

**Before the  
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION  
U.S. DEPARTMENT OF COMMERCE  
Washington, D.C. 20230**

***Re: The National Strategy to Secure 5G Implementation Plan; Docket No. 200521-0144***

**COMMENTS OF STARRY, INC.  
June 18, 2020**

Starry, Inc. (Starry)<sup>1</sup> respectfully submits these comments in response to the National Telecommunications and Information Administration’s (NTIA) Request for Comment (RFC) on the development of the National Strategy to Secure 5G Implementation Plan.<sup>2</sup> Securing the United States’ wireless supply chain and networks is critical to the near- and long-term development of 5G technologies and beyond. With specific goals and a strategic framework, federal and industry stakeholders can identify a unifying direction and work together to secure the United States’ position as a leader in next-generation wireless technologies and services.

The benefits of ubiquitous broadband access are well known.<sup>3</sup> A robust market is critical to the nation’s economic success – connecting people with employment opportunities, healthcare and education services. Recent events, like the COVID-19 pandemic, highlight the importance of accessible and reliable broadband connections for American consumers.<sup>4</sup> For example, at the start of the global pandemic, consumers were forced to find new ways to work at home with an increased reliance on their broadband connections. Reports indicate that the use of applications like Zoom for teleconferencing skyrocketed to more than 6 million sessions per day, with Google Hangouts close behind at nearly 4.5 million sessions per day.<sup>5</sup> And even prior to the pandemic,

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<sup>1</sup> Starry, Inc., is a Boston- and New York-based technology company that utilizes millimeter waves to re-imagine last-mile broadband access as an alternative to fixed wireline broadband. Starry currently deploys its wideband hybrid fiber wireless technology in the Boston; Washington, DC; Los Angeles; New York City; and Denver areas, with plans to expand our presence to additional U.S. cities through 2020.

<sup>2</sup> U.S. Department of Commerce, National Telecommunications and Information Administration, *The National Strategy to Secure 5G Implementation Plan*, 85 FR 32016 (May 28, 2020) (NTIA RFC).

<sup>3</sup> See, e.g., FCC, *Communications Marketplace Report*, Report, GN Docket No. 18-231 (rel. Dec. 26, 2018); 2019 Broadband Deployment Report; Ajit Pai, “Bridging the Digital Divide” (July 13, 2017), available at <https://www.fcc.gov/news-events/blog/2017/07/13/bridging-digital-divide>.

<sup>4</sup> New York Times, “The Virus Changed the Way We Internet,” (Apr. 7, 2020), <https://www.nytimes.com/interactive/2020/04/07/technology/coronavirus-internet-use.html>.

<sup>5</sup> *Id.*

metrics suggested that 80% of middle-skill jobs now require some type of digital skills,<sup>6</sup> and nearly 70% of teachers assign homework that requires an internet connection.<sup>7</sup>

Telehealth applications also are booming, with an increased reliance on doctors' visits and remote monitoring. What's more, a national election is on the horizon, and broadband users are more likely to vote and be involved in civic activities. At its most fundamental, a reliable internet connection helps families and friends maintain relationships with loved ones in an increasingly mobile world, now more than ever. Each of these examples is a testament to the fact that internet access is a critical component of being able to fully engage in daily life.

5G and future technologies promise to be a revolution for consumers across the globe, with faster data speeds, reduced latency, and multipurpose networks. As of April 2020, studies indicate that roughly 4.6 billion people worldwide are internet users, encompassing nearly 60% of the global population.<sup>8</sup> In the United States, "5G networks and their related applications are expected to add three million jobs and \$1.2 trillion to the economy."<sup>9</sup> For those with access, the internet is a global commodity – a way to connect across borders without changing currency. But these benefits cannot be realized if the underlying networks are not robust, reliable, and secure.

Starry offers its unique perspective in response to the RFC as an advanced U.S.-based gigabit wireless equipment innovator, developer, and manufacturer, as well as a network owner and a service provider. Fundamentally, Starry believes that a focus on policies that promote broadband competition and digital equity are key to ensuring a robust and secure domestic wireless ecosystem.

