Before the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, DC 20230

In the Matter of	)	
	)	
Developing a Sustainable Spectrum Strategy for America's Future	)	Docket No. 181130999–8999–01
	)	RIN 0660–XC044
	)	
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	)	

COMMENTS OF DISH NETWORK CORPORATION

DISH Network Corporation ("DISH") submits these comments in the above-captioned proceeding initiated by the National Telecommunications and Information Administration ("NTIA") seeking comment on the "development of a comprehensive, long-term national spectrum strategy."[1] The *Notice* comes as the wireless industry is on the cusp of a new era of connectivity and communications, with the forthcoming transition to next-generation 5G and Internet of Things ("IoT") services, including narrowband IoT ("NB-IoT"). As the NTIA develops its spectrum strategy, it should maintain the flexible use approach governing spectrum policies fostered by the Federal Communications Commission ("FCC"). The FCC's flexible use policies continue to facilitate investment in new wireless services – including 5G and NB-IoT – and are critical to helping the United States win the global race to 5G.

I. THE WIRELESS INDUSTRY IS INVESTING IN NEXT-GENERATION 5G AND IoT SERVICES, INCLUDING NB-IoT

The coming transition to 5G represents a paradigm shift in the wireless industry. 5G will meet the increasing demand for communications by offering dramatically higher data speeds and

[1] *See* Notice, *Developing a Sustainable Spectrum Strategy for America's Future*, National Telecommunications and Information Administration, Docket No. 181130999–8999–01, RIN 0660–XC044, 83 Fed. Reg. 245 (Dec. 21, 2018), *available at* https://www.ntia.doc.gov/files/ntia/publications/2018-27690_3.pdf ("*Notice*").

capacity, while also addressing the needs of a networked society by enabling massive connectivity and ultra-low latency for mission critical services. 5G will usher in a new era of economic growth and innovation by connecting billions of new consumer and industrial devices.

With 5G on the horizon, widespread IoT deployment is already a reality. In 2017, a Government Accountability Office report noted that "[t]he number of connected devices—ranging from goods like phones and cameras to connected vehicles to automated manufacturing facilities—is currently estimated in the billions and rising."[2] Consistent with these projections, wireless players around the globe are investing in new IoT products and services, including NB-IoT.[3] This investment is poised to bring competition to the market for NB-IoT networks, products, and services.

As AT&T explained, NB-IoT offers distinct advantages, including "longer battery life, coverage extension, and lower costs than traditional cellular LTE connectivity."[4] Similarly, T-Mobile noted that in addition to demonstrating "greater efficiency and performance[,]" NB-IoT "provides a pathway to 5G IoT" and has the capability to "connect massive numbers of devices with small and steady streams of data at low cost."[5]

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[2] United States Government Accountability Office Report to Congressional Requesters, "Internet of Things: FCC Should Track Growth to Ensure Sufficient Spectrum Remains Available," GAO-18-71, at 1 (Nov. 2017), *available at* https://www.gao.gov/assets/690/688450.pdf.

[3] "NB-IoT Ignites the Race to a Billion LPWA Connected Devices by 2025, Says ON World," PRWeb (Mar. 14, 2018), *available at* http://www.prweb.com/releases/2018/03/prweb15309494.htm.

[4] "AT&T to Launch NarrowBand IoT Network in U.S. and Mexico," AT&T Newsroom (Jun. 20, 2018), *available at* http://about.att.com/story/narrowband_iot_launches_us_and_mexico.html ("*AT&T June 20 Press Release*").

[5] "T-Mobile Launches Nation's First Plan for Narrowband IoT," T-Mobile Newsroom (Jan. 9, 2018), *available at* https://newsroom.t-mobile.com/news-and-blogs/narrowband-iot.htm ("*T-Mobile January 9 Press Release*").

