai in 2027. Your attention to the upcoming conference will further drive key stakeholder involvement in the process, helping the U.S. meet this pivotal moment in the global competition for technology leadership.

Respectfully,

HON. CORY GARDNER,
President and CEO,

NCTA—The Internet & Television Association

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. TED CRUZ TO
AMBASSADOR (RET.) GRACE KOH

Question 1. The International Telecommunication Union's World Radiocommunication Conference 2027 (WRC-27) will be an inflection point for the technologies that will define the next generation. If the United States fails to lead, China will set many of the global rules for 6G and satellite systems that underpin AI and quantum-related communications. How does the restoration of the FCC's auction authority and the 800 MHz spectrum pipeline included in the Working Families Tax Cut Act help the U.S. delegation leading up to WRC-27?

Answer. The restoration of the FCC's auction authority and the establishment of an 800 MHz spectrum pipeline materially strengthen the United States' position as it prepares for WRC-27, both substantively and diplomatically.

First, restoring the FCC's auction authority reinforces U.S. credibility in international spectrum discussions. At the World Radiocommunication Conference, other administrations assess not only the technical merits of U.S. proposals, but also whether the United States has the ability to implement those policies domestically. The lapse in auction authority during the previous cycle created uncertainty about the United States' capacity to act. Its restoration signals that the United States once

again has a full complement of spectrum policy tools, which strengthens the persuasiveness of U.S. positions in international negotiations.

Second, the 800 MHz pipeline provides a clear and forward-looking framework for identifying spectrum resources to support next-generation technologies. WRC-27 will address spectrum for future mobile networks, including 6G, as well as satellite services that underpin emerging applications in AI and advanced communications. When the United States can point to a defined pipeline of candidate bands for study and potential deployment, it demonstrates seriousness of purpose and provides a concrete foundation for engaging with international partners on harmonized approaches. That clarity is critical, because globally aligned spectrum bands enable economies of scale, reduce deployment costs, and accelerate the development of new technologies.

Third, these measures enhance the United States' ability to engage in early and effective coalition-building. Outcomes at WRCs are shaped well before the conference convenes, through regional organizations and sustained bilateral engagement. A credible domestic spectrum strategy allows the United States to socialize its proposals earlier in the preparatory cycle, build support among like-minded countries, and shape the technical and regulatory options that ultimately come before the conference.

Finally, in the context of strategic competition, these actions position the United States to *lead* with affirmative proposals rather than respond to the initiatives of others. China approaches spectrum policy as part of a coordinated national strategy and works actively to build international support for its preferred approaches. The most effective U.S. response is to present well-developed, technically grounded proposals backed by clear domestic policy direction and implementation capability.

Taken together, restoring auction authority and establishing a robust spectrum pipeline strengthen U.S. credibility, improve the ability to build international consensus, and position the United States to shape the global spectrum framework in a manner that supports American technological leadership, economic competitiveness, and national security interests at WRC-27.

Question 2. In the past, U.S. delegations have sometimes been seen as divided, which weakens our influence, especially when individual delegates or U.S. companies advocate positions that conflict with the U.S. position. How should the delegation leader maintain a unified U.S. position among the delegation, and what should the leader do if a U.S. delegate or company representative works behind the scenes with a foreign delegation to advocate against or undermine the U.S. position?

a. Should such delegates be ejected and sent home? Please explain.

Answer. A unified U.S. position is essential to advancing American interests at the World Radiocommunication Conference (WRC). The delegation leader plays a central role in ensuring that unity is established early, maintained throughout the conference, and enforced when necessary.

First, unity is best achieved through preparation and process. The delegation leader should ensure that all participants, government officials and private-sector advisors alike, are fully aligned with the officially adopted U.S. positions prior to the conference. This includes clear communication of objectives, thorough inter-agency coordination, and reaffirmation that all delegates serve under a single national position, not individual or commercial interests. The longstanding U.S. preparatory process, which incorporates input from industry while ultimately producing consensus government positions, is designed to support precisely this outcome.

Second, the delegation leader must reinforce expectations of conduct. All delegates should understand that participation in the U.S. delegation carries an obligation to advocate for and defend the agreed U.S. position in all formal and informal settings. This includes bilateral discussions, regional group meetings, and behind-the-scenes negotiations that are often decisive at WRCs. Clear guidance at the outset helps ensure consistency in messaging and strategy. At WRC-27, where the strategic stakes are high and global competition is pronounced, the margin for error will be smaller, and even limited deviations from agreed positions can be amplified in ways that undermine U.S. objectives.

If a U.S. delegate or company representative acts contrary to the U.S. position, particularly by coordinating with foreign delegations to undermine it, the delegation leader should respond promptly and proportionately. Initial steps should include direct engagement to understand the circumstances and to reiterate the expectation of alignment with U.S. policy. In many cases, such issues can be resolved through clarification and reinforcement of roles.

However, if the conduct is deliberate and persists, stronger measures are warranted. The integrity and credibility of the U.S. delegation must take precedence. The delegation leader has the authority to limit that individual's participation in

delegation activities, restrict access to internal coordination, or remove them from the delegation entirely.

Ejection should be available as a last resort. In most cases, maintaining unity through clear expectations, active management, and corrective engagement will be sufficient. However, where a delegate's actions materially undermine the U.S. position or negotiating strategy (and especially where those actions involve coordination with foreign interests against U.S. objectives) removal from the delegation is appropriate.

The key principle is that participation in a U.S. delegation is a privilege contingent on advancing the national interest. At WRC-27, where competitive dynamics may magnify the impact of internal divisions, the delegation leader must be prepared to act decisively when that standard is not met.

Question 3. The Working Families Tax Cut Act directs the administration to make 500 MHz of Federal spectrum available for commercial use. How could decisions made at the WRC affect whether these bands are realistically made available for commercial deployment?

a. If the U.S. does not secure favorable mid-band spectrum identifications in the lower 7GHz range and in the 4GHz band at WRC-27, what alternative spectrum bands could support U.S. 6G deployment, and what would be the likely consequences for U.S. national security and economic competitiveness?

Answer. Decisions at WRC-27 could materially affect whether the 500 MHz of Federal spectrum identified pursuant to the Working Families Tax Cut Act is ultimately usable for timely and economically viable commercial deployment. Many of the bands under active study in the United States, particularly in the 4 GHz and lower 7 GHz range, overlap directly with bands under consideration internationally at WRC-27. Favorable outcomes at the conference, including internationally harmonized identifications for IMT with workable technical rules, would significantly improve the likelihood that these bands can be cleared, standardized, and supported by a robust global equipment ecosystem. Conversely, if WRC-27 results in no identification, fragmented regional outcomes, or overly restrictive sharing conditions, the United States could still move forward domestically, but doing so would likely be slower, more costly, and less globally aligned.