Starry supports NTIA's RFC, which represents an opportunity for policymakers to advance policies and partnerships that foster a competitive ecosystem and the expansion of secure, next-generation services. Starry encourages NTIA to work alongside industry

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<sup>6</sup> Burning Glass Technologies, "The Digital Edge: Middle-Skill Workers and Careers" (2017), available at [https://www.burning-glass.com/wp-content/uploads/Digital\\_Edge\\_report\\_2017\\_final.pdf](https://www.burning-glass.com/wp-content/uploads/Digital_Edge_report_2017_final.pdf).

<sup>7</sup> Common Sense, *The Homework Gap: Teacher Perspectives on Closing the Digital Divide*, (2019), available at [https://www.common SenseMedia.org/sites/default/files/uploads/kids\\_action/homework-gap-report-2019.pdf](https://www.common SenseMedia.org/sites/default/files/uploads/kids_action/homework-gap-report-2019.pdf).

<sup>8</sup> NextWeb, "Digital Trends 2020," (Jan. 30, 2020), available at <https://thenextweb.com/growth-quarters/2020/01/30/digital-trends-2020-every-single-stat-you-need-to-know-about-the-internet/>.

<sup>9</sup> Nicol Turner Lee, "Navigating the U.S.-China 5G Competition," at 2 (Apr. 2020), available at [https://www.brookings.edu/wp-content/uploads/2020/04/FP\\_20200427\\_5g\\_competition\\_turner\\_lee\\_v2.pdf](https://www.brookings.edu/wp-content/uploads/2020/04/FP_20200427_5g_competition_turner_lee_v2.pdf) (citing, Roslyn Layton, "On C-Band Spectrum, Auction Speed Is All That Matters," *Forbes*, Nov. 13, 2019) ("Navigating Competition").

stakeholders, Congress, the FCC, and the Administration to enhance the Secure 5G Implementation Plan and accelerate U.S. global leadership in 5G and beyond by: 1) prioritizing technology-neutral policies like flexible access to spectrum and streamlined deployment procedures; and 2) supporting vendor diversity in domestic and international markets; and 3) facilitating robust private-public investment in research, development, and prototyping of technologies beyond 5G.

**I. Policies that Promote Competition Will Spur Private Investment and Help the U.S. Maintain Pace in the Development of 5G and Beyond**

NTIA's RFC asks how the United States can encourage private sector investment in a robust next-generation ecosystem.<sup>10</sup> Starry believes that innovation and investment hinge on the creation of a competitive marketplace. To date, private companies have largely driven the capital investments necessary to build tomorrow's network architecture. Regulatory and legislative directives should inspire, rather than confine, invention and development; how the United States manages its spectrum access and network policies will dictate its leadership position for 5G and beyond.

Starry holds a unique position in the U.S. market as an innovator, equipment manufacturer with our own supply chain, and a fixed wireless 5G service provider. We continue to invest significant resources in our technology stack to continue to improve its functionality and security. To date, Starry has made critical manufacturing and supply chain decisions, all with an eye to protecting not just our intellectual property, but the security and integrity of our telecommunications stack. We are at the forefront of deploying next-generation technology, and our growth is a tangible example of how consumers today are directly benefiting from smart policies adopted by forward-thinking policymakers. NTIA should collaborate with other federal agencies, like the FCC, to advance policies that address lingering digital divides and inspire market competition. Below we suggest four policy priorities that we believe will stimulate competition in the marketplace for 5G and beyond.

Flexible Spectrum Policies. First, the possibility of 5G and beyond hinges in large part on smart spectrum strategies, including those that facilitate coordination between commercial and federal entities to unlock existing and future bands. Flexible spectrum policies drive U.S.

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<sup>10</sup> NTIA RFC at 2.

wireless leadership by stimulating competition and diversity in the supplier ecosystem, for two reasons.<sup>11</sup> Flexible and low barrier spectrum policies allow more providers to access spectrum and provide new competitive services, growing the market of equipment purchasers. Robust sharing policies can also facilitate the development of dual-purpose wireless equipment that meets both commercial and government users' needs. Combined, this results in a dramatically larger ecosystem of equipment purchasers, facilitating a larger, more robust, and more diverse equipment ecosystem.