Lawmakers and regulators from both sides of the aisle have also hailed the benefits of NB-IoT. During a panel discussion about NB-IoT, Commissioner O'Rielly described the technology as "broadband's sister" and observed that "wireless narrowband networks … can provide the steady reliable communications that can deliver what many envision on an Internet of Things … in an affordable and effective way."[6] Similarly, Representative Doris Matsui explained that she is "excited about the potential of narrowband" to power technology that operates in "previously unused spectrum."[7] She highlighted that NB-IoT is "particularly suited for both nationwide deployments and for rural networks."[8] Referring to NB-IoT and other innovative uses of spectrum, Matsui opined that "in this country, we really need to look ahead to see what is going on in order to stay ahead."[9]

The wireless industry has recognized these benefits and is investing in NB-IoT:

- In June 2018, AT&T announced it would launch an NB-IoT network in the United States and Mexico, noting NB-IoT is "ideally suited to meet basic data requirements" that "can support a wide range of applications globally."[10]
- In February 2018, Verizon announced a collaboration with Ericsson to offer NB-IoT, which provides "scale, coverage and security for customers seeking scalable and cost effective" IoT solutions. The network "will be fully complete across Verizon's nationwide network covering 2.56 million square miles in 2018."[11]
- In January 2018, T-Mobile announced an NB-IoT plan to "make it simpler – and massively more affordable – for businesses and cities to connect things" and "unleash the next wave of IoT innovation."[12]

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[6] "Narrowband IoT Networks (NB-IoT): An Innovative Step on the Road to 5G," Competitive Carriers Association, at 6:03, 7:54 (Jul. 18, 2018), *available at* https://vimeo.com/281317472/0a7112b3aa.

[7] *Id.* at 38:47, 39:55.

[8] *Id.* at 37:03.

[9] *Id.* at 41:26.

[10] *AT&T June 20 Press Release.*

[11] "Verizon Carries Successful Data Session on New NB-IoT Guard Band Network," Verizon Newsroom (Feb. 1, 2018), *available at* https://www.verizon.com/about/news/verizon-carries-successful-data-session-new-nb-iot-guard-band-network.

[12] *T-Mobile January 9 Press Release*.

- In March 2017, DISH announced plans to deploy NB-IoT as Phase 1 of its next-generation network.[13]

Companies around the world are also launching NB-IoT-powered solutions:

- Orange partnered with start-up CommuniThings for the "commercial launch of the first smart-parking solution over NB-IoT technology" in Belgium.[14]
- Telecom Italia helped power an Italian municipality's "new generation [water] meters" that rely on NB-IoT and its "ultra-low-power radio transmitting devices."[15]
- TIM Brasil, a Brazilian subsidiary of Telecom Italia, partnered with Ericsson to deploy NB-IoT in more than 1,000 Brazilian cities by the end of 2018.[16]
- Deutsche Telekom and Vodafone completed NB-IoT roaming trials throughout Europe.[17]
- China has been actively driving the development of NB-IoT, with three major mobile operators investing heavily in NB-IoT networks.[18]

In sum, like other industry players, we see NB-IoT as filling a growing demand for device connectivity in the near term, while serving as a stepping stone to 5G in the future.

[13] *See* DBSD Services Limited, Gamma Acquisition L.L.C., and Manifest Wireless L.L.C.'s Consolidated Interim Construction Notification for AWS-4 and Lower 700 MHz E Block Licenses, ULS Lead File No. 0007690535 (Mar. 7, 2017).

[14] "CommuniThings Launches First NB-IoT Smart Parking at the City of Liège, in Partnership with Orange," Orange Commercial News (Jun. 29, 2018), *available at* https://corporate.orange.be/en/news-medias/communithings-launches-first-nb-iot-smart-parking-city-li%C3%A8ge-partnership-orange.

[15] "TIM, Olivetti and NTT DATA: the First Monitoring Service for Drinking Water Is Underway," TIM (Jun. 11, 2018), *available at* https://www.olivetti.com/en/corporate/press-room/news/tim-olivetti-and-ntt-data-first-monitoring-service-drinking-water-is.