With respect to the likelihood of success at WRC-27, it is meaningful but not assured. Many administrations recognize that the 7 GHz range is well suited for 6G, which creates momentum for some form of IMT identification. At the same time, the band supports significant incumbent federal, satellite, and scientific operations, and the outcome will depend on whether ongoing studies demonstrate that those systems can be adequately protected. Accordingly, the United States should approach WRC-27 not as a binary question of whether 7 GHz will be used for next-generation wireless, but as a negotiation over the terms of that use. Specifically, success for the United States will hinge on whether any identification preserves U.S. flexibility, protects critical incumbent missions, and enables commercially viable deployment.

If the United States does not secure favorable mid-band outcomes in the lower 7 GHz and 4 GHz ranges, alternative bands could partially support 6G deployment, including additional spectrum in the 3 GHz range, the Upper C-band, and other mid-band frequencies currently under study by NTIA and the FCC. However, these alternatives would likely be less optimal than globally harmonized allocations in the 4 GHz and 7 GHz ranges. Reliance on a more fragmented mix of bands would increase network deployment costs, complicate equipment development, reduce economies of scale, and delay the pace of innovation.

The consequences for U.S. national security and economic competitiveness would be significant. Spectrum leadership shapes not only commercial wireless performance, but also the security, resilience, and interoperability of critical communications infrastructure. If the United States is unable to align domestic spectrum availability with globally harmonized bands, it risks ceding influence over the development of the 6G ecosystem, including standards, supply chains, and deployment timelines. That, in turn, could place the United States and its allies in a more reactive position, with fewer strategic options and increased dependence on decisions shaped by foreign competitors.

For these reasons, WRC-27 should be viewed as a critical complement to domestic spectrum policy. The Working Families Tax Cut Act establishes an important pipeline, but the ultimate strategic and economic value of that pipeline will depend in significant part on achieving outcomes at WRC-27 that support globally harmonized, commercially viable spectrum for next-generation wireless systems.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. CYNTHIA LUMMIS TO
AMBASSADOR (RET.) GRACE KOH

Question 1. The last ITU-related meeting held in Shanghai saw the U.S. limit its participation to a handful of government representatives with no private sector delegates. The U.S. private sector delegation has historically been one of America's greatest assets at the WRC, providing real-time technical expertise and industry intelligence during negotiations. What specific operational security measures should the U.S. government put in place for WRC-27 in Shanghai, and how will those measures impact private sector and expert participation?

Answer. Robust private sector participation is a hallmark of the American approach to the World Radiocommunication Conference and one of our greatest comparative advantages. U.S. companies and technical experts bring real-time engineering expertise, operational insight, and market-driven perspectives that materially strengthen the quality and credibility of U.S. positions. Preserving that model is essential to U.S. leadership at WRC-27.

At the same time, the operating environment in Shanghai will require a more disciplined and security-conscious approach to participation. The appropriate response is not to limit private sector involvement, but to enable it through a layered set of operational security measures that mitigate risk while preserving effectiveness.

First, all delegation members (government and private sector alike) should receive mandatory, tailored counterintelligence and cybersecurity briefings in advance of travel. These briefings should provide practical guidance on surveillance risks, social engineering, and protection of sensitive technical and business information. Second, the delegation should adopt a "clean device" model, under which participants use government-furnished or pre-approved devices with minimal data and rely on secure, encrypted communications channels designated for conference use. Personal devices should be avoided for official activities.

Third, clear protocols should govern the handling of sensitive or pre-decisional information. This includes disciplined internal coordination, limits on informal discussions of negotiating positions, and appropriate compartmentalization where necessary. The delegation should also establish secure, routine coordination mechanisms—such as daily briefings and designated communication channels—to reduce reliance on ad hoc or unsecured exchanges. Physical security practices, including awareness of surveillance in hotels and meeting spaces and adherence to badge and access controls, should also be emphasized.

These measures will introduce some additional burden for private sector participants, including training requirements, compliance obligations, and potential costs associated with secure devices and communications. In some cases, companies may be more selective about who they send. However, with early planning, clear guidance, and appropriate government support, these impacts can be managed.

Importantly, a well-defined security framework should enable private sector participation. By giving companies and experts the tools and confidence to operate effectively in a higher-risk environment, the United States can preserve the core strength of its delegation. Given the stakes at WRC-27 and the narrower margin for error in Shanghai, the goal should be to protect our people and information while continuing to field the full complement of private sector expertise that has long distinguished and strengthened the American approach.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO
AMBASSADOR (RET.) GRACE KOH

U.S. Expertise and Resources. International coordination is essential to set regulations that permit technological innovation without risk of spectrum interference. These global negotiations are very technical, so we need to make sure that the best engineers are working on these issues.

Yet, instability in employment at the Federal level has led to many staffers with institutional and technical knowledge leaving the Federal workforce. That brain drain sets us at a disadvantage. We need to keep subject-matter experts in the U.S. delegation.

Question 1. Ms. Koh, what should we be doing now as negotiations are ongoing to ensure that the right experts are in those conversations?

Answer. Technical expertise is the foundation of effective participation in these negotiations. The United States has historically had an advantage because of the depth of its engineering talent and the strength of its public-private collaboration. Preserving and strengthening that advantage requires both immediate action ahead of WRC-27 and a longer-term strategy to rebuild and sustain the expert pipeline.

In the near term, as preparations for WRC-27 are already underway, the United States should focus on ensuring that its most experienced experts are fully engaged and supported. That starts with prioritizing retention and continuity within the Federal workforce, particularly at NTIA, the FCC, and other agencies central to spectrum policy, so that institutional knowledge is not lost at a critical moment. It also means fully leveraging the U.S. model by integrating private sector and academic experts early and consistently into the preparatory process. These experts provide real-time technical analysis, strengthen the evidentiary basis for U.S. proposals, and are often instrumental in engaging with international counterparts.

In addition, the United States should intensify its technical preparation now, advancing well-developed positions, conducting rigorous studies, preparing responses to objections, and ensuring alignment across government and industry. The U.S. delegation must arrive in Shanghai with both the expertise and the data needed to lead. Just as importantly, U.S. experts play a central role in building international consensus ahead of the conference; sustained technical engagement with allies and partners will be critical to countering well-organized efforts by competitors like China.

Over the longer term, the United States needs a more durable strategy to cultivate and retain spectrum expertise for future conferences. That includes investing in the Federal workforce through stable funding, competitive career paths, and incentives that allow agencies to attract and retain highly specialized engineers. It also means building a stronger pipeline of talent by expanding fellowship programs, interagency details, and opportunities for early- and mid-career experts to gain experience in international spectrum negotiations.

