



**U.S. SENATE COMMITTEE ON
COMMERCE, SCIENCE & TRANSPORTATION**
Senator Maria Cantwell, Chair

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Hearing: Spectrum and National Security
Senate Committee on Commerce, Science, and Transportation

March 21, 2024

Opening Statement
[VIDEO](#)

Sen. Cantwell: Good morning, the Commerce, Science, and Transportation Committee will come to order. This morning, we're having a hearing on spectrum and national security. I appreciate the witnesses being here today.

Today's hearing will focus on the interrelationship of these two critical factors—spectrum auction authority and national security—and getting a plan to move forward.

Foreign adversary access to Americans' data is a real and growing concern. We must act to shut the back door to protect Americans.

We are seeing this conversation around applications on our devices. And we need to consider the national security of communication networks themselves.

That network relies on spectrum. Whether it is cell phones in our pockets, connected devices in our homes, critical defense systems in our military, radar and satellites for aviation, weather infrastructure—spectrum—[is an] essential component of a modern communications system.

Spectrum is a finite resource, which means policymakers must ensure and manage it effectively to benefit all Americans. Last year—after 30 years of consensus that auctions were a key part of spectrum management—the FCC's spectrum auction authority expired for the first time.

We want to renew that. We want to look at that today and discuss the outer bands—the 12 GHz and 37 GHz spectrum bands and AWS spectrum—and what we can do to make sure spectrum is made available now to continue to increase capacity, expand the opportunities for new technology in IOT, and leverage the opportunities for areas that aren't covered today to grow our economy of the future.

We must also ensure that spectrum is managed—and our national security colleagues have been in a very active debate with us over these issues – that we are expanding this capacity for innovation. The private sector and the defense sector both need to advance. They need to advance successfully and the United States must be the leader in spectrum management technology and security.

We have seen first-hand the threats our foreign adversaries pose to our domestic telecommunications networks. For example, the presence of unsecure equipment from Huawei and ZTE, and [how that impacts] our key domestic military installations [and] impacted our communities.

Rural providers across the nation, including in my home state, are having to replace unsecure equipment costing billions of dollars.

As development begins on next generation wireless networks, it is critical that the United States takes a unified approach and continue to have the best spectrum policies in the world.

It is clear that spectrum policy has often been the subject of interagency disputes, and that too, with the report that was published by NTIA and DOD on dynamic spectrum sharing moved the discussion to a new level, but more needs to be done.

The domestic approach to spectrum management, built on collaboration, will allow the United States to continue to lead on the international front. The FCC, NTIA, NASA, DOD and others must work together to ensure that we continue to work openly and collectively.

Spectrum management must also embrace innovation—like Open RAN, which we will hear more about today—which will allow telecom providers to use secure, competitive networks.

And innovation must expand spectrum access...with technologies like dynamic spectrum [sharing] to harness opportunities.

Only [through] collaborative spectrum management and technological innovation, I believe, can we create a true pipeline. That's what we really want to do. We want to get what we can get now, and get it in place, and continue to grow the opportunities. A sustainable, responsible vision will allow us to move forward on both our private sector and our DOD missions.

For this to happen we must restore the FCC's spectrum auction authority, and our strategy should include all approaches on unlicensed and licensed spectrum.

Today's hearing is about national security element of that. Clearly, once we address that, hopefully we can get our colleagues to focus on how to make these priorities a reality and create that kind of pipeline that will allow us to deal with some of our necessary issues for us to grow this security for the future.

Questions Segment

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Sen. Cantwell: Thank you very much to all the witnesses. You did a great job setting the stage for the need, the urgent need, for the United States to lead in what will be the communications technology of the future and certainly laid out some of our immediate challenges as it relates to China.

I wanted to start with you, Dr. Ghosh. You mentioned this... well everybody is on one note, very crisply solved the Rip and Replace problem, so thank you for that. And we are trying. We definitely want to try to further our efforts there aggressively. I think it's you, Ms. Ronaldo.

I'm definitely in support of a, what I would call, a technology NATO. The countries that you mentioned, Australia, Japan, India, the United States working collectively on setting the standard for technology.

You can't have government backdoors. You can't have these kinds of violations. And then we say to the rest of the world community, these are the standards by which you buy technology. I think that would be very helpful today, so definitely supportive.

But this notion of continued R&D. Listen, we all wish we could have moved forward a year ago, but not all our colleagues were on board with that, and they were successful at convincing some not to move forward.

But your notion of continued R&D investment, how do we achieve that? How do we achieve what you're talking about as it relates to really catapulting the U.S. into a continued leadership position here?

Dr. Monisha Ghosh: Thank you for that question. So, the National Science Foundation is the lead research agency for the country. And they've done a fabulous job of funding most of the R&D that has happened. In the recent past, we have had other agencies like NTIA also come in with research funding to help the grow this ecosystem of spectrum research, as well as things like ORAN.