Starry continues to advocate for lower-barrier access to spectrum that encourages innovative wireless-enabled services and a more diverse ecosystem, so new entrants can access spectrum when and where it is required.<sup>12</sup> Starry itself is a meaningful example of this principle: Starry entered the market as an integrated technology developer and service provider, and continues to design, develop, manufacture, deploy, and operate our own network, all from the ground up. We do so in part because of the FCC's and NTIA's pro-innovation decision to make the Lower 37 GHz band available on a licensed-shared basis.<sup>13</sup> This band and others can help facilitate a robust commercial-federal equipment ecosystem.

In addition to creating a larger marketplace, facilitating dual-purpose technologies can also help to improve network security. Because vendors will strive to develop equipment that is capable of serving both commercial and federal customers, and federal users may have increased security standards, the full ecosystem will be more secure.

Targeted Subsidies to Areas Lacking Affordable, Competitive Choices. Closing the digital divide – especially for low-income consumers – remains one of policymakers' top priorities and is a lingering reality that ultimately disrupts the 5G ecosystem. Just last week,

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<sup>11</sup> Comments of Starry, Inc., *Developing a Sustainable Spectrum Strategy for America's Future*, NTIA (filed Jan. 22, 2019) ("NTIA Spectrum Comments").

<sup>12</sup> *Id.* at 3.

<sup>13</sup> *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services; Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services*, Report and Order, GN Docket No. 14-177, WT Docket No. 10-112 ¶¶ 111-118 (rel. July 14, 2016); *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services; Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services*, Third Further Notice of Proposed Rulemaking, GN Docket No. 14-177, WT Docket No. 10-112 ¶¶ 62-69 (rel. June 8, 2018). NTIA and the FCC should act to finalize the rules relating to the Lower 37 GHz band.

NTIA released its Internet Use Survey in partnership with the U.S. Census Bureau.<sup>14</sup> The report found that gaps in internet access continue to persist across demographics and family income levels. For example, “internet use among Americans with family incomes below \$25,000 per year increased from 62 percent in 2017 to 65 percent in 2019, though this was still far short of the 87 percent of those with annual family incomes of \$100,000 or more.”<sup>15</sup> NTIA and others should pursue programs that prioritize private-public partnerships that help to address this particular digital inequity, which will create a solid foundation for connected consumers and a robust market. In addition to furthering the country’s 5G agenda, connecting previously unserved or underserved consumers also will generate increased economic activity to further the country’s economic expansion and help to secure its position as a technological leader.

For example, the Starry Connect program takes an innovative approach by offering consumers free and low-cost internet solutions through direct partnerships with public and affordable housing owners. For \$15/month, Starry Connect participants gain access to a 30 Mbps symmetrical plan, with no data caps, no long-term contracts, no extra equipment or installation fees and the same white-glove service that is a hallmark of Starry’s internet service. Importantly, the Starry Connect program does not currently rely on any federal subsidy, nor does it require burdensome eligibility requirements of subscribers. Rather, it relies on an innovative partnership structure with the property owner to qualify residents and provision low-cost service. NTIA should work with its agency partners to adopt federal programs, or pursue subsidy initiatives, that would incentivize and accelerate the creation of public-private partnerships such as this. A fulsome next-generation ecosystem requires connectivity for all consumers; targeted incentives will properly distribute finite federal resources to providers doing the work to offer low-cost broadband to those most in need.

Competitive Deployment Opportunities. Third, U.S. leadership and private sector investment can thrive under policies that facilitate competitive broadband choice. To that end,

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<sup>14</sup> *NTIA Data Reveal Shifts in Technology Use, Persistent Digital Divide*, NTIA Internet Use Survey (rel. June 10, 2020), available at [https://www.ntia.gov/blog/2020/ntia-data-reveal-shifts-technology-use-persistent-digital-divide?utm\\_source=sendgrid&utm\\_medium=email&utm\\_campaign=Newsletters](https://www.ntia.gov/blog/2020/ntia-data-reveal-shifts-technology-use-persistent-digital-divide?utm_source=sendgrid&utm_medium=email&utm_campaign=Newsletters).