At the same time, we should continue to strengthen the U.S. multi-stakeholder model by institutionalizing collaboration with industry, academia, and standards bodies, ensuring that expertise is continuously refreshed and integrated into policy-making. Finally, sustained leadership in multilateral forums will require not just technical excellence, but long-term engagement with allies to align spectrum strategies well before formal negotiations begin.

Taken together, these near-term and long-term steps will help ensure that the United States continues to bring the best technical expertise to the table and translate that expertise into leadership at WRC-27 and beyond.

Concerns About China. By a single vote, China won the right to host the WRC in 2027 in Shanghai. That means not only will a Chinese official chair the conference, but it will literally be on their turf. As our witnesses have stated, the U.S. delegation can expect to be surveilled. We also know that China's priorities—particularly its push for international spectrum and satellite rules—are aimed at hindering American leadership.

Combatting China's home-court advantage requires more preparation and coordination than ever before. Given the challenges to negotiating with partners on the ground, we need to build a strong coalition well ahead of the conference.

Question 1. How does hosting the conference in Shanghai give China an advantage on policy outcomes?

Answer. Hosting WRC-27 in Shanghai provides China with both structural and practical advantages that can shape outcomes, particularly at the margins.

At a structural level, the host country plays an important role in setting the tone and tempo of the conference. The conference chair, likely a Chinese official, will exercise influence over how discussions are managed, how consensus is assessed, and how contentious issues are sequenced. While ITU processes are rules-based, these procedural levers can matter in close negotiations, especially where outcomes depend on informal consensus rather than formal votes.

In addition, there is a longstanding norm within international forums of affording a degree of deference to the host country. Delegations are generally reluctant to create the appearance of a disorderly or contentious conference, particularly in the host's capital. As a result, there can be subtle pressure to avoid public disagreements or procedural challenges that might be perceived as undermining the host's stewardship. That dynamic can advantage the host country in shaping how and when difficult issues are resolved.

At a practical level, the location itself creates asymmetries. China will have significantly greater ease in mobilizing a large, well-coordinated delegation with deep bench strength across technical and policy issues. By contrast, other delegations may face logistical, security, and administrative constraints that limit participation or constrain real-time coordination. Concerns about surveillance and operational security may also inhibit open discussion among U.S. and allied delegates, particularly in informal settings where much of the negotiation typically occurs.

Finally, hosting creates opportunities for sustained engagement with other delegations outside formal sessions. The host nation can leverage proximity, access, and diplomatic engagement to reinforce its positions and build support, especially among countries that may already be aligned with its proposals.

Taken together, these factors do not predetermine outcomes, but they do create a meaningful “home-field advantage” that underscores the importance of preparation, coalition-building, and disciplined execution by the United States and its partners.

Question 2. What can the United States and our allies do now to prepare for Shanghai?

Answer. To mitigate these challenges, the United States and its allies should focus on early, sustained, and coordinated preparation across several fronts.

First, coalition-building must begin well in advance of the conference. The United States should deepen engagement with like-minded partners, *e.g.*, Europe, Japan, Korea, Australia, Canada, and key emerging markets, to align on priority bands and technical positions. Regional organizations such as CITEL, CEPT, and APT preparatory processes will be critical venues for building consensus and identifying areas of compromise before arriving in Shanghai.

Second, the United States should lead with strong, technically rigorous proposals. Success at the WRC depends heavily on the credibility of underlying engineering studies. Investing now in ITU-R study group participation, compatibility analyses, and data-driven advocacy will help ensure that U.S. positions are persuasive and resilient in negotiation.

Third, the U.S. delegation should be fully resourced and tightly coordinated. That includes integrating Federal experts with private sector engineers, ensuring continuity across preparatory meetings, and establishing clear lines of authority and messaging discipline within the delegation.

Fourth, the United States and its partners should plan for operational and security challenges associated with the venue. This includes establishing protocols for secure communications, protecting sensitive information, and enabling effective coordination among allies despite a constrained environment.

Fifth, the State Department should engage proactively with ITU leadership and the Radiocommunication Bureau—and rally like-minded countries to do the same—to reinforce shared expectations for a transparent, rules-based conference. Coordinated diplomatic engagement can help ensure that conference procedures are applied consistently, that all delegations have fair access to the process, and that any concerns regarding host-nation conduct are addressed promptly. A unified message from multiple countries will carry greater weight in reinforcing norms of neutrality, openness, and procedural integrity.

Finally, sustained diplomatic engagement more broadly will be essential. Many countries will arrive at WRC-27 without fixed positions. Proactive outreach, both bilaterally and through multilateral forums, can help shape those positions in advance, reducing the likelihood that key decisions are made under pressure in the final days of the conference.

In short, the best way to counter a host-nation advantage is to arrive in Shanghai with a unified coalition, well-developed technical positions, and a disciplined, well-prepared delegation, while also working collectively with allies to ensure that the conference itself is conducted in a fair, transparent, and rules-based manner.

U.S. Candidates for ITU Leadership. Strong leadership at the International Telecommunication Union also puts the United States at an advantage globally. We are fortunate that Doreen Bogdan-Martin, an American, has represented the U.S. as Secretary-General of the ITU since 2022. ITU member states will hold an election for Secretary-General at their plenipotentiary this November. I support Secretary-General Bogdan-Martin’s reelection this fall.

Another American, Jennifer Warren, is nominated to serve on the Radio Regulations Board. We should do what we can to support both candidates because American leadership in these institutions matters.

Question 1. How important is it for Americans to be engaged with and hold positions within the ITU?

Answer. American engagement and leadership within the International Telecommunication Union (ITU) are critically important to advancing U.S. national, economic, and security interests. The ITU plays a central role in shaping the global regulatory framework for spectrum use, satellite operations, and telecommunications standards. These decisions directly affect the competitiveness of U.S. industries and the integrity of our communications infrastructure.

The United States is fortunate to be able to sponsor highly qualified and respected candidates such as Secretary-General Doreen Bogdan-Martin and Jennifer Warren

for service in these roles. Their expertise, credibility, and commitment to transparent, consensus-based processes reflect the best of the U.S. approach to international telecommunications governance.

When Americans hold senior leadership positions within the ITU, it strengthens the United States' ability to promote open, market-oriented, and technically grounded approaches to spectrum management and global connectivity. U.S. leaders help ensure that international decisions support innovation, competition, and secure, interoperable networks—principles that have long underpinned the success of the global communications ecosystem.

At the same time, sustained American leadership helps reinforce alignment with allies and partners and supports effective coalition-building ahead of key negotiations such as the World Radiocommunication Conference. Conversely, any absence of strong, credible leadership in these roles can create opportunities for other actors to exert greater influence over international telecommunications policies, potentially advancing approaches that diverge from the open, market-based principles the United States and its partners support.