[16] *See* "IoT Time: M2M/Internet of Things Weekly Digest," Telegeography (Jun. 21, 2018), *available at* https://www.telegeography.com/products/commsupdate/articles/2018/06/21/iot-time-m2minternet-of-things-weekly-digest/.

[17] *See* Corinne Reichert, "Deutsche Telekom and Vodafone Trial NB-IoT International Roaming," ZDNet (Jun. 5, 2018), *available at* https://www.zdnet.com/article/deutsche-telekom-and-vodafone-trial-nb-iot-international-roaming/.

[18] *See* "China will Lead the World in NB-IoT, Which Will Benefit Chinese Vendors and the Ecosystem Worldwide," Analsys Mason (Jan. 18, 2018), *available at* http://www.analysysmason.com/Research/Content/Comments/China-IoT-benefits-RDME0-RDRP0/.

II. INDUSTRY INVESTMENT IN NB-IoT AND 5G IS INFORMED BY FLEXIBLE USE POLICIES

The *Notice* seeks comment on the "development of a comprehensive, long-term national spectrum strategy as required by the Presidential Memorandum, *Developing a Sustainable Spectrum Strategy for America's Future*[.]"[19] The FCC's flexible use spectrum policies have encouraged the deployment of innovative new services. Indeed, these policies provide new entrants with the flexibility to build out networks using the technologies of their choice, develop business plans without the heavy hand of government intervention, and ultimately offer the products and services they believe can best meet market demand. The NTIA should maintain this flexible use approach to continue to facilitate industry investment and innovation; doing so will ensure America is competitive in the race to 5G.

As Chairman Pai has recognized the FCC "basically make[s] spectrum available and then [we] do our best to stay out of the way of technological development and the details of implementation."[20] Other Commissioners have also echoed the importance of the Commission's flexible regulatory approach in spurring the deployment of innovative new services. Commissioner O'Rielly has explained that "[t]he Commission implements flexible use policies, meaning a winner at auction can deploy whatever service or innovation they choose. The Commission does not and should not make any decisions regarding what can or cannot be deployed in a band, beyond setting technical rules to prevent harmful interference to incumbents and adjacent users."[21]

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[19] *Notice* at 1.

[20] Remarks of FCC Chairman Ajit Pai at "Broadband for All" Seminar, at 4 (Jun. 26, 2017), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-345512A1.pdf.

[21] Promoting Investment in the 3550-3700 MHz Band, *Notice of Proposed Rulemaking and Order Terminating Petitions,* FCC 17-134, GN Docket No. 17-258, Statement of Commissioner Michael

Commissioner Carr also noted that "our greatest advancements have developed free from the heavy-hand of government intervention," adding that "[w]e see this perhaps most prominently in the wireless sector. The Commission has adopted flexible use licenses … and steered clear of mandating the use of specific technologies. This approach has proven to be a tremendous success for American consumers by allowing providers the flexibility to deploy the latest wireless technologies."[22] The FCC's flexible approach towards spectrum policy continues to facilitate innovation and investment in new products and services, including NB-IoT, to the benefit of the American consumer. The NTIA should ensure that any spectrum strategy also provides for flexible use.

III. CONCLUSION

The wireless industry is in the midst of a technological paradigm shift from legacy technology to a connected world, driven by 5G and IoT. The NTIA should maintain the FCC's flexible use approach to ensure America is competitive in the race to 5G.

Respectfully submitted,

/s/

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O'Rielly, at 1 (Oct. 24, 2017), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-347378A4.pdf.

[22] Authorizing Permissive Use of the "Next Generation" Broadcast Television Standard, *Report and Order and Further Notice of Proposed Rulemaking*, FCC 17-158, GN Docket No. 16-142, Statement of Commissioner Brendan Carr (Nov. 20, 2017), *available at* https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-158A5.pdf.

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