

REMARKS OF FCC COMMISSIONER OLIVIA TRUSTY

Leading the Next Wireless Frontier: *Why America Must Lead the 6G Era*

American Enterprise Institute | From Silicon to Signal: America's First All-AI 6G Wireless Stack Event

July 15, 2026

Good morning. Thank you to Shane Tews for the invitation to join you today. And thank you to AEI for its long history in convening conversations that help shape the future of technology policy.

Since today is July 15th, I thought I'd begin by highlighting three remarkable moments in history that all serendipitously occurred on this date. As a preview, these moments cover eighteenth-century archaeology, a mission to Mars, and a Cold War spaceflight. This may seem like an unlikely place to start with today's discussion on 6G, but please bear with me.

On July 15, 1799, a French soldier was digging fortifications near the Egyptian town of Rosetta, when he struck something hard in the ground. Upon inspection, he had unearthed one of the most consequential artifacts in human history: a stone slab inscribed in three scripts: hieroglyphics, Demotic, and ancient Greek. This stone slab, officially known as the Rosetta Stone, became the key to unlocking the language of an ancient civilization, collapsing millennia of silence into understanding. With this discovery, a new kind of communication became possible – not just between people, but across time itself.

On this same date in 1965, 166 years later, the Mariner 4 spacecraft made its closest approach to Mars over a two-day period, becoming the first human-made object to capture and return close-up images of another planet. The Mariner 4 had traveled 228 days and over 500 million kilometers on its journey to Mars, and in twenty-five minutes of observation, it beamed back 21 photographs that changed everything we thought we knew about our solar system. The images were so novel that space scientists couldn't wait for computers to process them. In fact, they hand-colored the data strips on the spot. Incredibly, humanity looked at another world for the first time.

And on July 15, 1975, the Apollo-Soyuz Test Project launched the first internationally crewed space mission, linking American astronauts and Soviet cosmonauts in orbit at the height of the Cold War. Two nations, divided by ideology and arms, managed to dock their spacecraft in the void of space. It was an act of extraordinary cooperation across extraordinary distance, requiring two independently designed spacecraft to communicate, navigate, and dock as one mission.

So, you have the Rosetta Stone. The Mariner 4. And the Apollo-Soyuz. Three moments, all on this date, separated by centuries. Each expanded the frontier of human knowledge. Each reshaped what people believed was possible.

That is the promise of every great breakthrough in communications and technology: to expand what is possible. The promise of 6G is no different.

I. What is 6G?

Before discussing policy, it is important to ground ourselves in the technology, because 6G is more than just a bigger number than 5G or the next generation of wireless technology. It is a genuinely new architecture and understanding why is essential to advancing sound policymaking and U.S. leadership.

Every generation of cellular technology has brought a qualitative leap, not just a quantitative one.

1G gave us analog voice or the brick phone era.

2G introduced text messaging.

3G put the internet in our pockets and enabled the first smartphones.

4G brought mobile broadband and the cloud, enabling the streaming, app-based, and on-demand digital economy that continues to thrive today.

And 5G, which is still in deployment, has brought faster data transfers, lower latency, and the infrastructure backbone for the Internet of Things.

With 6G, it will deliver faster speeds than 5G. It will also leverage a wide range of spectrum, from new mid-band opportunities to millimeter-wave spectrum and, eventually, terahertz bands capable of supporting extraordinary data rates.

But speed is only part of the story. One of the defining characteristics of 6G is convergence or the integration of multiple capabilities, including communications, computing, sensing, and precise positioning, all into a unified platform.

This convergence is made possible by the native integration of artificial intelligence into 6G network architecture. Importantly, this is not AI bolted on as an afterthought, instead it is built in by design and from the ground up. That distinction fundamentally changes how 6G networks will operate, optimize themselves, and deliver services.

What does that mean in practice? It means networks can both transmit data and understand the physical environment around them. This kind of capability, referred to as integrated sensing and communications, will allow 6G networks carrying data and communications to detect objects, measure distances, track movements, and provide critical situational awareness without relying on separate radar or sensor systems.

6G is also expected to enable holographic communications as well as sophisticated digital twins that today's networks cannot efficiently support. And beyond blurring the boundary between the physical and digital worlds, 6G is expected to support the seamless integration of terrestrial and non-terrestrial networks providing near-global broadband coverage and so much more.