For these reasons, continued U.S. engagement and support for qualified American candidates in ITU leadership positions remain essential to maintaining U.S. influence in global telecommunications governance.

Spectrum Leadership. The United States dedicated the 6 gigahertz band to unlicensed wireless—including the next-generation of Wi-Fi—in 2020. Since that time, we have seen faster speeds and the emergence of a whole new wireless ecosystem, driven by companies right here in the U.S. and our allies.

In WRC-23, the U.S. and our allies successfully beat back Chinese attempts to force the whole world to reallocate this band to licensed high-power spectrum, which would benefit Huawei with the largest installed base of equipment in the 6 gigahertz band. But we know that China will make another run at redesignating the 6 gigahertz band for high-power licensed use.

Question 1. What will it mean for U.S. leadership if China is successful in moving the 6 gigahertz band to high-power licensed use?

Answer. If China were successful in redesignating the 6 GHz band for high-power licensed use, it would represent a significant setback for U.S. spectrum leadership, innovation, and global competitiveness. The United States made a deliberate, forward-looking decision in 2020 to dedicate the band to unlicensed use, catalyzing a new generation of Wi-Fi technologies (including Wi-Fi 6E and Wi-Fi 7) and enabling a broad ecosystem of devices, applications, and services. That decision has already produced tangible economic and consumer benefits, *e.g.*, faster speeds, lower latency, and expanded capacity for everything from telework and telehealth to advanced manufacturing and education.

A shift to high-power licensed use would undermine that momentum in several ways. First, it would devalue the investments already made by U.S. companies and innovators in the unlicensed ecosystem. Second, it would tilt the global equipment market toward incumbent vendors with large installed cellular infrastructure bases, particularly Chinese firms such as Huawei, thereby distorting competition and disadvantaging trusted suppliers. Third, it would fragment the global spectrum environment, increasing costs for manufacturers and slowing the development of interoperable technologies.

More broadly, such an outcome would signal a retreat from the U.S.-led model of open, innovation-friendly spectrum policy. The success of the 6 GHz decision has reinforced U.S. credibility with allies and partners; reversing course internationally would weaken that coalition and embolden efforts to shift future bands toward more centralized, state-driven allocation models. In short, preserving the current approach to 6 GHz is essential not only for Wi-Fi leadership, but for maintaining the broader U.S. advantage in wireless innovation.

Question 2. Are there other bands you are concerned about where an adverse decision could hinder the U.S.'s ability to innovate?

Answer. There are several additional bands under consideration for WRC-27 where adverse decisions could meaningfully constrain U.S. innovation and competitiveness if not carefully managed.

First, the upper mid-band spectrum—particularly in the 3.5–4.2 GHz and 4.4–4.9 GHz ranges—will be critical for next-generation wireless services, including 5G evolution and future 6G systems. If international decisions limit flexibility or prioritize uses that diverge from U.S. allocations, it could complicate efforts to make these bands available domestically and reduce economies of scale for U.S. technologies.

Second, the lower 7 GHz band (7.125–8.4 GHz) is emerging as a key area of contention. This band offers a rare opportunity to harmonize spectrum for a mix of licensed and unlicensed uses that could support both advanced mobile networks and

next-generation Wi-Fi. However, competing proposals, particularly those favoring exclusive high-power licensed use, risk foreclosing the balanced approach that has driven U.S. innovation to date.

Third, satellite-related bands, including those considered for non-geostationary orbit (NGSO) systems, will be central to the future of global connectivity. Decisions that impose overly restrictive sharing conditions or favor certain national champions could limit the growth of U.S.-based satellite operators and the broader space economy.

Finally, there are ongoing efforts by some countries to expand regulatory frameworks that could constrain unlicensed use more broadly. Any shift away from flexible, low-barrier access to spectrum would disproportionately impact the innovation ecosystem that has thrived in the United States.

Taken together, these issues underscore the importance of sustained U.S. leadership and coalition-building going into WRC-27. The stakes extend beyond any single band; they will shape whether the global spectrum environment continues to support the open, competitive, and innovation-driven model that has long benefited the United States and its partners.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. TED CRUZ TO
AMBASSADOR (RET.) STEPHAN A. LANG

Question 1. In the past, U.S. delegations have sometimes been seen as divided, which weakens our influence, especially when individual delegates or U.S. companies advocate positions that conflict with the U.S. position. How should the delegation leader maintain a unified U.S. position among the delegation, and what should the leader do if a U.S. delegate or company representative works behind the scenes with a foreign delegation to advocate against or undermine the U.S. position?

a. Should such delegates be ejected and sent home? Please explain.

Answer. Delegation discipline must be a priority for the head of delegation. Clear and frequent communication with delegation members is critical to making sure they fully understand U.S. positions and the expectations for their behavior. I also believe that the United States should not allow representatives of the private sector to be on the U.S. delegation if their employer is actively opposing U.S. positions either directly or as part of another delegation. More generally, a member of the U.S. delegation should be removed from the delegation if their presence begins to undermine U.S. positions.

Question 2. The Working Families Tax Cut Act directs the administration to make 500 MHz of Federal spectrum available for commercial use. How could decisions made at the WRC affect whether these bands are realistically made available for commercial deployment?

a. If the U.S. does not secure favorable mid-band spectrum identifications in the lower 7GHz range and in the 4GHz band at WRC-27, what alternative spectrum bands could support U.S. 6G deployment, and what would be the likely consequences for U.S. national security and economic competitiveness?

Answer. Licensed and unlicensed spectrum are both critical to U.S. national security, economic prosperity, and technological competitiveness. A pipeline of spectrum for 6G in the United States is essential to ensure the United States continues to lead in the deployment of advanced wireless communications. The FCC and NTIA must work together and prioritize identifying this pipeline as quickly as possible so that it can be harmonized internationally. It seems that the 4 GHz and 7 GHz bands are the most likely candidates and focusing on these bands will help take international pressure off the 6 GHz band, which the United States has decided should be used for unlicensed services.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. CYNTHIA LUMMIS TO
AMBASSADOR (RET.) STEPHAN A. LANG

Question. The U.S. two-track consultative process has produced non-consensus positions on several agenda items, including Agenda Item 1.7 concerning spectrum between 7.125 and 8.4 GHz. Meanwhile, the inter-American regional process at CITEL requires finalized U.S. positions well in advance of the conference. In your experience coordinating U.S. international communications policy, what is the realistic deadline by which the FCC-NTIA reconciliation process must be completed for the U.S. to have its positions adopted as regional positions at CITEL?