I really think when we look at advancing R&D, it shouldn't be off in a silo by itself. The better we integrate academia with industry, with government, to tackle the really important problems facing us today in this world of communications, the more effect that research funding will have.

The SpectrumX, the research center that I'm a part of, which is led by the University of Notre Dame, is an excellent example of one way that we can go about getting this research funding out. It's a nationwide center. It has about 47 and growing number of universities. It's a way to educate the next generation, the workforce needs.

We've heard from a lot of the agencies that the spectrum workforce is aging, and we need the next generation to be educated in all of the various aspects, starting from the engineering and technical to the policy aspects.

Sen. Cantwell: And what do you do, because I want to ask Mr. Johnson a question. So, quickly, what do you do about the national security element? Do we figure out how to get more

collaborative dialogue with people who have national security clearances? How do we solve that problem?

Dr. Monisha Ghosh: I think that – I mean, I have a security clearance, a lot of academics at Notre Dame do. We are involved in DARPA projects, DOD projects. I think getting those connections done better would definitely help take what's happening in the research labs and getting them into the hands of the military, of the science agencies, of even commercial industry.

Sen. Cantwell: Mr. Johnson, your artery analogy is so apt. So, what is it that you think that we need to do now that would help unleash that, even though we've had this, you know, report on dynamic spectrum sharing? Is there some artery unclogging that we could do today?

Clete Johnson: Absolutely. And the great thing is that I think all senators and representatives, all of the leaders of the Article I branch know that we need a pipeline. And that it needs to be concrete. It needs to provide a pipeline of additional commercial spectrum with the screaming need being the wide area coverage, where we're two and a half times behind China.

Sen. Cantwell: And how important is that to get started now?

Clete Johnson. Absolutely crucial. Every day we're falling behind. So, we need a statute to make that happen.

Sen. Cantwell: Thank you.

Questions Part 2

VIDEO

Sen. Cantwell: Did you have a comment on that on this legacy network?

My concern here is that, we're talking about these big issues. I loved the optimization repositioning by Mr. Johnson because that is truly what we're talking about.

We're talking about how do we optimize. And sure, you can be a top down government like China and dictate things, it doesn't mean it's the right thing.

Clearly, interoperability is the key in us figuring that out and then leading on it in an articulation internationally is also the key. It is challenging to go to various places and explain to them why they might have bought something that is not going to be the standard of the future because no one is going to let a government backdoor be the standard of the future. It's unfortunate that has been someone's international policy to try to go and deploy that.

But nonetheless, I do think that collaboration is the key because that's what we have to do to get the implementation of the next generation technology. We have to collaborate. And as you can see, this is a subject where not everybody has wanted to collaborate. So, I'm glad we're getting some collaboration this morning.

But did you want to say anything about this legacy network?

From a geographic perspective of what that does to put people behind? Because I think that's really what my two colleagues from the central West were describing. I think of them as two powerhouses. We have some investors from our state that are trying to build next generation Modular Reactors in Wyoming. And obviously, Boulder is already an epicenter of next generation energy technology.

What does that do to put a region behind if they're sitting there with a legacy technology squarely not dealt with?

Diane Rinaldo: Yeah. So, I would say I worked at the House Intelligence Committee for the authors of the Huawei report. We've been studying this since 2012. And it just confounds me that it's taking this long to see movement in this space. But it just shows how important it is for government to collaborate with industry. And to be able to pass that information.

On my old boss, the one that wrote the report, said he had his first briefing and realized that this needs to get out in the public sector. Hence, they wrote the classified and the unclassified.

Through Open RAN, I would say that there's been a lot of change. There has been a lot of information sharing to the public sector since then. So, we need to make sure that continues going forward. To collaborate, we are all in this together.

Sen. Cantwell: But how far does it put a region behind if it still is one of these regions that has a legacy problem? I mean, are people just going to say, I'm going to go somewhere else? And here we are trying to expand more development and more places. There is a lot of innovation to take place in the United States of America and I personally believe you got to have a few things like airports, but you certainly also have to have networks that are free of any kind of government backdoors.

Diane Rinaldo: Absolutely right. Connectivity is the base of the entire foundation of our economic ecosystem. If we can't get that right, then we struggle having other things fall in place like the airports or transportation networks. So, it's critical that we do this. We do it right.

Sen. Cantwell: So, do you think people are looking at those regions now and raising questions?

Diane Rinaldo: Yes, absolutely.

Closing
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Sen. Cantwell: I think that concludes our hearing for today at least for members who are planning on making it over. So, I want to thank again our witnesses for this illumination about really how much you actually agree on moving forward on some policies and how much these efforts to optimize and integrate and collaborate mean something for our future. So, hopefully we can demonstrate that and do that.