<sup>15</sup> *Id.*

NTIA, Congress, and the FCC have made significant strides to streamline infrastructure deployment processes in the last decade, but obstacles remain.<sup>16</sup>

NTIA should work alongside Congress and the FCC to conclude longstanding deployment proceedings, especially those that continue to respect local authority and promote further deployment of fixed broadband networks. Fixed wireless networks rely on strategically located transmitters and receivers to provide service to end users. Historically, the receivers that go on a customer's home are protected under the FCC's Over-the-Air-Reception Device (OTARD) rules. However, base stations for fixed services are not. This is the case even for modern 5G transmitters that are small in size and have no greater impact on a community than the fixed receivers. To clarify these discrepancies, the FCC recently revisited its proceeding to update and modernize its OTARD rules.<sup>17</sup> In addition, to help stimulate competition in multi-tenant environments (MTEs), including in urban areas, the FCC released a Notice of Proposed Rulemaking dealing with deployments in MTEs when exclusivity arrangements are in effect.<sup>18</sup> NTIA should encourage the FCC to act on these proposals, which would modernize outdated regulations and significantly reduce construction timelines to further advance the expansion of next-generation services.

Future Policies Should be Technology-Neutral. Broadband technology will continue to be a key component to competition as consumers demand more innovative and customized products across the U.S. manufacturing and supply chains. When looking to facilitate the domestic rollout of 5G and future technologies, the government should avoid regimes that favor one technology over another. Even in the case of 5G, it should not be viewed as a monolithic mobile-industry standard technology and service, but a collection of technologies and services from diverse providers and vendors, all utilizing a variety of standardized and non-standardized technologies. To facilitate a robust 5G ecosystem, policymakers should avoid initiatives that favor one technology over another or impose regulatory burdens that would stunt innovation and

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<sup>16</sup> See, e.g., Reply Comments of Starry, Inc., FCC GN Docket No. 17-142 (filed Sept. 30, 2019); Comments of Starry, Inc., FCC WT Docket No. 19-71 (filed June 3, 2019); Reply Comments of Starry, Inc., FCC WT Docket No. 19-171 (filed June 17, 2019).

<sup>17</sup> *Updating the Commission's Rule for Over-the-Air Reception Devices*, WT Docket No. 19-71, Notice of Proposed Rulemaking, FCC No. 19-36, (rel. Apr. 12, 2019).

<sup>18</sup> *Improving Competitive Broadband Access to Multiple Tenant Environments; Petition for Preemption of Article 52 of the San Francisco Policy Code Filed by the Multifamily Broadband Council*; GN Docket No. 17-142, MB Docket No. 17-91; Notice of Proposed Rulemaking and Declaratory Ruling, FCC No. 19-65 (rel. July 12, 2019).

investment. It should consider robust platforms for security that span technologies and standards, instead of ones tailored to specific technology implementations.

In addition, the Administration should preserve long-standing statutes that are designed to ensure industry stakeholders and consumers share a stake in the growth of the internet ecosystem, like the Digital Millennium Copyright Act. Attempts to weaken long-standing safe harbors and impose overly-burdensome procedural checks on private companies will stymie investment and innovation for both consumers and new market entrants.<sup>19</sup>

## **II. Vendor Diversity Will Foster Market Competition and Access to Robust and Diverse Technologies**

The RFC asks about ways to promote vendor diversity and foster market competition. Recent publications suggest that the U.S. is currently lacking in commercial competition as compared to the telecom industries in other countries.<sup>20</sup> But healthy supply chains are fueled by competition, and increased vendor diversity will promote U.S.-based scalable alternatives to the production of next-generation equipment. 5G and next-generation technologies promise to transform a breadth of industries including automated vehicles and artificial intelligence, an extensive Internet of Things ecosystem, and medical advancements like remote surgery. The United States' supply chains and existing local networks must be secure and agile to account for this widespread evolution.

NTIA, Congress, and other agencies can advance supply chain diversity and competition by incentivizing domestic software and equipment manufacturing production. Specifically, the government could consider a program that distributes block grants to states that welcome telecommunications manufacturing within their borders. Doing so would inspire state-led partnerships with U.S.-based companies and help to build out the manufacturing and supply chain foundation necessary to deploy the backbone of tomorrow's digital infrastructure.