Answer. I would assess that the U.S. delegation should have its positions finalized no later than spring 2027 to be able to win the support of five additional CITEL

member states, the minimum required support, in time for the final CITEL meeting for approval of Inter-American Proposals. But sooner would be much better.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO
AMBASSADOR (RET.) STEPHAN A. LANG

U.S. Expertise and Resources. International coordination is essential to set regulations that permit technological innovation without risk of spectrum interference. These global negotiations are very technical, so we need to make sure that the best engineers are working on these issues.

Yet, instability in employment at the Federal level has led to many staffers with institutional and technical knowledge leaving the Federal workforce. That brain drain sets us at a disadvantage. We need to keep subject-matter experts in the U.S. delegation.

Question 1. Mr. Lang, how important is it that the U.S. delegation to WRC-27 include technical subject-matter experts?

Answer. It is critical that the U.S. delegation include a sufficient number of technical subject-matter experts. And it is important that those experts be both from Federal agencies and the private sector.

Question 2. Are you worried that U.S. Companies and government agencies will send fewer people because the meeting is in China?

Answer. U.S. companies who plan to send employees to WRC-27 will have additional concerns based on the conference's location in Shanghai. It is therefore important for the State Department working with other government agencies and in coordination with the ITU and likeminded partners to secure commitments from China to address those concerns. U.S. agencies should also prepare to implement unilateral mitigating measures that can help allay the concerns. I believe that U.S. agencies are already working to take these steps.

Concerns About China. By a single vote, China won the right to host the WRC in 2027 in Shanghai. That means not only will a Chinese official chair the conference, but it will literally be on their turf. As our witnesses have stated, the U.S. delegation can expect to be surveilled.

We also know that China's priorities—particularly its push for international spectrum and satellite rules—are aimed at hindering American leadership.

Combatting China's home-court advantage requires even more preparation and coordination than ever before. Given the challenges to negotiating with partners on the ground, we need to build a strong coalition well ahead of the conference.

Question 1. How does hosting the conference in Shanghai give China an advantage on policy outcomes?

Answer. As host of the conference, it is expected that a Chinese official will be the conference chair. Although any chair is expected to oversee the conference in a fair and unbiased manner, he or she has significant influence over some elements of the process.

Question 2. What can the United States and our allies do now to prepare for Shanghai?

Answer. The United States working with allies and ITU leadership needs to convey clear expectations to the Chinese government of unbiased management of the conference proceedings. During the conference itself, U.S. leadership and the entire delegation should be prepared to monitor the process closely and raise any concerns immediately with the chair and ITU leadership together with likeminded partners. In addition, the U.S. government should act quickly to decide what positions it is going to take on key issues and work to advance those positions with like-minded governments well in advance of the conference. Quickly appointing the U.S. head of delegation is also crucial.

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Another American, Jennifer Warren, is nominated to serve on the Radio Regulations Board. We should do what we can to support both candidates because American leadership in these institutions matters.

Question 1. How important is it for Americans to be engaged with and hold positions within the ITU?

Answer. U.S. leadership in the ITU is crucial to U.S. technological competitiveness, economic prosperity, and national security. Secretary General Bogdan Martin has made important progress in increasing the transparency of ITU, improving its fiscal health, and making its management more efficient after eight years of leadership by a Chinese national. She has helped to keep the organization focused on its mandate and core competencies. Another term will help her further deepen these reforms.

The United States has not been represented on the Radio Regulations Board (RRB) for the last eight years. This is a gap that should be corrected as quickly as possible. Jennifer Warren is highly qualified and respected among ITU members. She will make a strong addition to the RRB. We should also prioritize U.S. re-election as a member of the ITU Council.

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Question 1. What will it mean for U.S. leadership if China is successful in moving the 6 gigahertz band to high-power licensed use?

Answer. Licensed and unlicensed spectrum are both critical to U.S. national security, economic prosperity, and technological competitiveness. The United States has allocated the 6GHz band for unlicensed use and advocated for that use at WRC-23. It would be unwise and probably impossible to change that position now. We should instead focus on identifying other bands, such as the 4GHz and 7GHz bands, for licensed use, which will reduce international pressure for licensed use in the 6GHz band as China has advocated. Chinese success in promoting its approach would be harmful to U.S. industry and technological leadership.

Question 2. Are there other bands you are concerned about where an adverse decision could hinder the U.S.'s ability to innovate?

Answer. U.S. agencies are currently working hard to develop U.S. positions and priorities for WRC-27. I believe that process will be successful in identifying the bands that should be top concerns for U.S. interests. But those decisions need to be made quickly. Delay simply sidelines us.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. AMY KLOBUCHAR TO
AMBASSADOR (RET.) STEPHAN A. LANG

Advancing our priorities at the World Radio Conference in 2027 will require both a well-funded and expert-led U.S. delegation and a comprehensive diplomatic strategy to engage our allies and partners.

Question 1. Where is the U.S. government in assembling the team to lead the U.S. delegation at the conference, and what additional resources are needed to ensure the U.S. delegation is ready for the Conference next year?

Answer. I am unable to confirm details of the U.S. government's effort to assemble its leadership team for the WRC-27 delegation. However, it should select and announce the head of delegation as soon as possible and hire or reassign personnel to fill any vacancies on the interagency team soon. They will need resources to make sure there is a sufficient U.S. government presence in the delegation in Shanghai and to fund travel for diplomatic engagement ahead of the conference. I also recommend that the United States host a spectrum summit to engage global partners in advance of the conference. That event should be well resourced to succeed.

Question 2. What should the U.S. diplomatic strategy to prepare for the conference entail?

Answer. The U.S. diplomatic strategy for WRC-27 should include global engagement through our embassies overseas, U.S. delegation leadership participation in all WRC regional preparatory meetings, and bilateral visits by delegation leadership to key partner countries. The United States should also consider hosting a global spectrum summit event in the United States for foreign partners in advance of the WRC.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. TED CRUZ TO
DR. JAMES A. LEWIS

Question 1. Satellite services will be a big part of the agenda at WRC-27, and they are also a major driver of the U.S. space economy. To support the FCC's proposed satellite licensing reforms, this Committee passed the Satellite and Telecommunications (SAT) Streamlining Act, which would modernize and speed up the FCC's process by setting clear deadlines for decisions and providing needed clarity for applicants and commercial satellite investment.

Will these regulatory improvements—that provide a timely and transparent licensing regime at home—give U.S. negotiators stronger standing to push for international rules at WRC that both protect critical satellite spectrum users and allow new satellite services to deploy quickly?