II. Why 6G Matters: The Economic and National Security Stakes

At the FCC, we spend a lot of time discussing connectivity. Broadband access. Coverage maps. Deployment speeds. And the last mile. All of that is important. But 6G opens a new conversation.

That conversation is about defining the platform on which virtually every aspect of the global economy will run in the future.

It is against that backdrop that U.S. leadership in 6G is a matter of both our economic and national security.

Let me start with the economic case.

More connectivity is not an abstract good. Rather, it is a direct driver of human welfare.

Because network convergence will connect sensors, instruments, and AI systems across distances and disciplines, 6G promises to make us more productive, drive leadership in critical technologies, and advance innovation throughout the economy.

We'll see examples of this across a variety of sectors, including healthcare. 6G networks will help support remote surgeries performed by robotic systems guided by surgeons thousands of miles away, or health monitoring that is continuous and predictive rather than episodic. 6G networks will also enable safer transportation by allowing autonomous vehicles and air taxis to coordinate through networks that can sense and respond in milliseconds. On top of these advances, 6G networks will transform disaster response by giving situational awareness systems the ability to map a flood zone or a wildfire in real time, coordinate with first responders, and model outcomes before they occur. The possibilities are potentially endless.

Now turning to national security. As former staff on the Senate Armed Services Committee, I see 6G as a dual-use technology for commerce and defense. In today's threat environment, communications infrastructure is no longer just support for military operations; *it is* military operations. Who controls the network controls the battlefield. And who controls the standards, controls who can access the network at all.

For our warfighters, 6G networks will dramatically enhance situational awareness on the battlefield and provide faster decision cycles at every level of command. 6G will support more resilient communications in contested environments where adversaries are actively plotting to jam, spoof, or destroy our networks. And 6G will foster autonomous coordination between manned and unmanned aerial systems. Indeed, the ability to sense the environment, transmit intelligence, and act – all in a single, integrated network will maximize our lethality and bolster every dimension of our national defense.

This brings me to the policy of 6G and what we must get right for the United States to lead.

III. What We Must Get Right: Spectrum, Security, and Standards

At present, 6G standards are still under development. The first major deployments are expected around 2030, though trial launches may come earlier. That timeline means we are in the window that matters most – the window where the foundational decisions are being made.

I offer the following three priorities that will determine whether America leads in 6G: spectrum, security, and standards.

On spectrum: 6G needs more of it, at different frequencies. Mid-band spectrum remains the workhorse of modern wireless networks. But 6G will also rely on millimeter-wave spectrum for ultra-high-capacity links in dense urban environments and terahertz bands for the most demanding applications. Getting the spectrum equation right – meaning, getting the right frequencies into the right hands at the right time – is one of the most consequential things policymakers can do.

On security: 6G networks will carry the data traffic of our economy, our government, and our military. This includes the most safety- and mission-critical applications we have. Trusted, secure, and verifiable network components must be the foundation. The supply chain matters. The vendors matter. And the standards bodies where the security requirements are set matter enormously.

On standards: The standards for 6G are being written right now, with many technical specifications about network architecture still open for debate. America's role in writing these standards will determine whether this technology serves our values and our national interests – or someone else's.

China has been among the most active participants in international standards bodies, working methodically to shape the architecture of future networks in ways that serve its interests. Because leadership in standards can readily translate into leadership in intellectual property, market adoption, and long-term economic competitiveness, U.S. efforts should be focused on maintaining global interoperability for the mobile ecosystem where it matters most, while preserving the flexibility to foster continuous and rapid innovation.

The good news is that the window for shaping 6G standards is still open, but it is not infinite. Decisions made in the next two to three years will be extraordinarily difficult to reverse. We should bear in mind that every time we do not act with clarity and purpose, it is an opportunity for our global competitors to advance their standing in this area.

IV. What the U.S. Government and the FCC Are Doing

So, what are we doing to stay ahead? Let me give you a concrete accounting.

President Trump has made 6G a national priority. During his first year back in office, President Trump issued a Presidential Memorandum directing NTIA to immediately begin studying ways to free portions of the 7 GHz band for full-power commercial 6G use, while also commencing studies of additional frequencies in the 2 and 4 GHz bands. This Administration has been clear: winning the 6G race is an economic and national security imperative, and the United States intends to lead.

At the FCC, under Chairman Carr's leadership, the Commission is executing on this imperative with urgency. A week from today, the Commission will vote on rules to auction 160 megahertz of Upper C-Band spectrum – prime mid-band frequencies. This spectrum, combined with Lower C-Band spectrum, will create a contiguous block of 440 megahertz of mid-band spectrum for 5G, 6G, and future services.