An influx of U.S.-based software and equipment manufacturers also would encourage international access to U.S.-produced technologies and create an opportunity to meaningfully enhance U.S. trade policies. Historically, our country has "led ideation, research, and

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<sup>19</sup> The Hill, "Getting Back to Basics on the Digital Millennium Copyright Act" (Dec. 17, 2019), <https://thehill.com/blogs/congress-blog/technology/474918-getting-back-to-basics-on-the-digital-millennium-copyright-act>.

<sup>20</sup> See Navigating Competition at 1.

development . . . in the high-tech sectors.”<sup>21</sup> But now is the time for the U.S. to seize a leadership foothold in technology manufacturing as well. Government leaders can create a “strategic and organized call to action, or a 5G blueprint, that facilitates faster and improved access to infrastructure assets,” for domestic and international operators alike.<sup>22</sup> A strong manufacturing base would inspire an economic boon and drive technological innovation.

Finally, as previously discussed, policies that foster competitive access to spectrum and competition for service providers will drive supply chain diversity and ensure there is a robust vendor market to satisfy supply and demand. Restrictive, outdated policies will continue to slow our advancement to 5G and exacerbate national security concerns. NTIA, Congress, and the FCC should continue to advance policies that are flexible and technology-neutral.

### **III. The U.S. Should Facilitate Public-Private Investment in Future Research, Development, and Prototyping**

Research and development is the hallmark of innovation. Earmarking funds for enhanced research and development initiatives, including targeted support to amplify the domestic creation of 5G prototypes and applications, will strengthen the United States’ near- and long-term plans to accelerate the deployment of 5G and beyond. The government can play a critical role in this development by inspiring all industry sectors to participate in the creation of future applications and platforms that will be powered by these advanced networks.

The United States’ private sector will lead the rollout of future technologies, but targeted assistance from the government is key to overall success. The transition to 5G is achievable with a clear, well-funded strategy; it presents unique opportunities and challenges, and the United States should support the research and development of multipurpose networks for 5G and future advanced wireless technologies, whether or not they represent a generational shift in mobile technology. Specifically, Starry agrees that “policymakers should increase funding for early stage wireless research and development” because it will be critical to “setting the stage for 6G.”<sup>23</sup>

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<sup>21</sup> *See id.* at 6.

<sup>22</sup> *Id.*

<sup>23</sup> *See* Doug Brake, “A U.S. National Strategy for 5G and Future Wireless Innovation,” ITIF (Apr. 27, 2020), available at <https://itif.org/publications/2020/04/27/us-national-strategy-5g-and-future-wireless-innovation/>.

Enhanced R&D and initiatives, coupled with lengthy prototype testing, will identify areas in which the U.S. can secure a stake in the production of next-generation technologies, including but not limited to 5G, using standards that are both secure and technology-neutral. As an example, countries like the United Kingdom have explored the possibility of an R&D tax credit, wherein private businesses would be reimbursed for efforts related to experiments with 5G networks, work on compatibility of wireless networks, and improving network security measures.<sup>24</sup> Domestically, the Department of Defense has an Other Transaction Authority vehicle with the National Spectrum Consortium, which has a broad industry and academia membership, and is well-positioned to help lead private-public collaboration in advanced research, development, and prototyping. Increased funding for research and development initiatives would create 5G outputs and related applications for the United States' broadband ecosystem and help to corner the market for next-generation technologies and services.<sup>25</sup>

Finally, the United States will play an important role in the global endeavor to launch 5G and can advance its position with consistent participation in conversations to create and expand tech standards. The U.S. should consider funding attendance by at least one representative partaking in international conferences and consistently encourage representatives from U.S.-based regulatory and telecommunications bodies, like NTIA and the FCC, to join in these processes. Robust attendance from government representatives will convey political prowess and enhance research and development initiatives, and solidify our global position as a technology innovation leader.

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<sup>24</sup> See ForrestBrown, "5G Technology: How is our 5G future being built and what will it look like?" (Apr. 5, 2017), <https://forrestbrown.co.uk/news/5g-technology-research-development/>.

<sup>25</sup> See Navigating Competition at 7.

#### **IV. Conclusion**

Starry supports the development of a National Strategy to Secure 5G and encourages NTIA to consider the recommendations herein to produce a reliable, secure, competitive ecosystem and supply chain within the United States' borders and beyond.

Respectfully submitted,  
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