Answer. China wants to present its state-directed, licensed model as the most efficient way to manage 6G and satellite interference. The domestic regulatory improvements proposed in the Satellite and Telecommunications (SAT) Streamlining Act should strengthen the U.S. position at the WRC. Streamlining domestic regulations can create leverage. The SAT Act requires the FCC to define clear technical qualifications and interference standards. U.S. negotiators can present these data-driven standards at WRC to prevent foreign competitors from asserting vague interference concerns as a tool to block U.S. commercial interests.

The SAT Act also directs FCC, NTIA, and State Department to work together to reduce foreign barriers. At WRC-27, where much of the agenda is expected to be space-related, this can strengthen a defense against efforts by competitors to impose restrictive global regulations. It could undercut U.S. arguments on efficiency if the domestic regulatory process is seen as a bottleneck.

Having clear technical standards are invaluable in WRC negotiations. Adversaries can use technical uncertainty as a diplomatic tactic and argue that new U.S. satellite constellations might interfere with their telecom services. By having the FCC codify precise interference criteria, U.S. negotiators gain an advantage. If the FCC sets a clear standard for how a 1,000-satellite constellation must coordinate with existing geostationary (GSO) satellites, other nations (especially “swing voters” in the Global South) are more likely to adopt those same standards.

Question 2. In the past, U.S. delegations have sometimes been seen as divided, which weakens our influence, especially when individual delegates or U.S. companies advocate positions that conflict with the U.S. position. How should the delegation leader maintain a unified U.S. position among the delegation, and what should the leader do if a U.S. delegate or company representative works behind the scenes with a foreign delegation to advocate against or undermine the U.S. position?

a. Should such delegates be ejected and sent home? Please explain.

Answer. While U.S. delegations have sometimes been divided (as in WRC-19) and weakened U.S. influence, there appear to be fewer substantive dispute facing the U.S. for WRC27. Delegation management should be left to the head of del (the WRC Ambassador) and his position can be reinforced by the committee signaling strong support for unity behind the agreed positions before negotiations start. Participating on the WRC delegation is not a right but a privilege and coming on board entail accepting the need to support all agreed U.S. positions or leave. The key is to strengthen and support the U.S. WRC Ambassador.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO
DR. JAMES A. LEWIS

International Cooperation. We have heard from our witnesses that preparation is critical to secure the U.S. policy position going into WRC-27. We know that China and Russia will be prepared. So we must work with our allies to build coalitions to advance shared priorities.

Yet foreign policy decisions from the current administration have distanced us from our allied partners, not brought them closer. And that's putting China at an advantage.

Earlier this month, a Politico poll of our closest allies showed that people in these countries see more trust and dependability with China than the U.S. under President Trump. A majority of respondents from Canada, Germany, France, and the U.K. agreed with the statement that any attempts to get closer to China are because the U.S. has become harder to depend on. And more troubling is that respondents from these nations believe that China has the most advanced technology—not the U.S.

This should be a wake-up call. The U.S. relationship with our allies has soured, and this administration should work to repair them so that we continue the United States' leadership on technology.

Question 1. Mr. Lewis, how are the Trump Administration's foreign policies shaping U.S. preparations for WRC-27?

Answer. The U.S. would not win any popularity contests at the moment, but fortunately, the WRC is a long way off. When it begins, three issues will shape the global reception for the U.S. at the WRC. First, if there is an acceptable outcome to the Iran conflict, which currently is unpopular in many countries, the U.S. position will improve. If the conflict ends in a timely and tolerable manner, its effect will be limited. It is not like Iran has a lot of friends. Second, China remains unpopular because of a lack of trust in many countries in its technology and intentions. While Chinese technology can be as good as western technology and is often cheaper, countries realize that this lower price comes with a cost. Third, we can rely on countries to vote based on self-interest, so if the U.S. can create a compelling case for its spectrum positions that serves both its interests and those of other countries, it should be able to overcome the difficulties created by foreign policy and win support for its proposals.

Concerns About China. By a single vote, China won the right to host the WRC in 2027 in Shanghai. That means not only will a Chinese official chair the conference, but it will literally be on their turf. As our witnesses have stated, the U.S. delegation can expect to be surveilled.

We also know that China's priorities—particularly its push for international spectrum and satellite rules—are aimed at hindering American leadership.

Combatting China's home-court advantage requires even more preparation and coordination than ever before. Given the challenges to negotiating with partners on the ground, we need to build a strong coalition well ahead of the conference.

Question 1. How does hosting the conference in Shanghai give China an advantage on policy outcomes?

Answer. Hosting the WRC in Shanghai gives China an advantage in being able to manage the agenda and to chair meetings. The Chair wields significant influence in structuring the work, appointment of the Chairs of the Working Groups and Sub-Working Groups. These "leads" are critical because they facilitate the consensus required to move an item back up to the Plenary, and eh creation of Ad Hoc Groups. China also gains an intelligence advantage as delegations will be more vulnerable to technical collection and other intelligence activities in Shanghai, given China's pervasive surveillance. Chairing the WRC does not guarantee success for China, but it certainly gives it an edge.

Question 2. What can the United States and our allies do now to prepare for Shanghai?

Answer. The timely adoption by the U.S. government of U.S. positions is crucial. The lens through which the U.S. should look at its positions in the WRC is to come up with positions that addresses both licensed and unlicensed spectrum in ways that will be appealing to potential partners. U.S. spectrum allocations are themselves unique in the amount of spectrum allocated to government use and to unlicensed spectrum. This need not be an insurmountable obstacle. The decisions on allocations in PL 119-21 and NSPM-8 helps address this, and developing a package that combines proposals for both licensed and unlicensed spectrum designed to balance protecting U.S. interests with winning global support would help counter China.

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In WRC-23, the U.S. and our allies successfully beat back Chinese attempts to force the whole world to reallocate this band to licensed high-power spectrum, which would benefit Huawei with the largest installed base of equipment in the 6 gigahertz band. But we know that China will make another run at redesignating the 6 gigahertz band for high-power licensed use.

Question 1. What will it mean for U.S. leadership if China is successful in moving the 6 gigahertz band to high-power licensed use?

Answer. If China is successful in moving the 6 gigahertz band to high-power licensed use, it would gain commercial and technological advantage. By designating this spectrum for 5G and 6G mobile infrastructure, China aims to establish a global standard that favors its state-directed, centralized telecommunications model, which prioritizes licensed cellular infrastructure.

The 6 GHz band contiguous bandwidth allows for higher speeds while maintaining superior propagation characteristics. These frequencies provide a balance of data throughput and signal reliability and are vital for the millisecond-level responsiveness required in robotics and smart manufacturing. A favorable regulatory framework would allow China to shape the hardware and software protocols for autonomous systems.

Question 2. Are there other bands you are concerned about where an adverse decision could hinder the U.S.'s ability to innovate?