The Upper C-Band auction will follow a highly successful auction of AWS-3 spectrum that concluded last month. AWS-3 spectrum is adding more coverage and capacity for wireless services across the country, helping to build a powerful foundation for America's wireless future.

In addition to making more spectrum available, the Commission has intensified its efforts to strengthen network security. Among other things, the Commission has adopted rules to enhance the cybersecurity and resilience of subsea cables and establish new processes to restore trust and integrity in telecommunications certification bodies. We have also focused on adding more untrusted network components to the Covered List in coordination with national security agencies to eliminate potential threats from our networks. These efforts will improve our ability to stay ahead of increasingly persistent and sophisticated threat actors throughout the communications ecosystem.

The FCC is also engaging internationally in standards-setting bodies and in regional preparatory meetings at the International Telecommunication Union, in the long run-up to the World Radiocommunication Conference next year. This is where key spectrum decisions will be made that will inform the future of 6G. WRC-27 is a standards battleground, and the strength of America's position going in will determine how much influence we have coming out.

Beyond spectrum, security, and standards, the Commission is streamlining and modernizing permitting processes, because spectrum is only as valuable as the infrastructure we can build with it. Tower siting, antenna placement, and environmental reviews are the difference between a spectrum license and an actual network. Speed matters here, too.

We are also actively boosting the space economy – a central part of the 6G story. As I previously mentioned, 6G is being designed with non-terrestrial networks as core components. Satellites, high-altitude platforms, and terrestrial infrastructure will work together in an integrated system. The Commission’s work to license spectrum and provide regulatory certainty in support of direct-to-device services represents just the beginning of a future where there is seamless connectivity between ground and space-based networks. At the same time, our work to cut satellite licensing backlogs and develop a more efficient licensing application process will further modernize our approach to the space economy and clear the way for innovation. This is the right direction.

And across the federal government, policymakers are working to ensure that AI governance frameworks support innovation and regulatory certainty, rather than allowing a patchwork of fifty state-level approaches to create a fragmented, unpredictable regulatory environment that chills investment and undermines our ability to build AI-native networks at scale.

V. Restoring American Leadership in the 6G Era

What’s clear is that 6G will be the foundation to America’s long-term economic and technological competitiveness and national security. It is the platform on which AI, robotics, autonomous systems, and a generation of industries we haven’t imagined yet will be built.

But American leadership in 6G is not guaranteed.

Global competitors are not waiting. In fact, they are embedding 6G into their national strategies, investing in university research, defense applications, commercial pilots, and more. We cannot afford to underestimate the seriousness with which other countries are pursuing leadership in the technologies that will shape the future of our national resilience and security.

Leadership in 6G is about being the first to deploy and influencing the standards that govern how these networks are built, secured, and managed globally. It is about sustained investment, from

both government and the private sector, over a time horizon that is long enough to see it through. It is about building trusted ecosystems with our partners and allies, so that nations that share our values are the ones building and operating the networks of the future. And it is about acting with urgency and speed.

At the FCC, my priorities have been focused on achieving universal connectivity, strengthening network security, and advancing U.S. leadership in next-generation technologies. 6G sits at the intersection of all three. And I am committed to bringing the same urgency to this work that the moment demands.

Think about those three moments I described at the beginning. The Rosetta Stone was not just a discovery – it required scholars who worked for years to decode its meaning, turning a fragment of stone into a key. The Mariner 4 was not just a rocket – it was 228 days of precision navigation, engineering discipline, and scientific focus, followed by twenty-five minutes of images that changed the world. The Apollo-Soyuz was not just a handshake in space – it required two superpowers to coordinate across language, culture, and political hostility to carry out a mission that demonstrated the power of technical interoperability and cooperation.

Viewed through that lens, 6G will not build itself. The spectrum will not auction itself. The standards will not write themselves. The trusted ecosystems will not assemble themselves. Leadership requires a deliberate, sustained, and coordinated effort across government, industry, and our international partners.

The question before us is not whether 6G will have the potential to transform the world. It will. The question is whether America will lead that transformation.

The United States has long led the world in wireless innovation. There is no reason we cannot lead the 6G era as well. But leadership is never inherited. It is earned through investment, innovation, and a regulatory environment that supports the willingness to make difficult decisions before the rest of the world does. I believe we can meet that challenge. I believe we will.

Thank you.