5G and Licensed Spectrum Offer the Security and Reliability to Meet Cybersecurity Challenges

5G WIRELESS NETWORKS BUILT ON LICENSED SPECTRUM ARE THE MOST SECURE GENERATION OF WIRLELESS THANKS TO:

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New security protections

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and licensed spectrum attributes:

- Limits interference
- Creates a secure system
- Requires devices to be certified for use
- Incentivizes investment in additional security

In a world filled with increasing cybersecurity threats, we must work to ensure our telecommunications networks are built on the most secure platforms and technologies.

According to a new report from telecommunication security firm, HardenStance, a 5G wireless network built on licensed spectrum is the most secure wireless communications model available. That's because 5G was designed with security in mind from the ground up and includes new protections. And it's because exclusive-use, licensed spectrum enables providers to deliver consistent, reliable connections, with limited risk of interference and free from the preemption common in other spectrum allocations.

To ensure all Americans benefit from highly secure and reliable 5G wireless, policymakers should allocate more spectrum for licensed, commercial use.

Licensed Spectrum Is the Secure and Reliable Platform

According to HardenStance, exclusive-use, licensed spectrum is a secure and reliable platform because it:

Incentivizes security investment: Licensed holders have spent $233 billion to acquire the rights to use their spectrum. The significance of the investment and the rights that come with it incentivize providers to "protect the confidentiality, availability and integrity of their networks." America's wireless providers have invested over $160B in networks since 2018, the year 5G launched *(CTIA)*.

Is a secure architecture: 5G network defenses have been designed from the ground up in the 3GPP standards process and include the use of standards-based encryption algorithms, new and advanced authentication mechanisms, strict controls for physical and IT access, and more. Networks built with exclusive use, licensed spectrum offer fewer potential points of attack thanks to the lack of middlemen and shared databases involved. And smartphones, tablets, and laptops connected to licensed networks must adhere to standards and pass rigorous certification testing, increasing the overall security of the network.

Benefits from a dedicated security ecosystem: Security is taken seriously by the telecom sector, through collaborative groups—that include industry and government experts—devoted to these issues. This enhances the security of the entire communications ecosystem and makes it easier for wireless providers to respond quickly to incidents.

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"Exclusive spectrum licensing is best for ensuring that the cybersecurity posture of users aligns with national cybersecurity and broader national security goals."

— Patrick Donegan, Principal Analyst, HardenStance

Creates a rigorous and consistent security response: According to HardenStance, "[t]he common commercial incentives, the common approach to security operations, the regulatory mandates and peer-to-peer collaboration, mean licensed wireless operators have a lot more in common than differentiates them from a cybersecurity perspective." This means that stakeholders are familiar with how to respond to and evolve in their defense against cyberattacks.

More Licensed Spectrum Is Key to Securing our Connected Future

HardenStance finds 5G networks powered by licensed spectrum offer more security and reliability than those built on unlicensed or shared spectrum—making them key to supporting the devices and innovations developed through the 5G Economy.

Licensed spectrum best protects growing "Internet of Things." Wireless providers' oversight of their networks and the licensed spectrum that underpins them means that all the devices that users connect to wireless networks are monitored, managed, and benefit from 5G's enhanced security features. This oversight has huge implications for the many IoT devices expected to connect to broadband networks—from limited and often unsecure technologies like smart toasters all the way to highly sophisticated and critically important smart energy grid technologies. HardenStance says, "[l]icensed wireless operators can first secure, and then constantly monitor and manage every single 4G or 5G-connected IoT device in the field."

Unlicensed and sharing regimes cannot offer this level of reliability. Unlicensed spectrum isn't managed, monitored, or secured in these same ways. As HardenStance says, "Neither the FCC nor any other government agency has anything like the same expectations of unlicensed spectrum holders with respect to collaboration and accountability in areas like cyber incident reporting in the broader national interest." And shared spectrum cannot offer the same reliability, with more interference issues, multiple stakeholders to manage, and "seams" that can be more easily exploited.

Policymakers should move quickly to make more licensed spectrum available. Licensed spectrum is a key input into building secure communications networks that support a safe internet experience. Policymakers should make more licensed spectrum available to help us secure our connected future. Key tranches of mid-band in the Lower 3 GHz, 4 GHz, and 7/8 GHz bands are ideal for enhancing 5G's speeds, capacity, and quick response time, providing the full, secure, 5G experience promised by 3GPP standards.