Answer. Beyond the 6 GHz band, the 7–8 GHz range (7.125–8.4 GHz) represents the next frontier for 6G leadership. China and other nations want this for high-power licensed mobile services, while the U.S. currently utilizes these frequencies for Federal systems, including military radar and satellite operations. A decision at WRC–27 that favors a global International Mobile Telecommunications (licensed mobile) framework could create a dilemma for the U.S.: either undergo an expensive and disruptive “clearing” of Federal users or risk international isolation where American 6G hardware is incompatible with global markets.

Additionally, the ability to innovate in autonomous systems and “Physical AI” using the mid-band (4.4–4.8 GHz) and higher-frequency (15 GHz) ranges could be affected. These bands are vital for the high-capacity, low-latency links required for smart manufacturing and robotics. U.S. leadership in space-based connectivity could also face a challenge in satellite-to-device bands (694 MHz–2.7 GHz). While American companies like SpaceX currently lead in direct-to-cell technology, adversaries at WRC–27 may push for restrictive interference rules designed to protect geostationary satellites. Such regulations could limit capacity for U.S. Low Earth Orbit (LEO) constellations, hindering the ability of American firms to scale their networks, harm commercial competitiveness and weaken Western telecommunications and defense networks.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. CYNTHIA LUMMIS TO
MICHAEL CALABRESE

1. Agenda Items 1.13 and 1.14 address satellite direct-to-device (D2D) services, with 1.13 proposing to adopt globally the framework the FCC approved in 2024, and 1.14 opening the door to additional globally harmonized Mobile Satellite Service spectrum for less constrained D2D operations. The U.S. has a clear first-mover advantage in D2D technology and related regulatory framework.

Question. What is the United States doing to successfully create a globally harmonized D2D framework?

Answer. The U.S. leads the world by far in D2D deployment and innovation thanks to both forward-looking regulation by the FCC and our world-leading Low Earth Orbit (LEO) satellite industry. The U.S. should certainly support these two Agenda items, both because more ubiquitous connectivity for smartphones is very beneficial for consumers, but also because America’s world-leading LEO satellite operators (Starlink and soon Amazon Leo) will have a natural commercial advantage in global markets as this innovation in ubiquitous connectivity surges.

Agenda Item 1.13 at WRC–27 proposes to adopt globally the same basic Supplemental Communications from Space (SCS) 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. This form of D2D connectivity from satellites to consumer smartphones and other devices is very constrained, since it relies entirely on exclusively licensed cellular bands and limited to areas where the terrestrial licensees are not providing service. One caveat, though, is that the U.S. should oppose efforts by some terrestrial mobile interests to impose an overly strict protection threshold (–6 dBm I/N) that would require huge keep-out zones around national borders. This would virtually exclude D2D service where nations share many borders, such as in Central America, West Africa and East Asia. It could also create big coverage gaps all along our borders with Canada and Mexico.

Agenda Item 1.14 is, in our view, the more consequential item since it would potentially designate more globally-allocated Mobile Satellite Service (MSS) spectrum for D2D services that are unconstrained by the need to protect co-channel terrestrial mobile operations, or to work exclusively with a single mobile carrier. It opens the door to 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 partnership between U.S.-based Globalstar and Apple that enables texting between new iPhones anywhere on Earth is an example. Another more robust example is the Di-

rect to Cell service that SpaceX reportedly has in mind—trademarked Starlink Mobile—initially using the 65 megahertz of mostly global MSS spectrum purchased from EchoStar late last year. Allocating more lower mid-band spectrum for MSS is a pro-innovation and pro-consumer position that the U.S. should prioritize at WRC-27.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO
MICHAEL CALABRESE

International Cooperation. We have heard from our witnesses that preparation is critical to secure the U.S. policy position going into WRC-27. We know that China and Russia will be prepared. So we must work with our allies to build coalitions to advance shared priorities.

Yet foreign policy decisions from the current administration have distanced us from our allied partners, not brought them closer. And that's putting China at an advantage.

Earlier this month, a Politico poll of our closest allies showed that people in these countries see more trust and dependability with China than the U.S. under President Trump. A majority of respondents from Canada, Germany, France, and the U.K. agreed with the statement that any attempts to get closer to China are because the U.S. has become harder to depend on. And more troubling is that respondents from these nations believe that China has the most advanced technology—not the U.S.

This should be a wake-up call. The U.S. relationship with our allies has soured, and this administration should work to repair them so that we continue the United States' leadership on technology.

Question 1. Mr. Calabrese, what are the consequences to U.S. spectrum policy if we do not go into WRC-27 with a strong coalition?

Answer. The ITU process can be as much about larger political alignments and grievances as it is about good telecommunications policy. It is essential that the U.S. build early and solid coalitions in support of our priority agenda items, first within CITEL (Region 2) and then more broadly.

Unfortunately, recent developments are creating a far more daunting diplomatic playing field. The 11 emerging market countries that comprise the BRICS group appear to be coordinating economic and diplomatic efforts more closely than just a few years ago. In addition, the current Administration's widespread imposition of tariffs, the impact of the current U.S./Israeli attacks in the Middle East, as well as both actual and threatened military interventions in 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.

Without strong coalitions, the specific impact on spectrum policy will negatively impact both world-leading U.S. companies and our economy more broadly with respect to Wi-Fi and Low Earth Orbit (LEO) satellites in particular.

Concerning satellite policy, at least 80 percent of the current agenda for WRC-27 will impact LEO satellite operations, a rapidly growing industry that will be dominated by U.S. companies for the foreseeable future. Many nations, including traditional allies, have a perceived self-interest in slowing down American LEO satellite companies such as SpaceX and Amazon LEO. Many nations also continue to prioritize protecting incumbent GSO operators and services that they perceive as threatened by U.S. proposals to increase the relative spectrum access and power levels authorized for the rapidly proliferating constellations in LEO. While the FCC can continue on its current path to modernize satellite rules over U.S. skies, because satellite spectrum is allocated globally—and profitable LEO satellite services often depend on global revenue and performance—the U.S. must make it a priority to achieve globally harmonized changes in satellite policy that accommodate the rapid growth and technological improvements in LEO satellite coverage, capacity and performance.

Concerning Wi-Fi, a technology the U.S. invented and an industry American companies dominate (particularly for enterprise Wi-Fi), China is clearly attempting to undermine larger and harmonized markets for next generation Wi-Fi 6E, 7 and 8. This was evident at WRC-23, where China tried but failed to have the upper 6 GHz band identified globally for IMT—a band the U.S., Canada and most Region 2 nations had already authorized for unlicensed use and Wi-Fi.

At WRC-27, as I explained in my written testimony, Item 1.7 seeks to foreclose the expansion of spectrum access for next generation Wi-Fi in the 7 GHz band immediately above the top of our current unlicensed 6 GHz band. This item would identify the entire 7.125–8.4 GHz frequency range to IMT, which excludes Wi-Fi,

in the Americas and in Asia (Region 3), while making no change in Region 1 (Europe, Middle East and Africa). This change would not only be contrary to U.S. law—the OBBBA last July specifically excluded IMT from 7.4–8.4 GHz for national security reasons—but it also seeks to block countries in Region 2 and 3 from allocating a portion of the 7 GHz band for unlicensed and Wi-Fi use. That is in China’s interest, promoting its dominant (and subsidized) mobile cellular equipment makers, but it harms the U.S.-led Wi-Fi industry. It also potentially harms U.S. consumers if it manages to further fragment future markets for Wi-Fi access points, chips, routers and other inputs.

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Combatting China’s home-court advantage requires even more preparation and coordination than ever before. Given the challenges to negotiating with partners on the ground, we need to build a strong coalition well ahead of the conference.

Question 1. How does hosting the conference in Shanghai give China an advantage on policy outcomes?

Answer. By tradition, the country hosting a WRC serves as its chair. The chair can effectively control the floor, the agenda sequencing, the recognition of delegations to speak, as well as influence what procedural motions succeed and decisions about whether “consensus” has been reached. Since the WRC operates primarily by consensus rather than formal votes, these can amount to substantial and ultimately substantive advantages. Exacerbating all of this, as discussed the hearing, is that surveillance will be endemic both within the conference venue and even in the hotels and social settings.

Question 2. What can the United States and our allies do now to prepare for Shanghai?

Answer. The ITU negotiates an agreement with the host country that governs facilities, security, communications infrastructure, and support services. The U.S. and its allies should agree on restrictions and mitigations—particularly concerning secure communication, surveillance and cybersecurity—that could potentially mitigate expected threats. Early and continued pressure on every aspect of the host-country agreement should be pursued in tandem with our willing allies both in CITEL and more broadly. Finally, as a consensus among the witnesses emphasized, strong delegation leadership should be appointed as soon as possible and begin high-level diplomatic engagement. A U.S.-hosted spectrum summit is one other preparatory measure that should be considered as a means of accelerating U.S. coalition building.

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Question 1. What will it mean for U.S. leadership if China is successful in moving the 6 gigahertz band to high-power licensed use?

Answer. We should expect to China to double down on its ongoing efforts to undermine global harmonization of Wi-Fi in the upper 6 GHz. The U.S., Canada and most of Region 2 has allocated 1,200 megahertz up to 7.125 GHz for unlicensed shared use. But with much of the world undecided about using 6.425 to 7.125 GHz for Wi-Fi, for IMT, or for a combination of the two, WRC-27 is an opportunity for China to lobby more nations to exempt themselves from the current and flexible “MOBILE” allocation decided in 2023. China will push more countries to opt for IMT (which excludes Wi-Fi) via footnote modifications to the international regulations. If more nations jump into IMT footnotes, the outcome will be expanded markets for China’s globally-dominant cellular equipment makers (Huawei and ZTE) and diminished markets for U.S. companies that dominate enterprise Wi-Fi (Cisco, HPE) and chips (Broadcom, Qualcomm).

Question 2. Are there other bands you are concerned about where an adverse decision could hinder the U.S.’s ability to innovate?

Answer. Yes. In addition to Agenda Item 1.7, concerning the Chinese effort to foreclose Wi-Fi from 7 GHz band above 7.125 GHz in Regions 2 and 3 (discussed above), there will be important decisions concerning spectrum access and coexistence rules for LEO satellite operations that are vital to our world-leading and rapidly growing satellite and space industries.

One of these is Agenda Item 1.14, which supports allocating additional Mobile Satellite Service (MSS) spectrum to facilitate satellite direct-to-device services, or D2D, by which LEO 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. Another is Agenda Item 1.3, which 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.

The most important satellite spectrum issue for the U.S. is not even on the formal agenda yet, but it could be and should be. This concerns the ITU rules that govern spectrum sharing between the traditional geostationary satellites (GSOs) and the increasingly prevalent LEO and other non-geostationary satellites (NGSOs). Outdated ITU sharing rules include strict power limits (“equivalent power flux density,” or EPFD, limits) that needlessly reduce LEO satellite power, capacity and operational performance. At its April 30 meeting, the FCC is scheduled to vote on an Order overhauling this antiquated GSO/NGSO sharing framework that will apply only over U.S. skies and not globally. Under a standing WRC agenda item, the results of coexistence studies authorized at WRC–23 could lead to a recommendation to adopt at least incremental changes. 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 that is as similar as possible to the FCC’s new sharing framework.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. AMY KLOBUCHAR TO
MICHAEL CALABRESE

1. While each country maintains the right to govern its own telecommunications policy, they must coordinate with surrounding countries to prevent signal interference at borders. In Minnesota we are very familiar with working with our Canadian neighbors on border issues, and spectrum is no exception.

Question. What has historically been included in agreements the U.S. has had with border countries with respect to telecommunications signals, and why are these agreements so important?

Answer. One purpose of the ITU and the treaty-level decisions made at its quadrennial World Radio Conference is to adopt rules that harmonize spectrum allocations, promote coexistence, and minimize cross-border interference. On top of that baseline, individual nations, such as the U.S. and Canada, can then more readily engage in bilateral consultations that go considerably further in addressing the practical realities of geography, population density, and other factors. The Canada-United States Spectrum Management Arrangement is the principal instrument governing U.S.-Canada spectrum coordination, evolving through ongoing consultations and negotiations since the 1960s.

The agreements typically incorporate the technical parameters needed to minimize cross-border interference, including: power limits and antenna orientation requirements, propagation models and interference calculation methodologies, TV and radio channel allotment plans, satellite earth station coordination, geographic and out of band emission limits for mobile and fixed wireless operators, as well as coordination procedures and timelines to resolve and, if necessary, escalate disputes.

Optimizing coexistence and avoiding harmful interference between U.S. and Canadian operations is important not just for commercial wireless services, but for public safety (*e.g.*, first responders), for national security, and for mutually promoting technological advances and innovation. Minnesota shares a border with Manitoba and Ontario, where U.S./Canada coexistence includes FM radio coordination (both states and provinces have stations near the border), cellular and LTE/5G coordination in multiple bands, public safety interoperability for cross-border emergency response, and agricultural and transportation uses of GPS, MSS and other satellite services.

A recent very important example of the generally collegial and successful coordination between the U.S. and Canada is Wi-Fi: Canada's commercial spectrum regulator (ISED) quickly followed the FCC when it allocated the full 1,200 megahertz of spectrum between 5.925 and 7.125 GHz for unlicensed sharing and Wi-Fi.

