



MEMORANDUM

October 25, 2019

To: Subcommittee on Communications and Technology Members and Staff
Fr: Committee on Energy and Commerce Staff
Re: Hearing on “Repurposing the C-Band to Benefit All Americans”

On Tuesday, October 29, 2019, at 10 a.m. in room 2322 of the Rayburn House Office Building, the Subcommittee on Communications and Technology will hold a hearing entitled, “Repurposing the C-Band to Benefit All Americans.”

I. BACKGROUND

Electromagnetic spectrum is used to deliver radio, broadcast television (TV), cellular, and wireless broadband internet services, including 5G wireless technology. There is a finite amount of spectrum available, but demand for it is surging—Ericsson predicts that between 2016 and 2022 the data traffic generated by smartphones in North America will increase by a factor of six.¹ Mid-band spectrum is particularly well-suited for next generation wireless broadband services due to its specific combination of favorable propagation characteristics.² The spectrum between 3.7 gigahertz (GHz) and 4.2 GHz, commonly referred to as C-band, is prime mid-band spectrum that is currently being evaluated world-wide for 5G suitability.³ Estimates of the value of C-band spectrum range as high as \$60 billion, or more for the full 500 megahertz (MHz) in the band.⁴

A. Licensed Operators and Uses in the C-band

In the United States, C-band spectrum is predominately used by a handful of satellite operators to deliver programming content to radio and TV broadcasters.⁵ The members of the C-band Alliance (CBA) – SES, Intelsat, and Telesat – are headquartered in Luxembourg,

¹ Ericsson, *Future Mobile Data and Traffic Growth* (www.ericsson.com/en/mobility-report/future-mobile-data-usage-and-traffic-growth) (accessed Oct. 24, 2019).

² Federal Communications Commission, *In the Matter of Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Order and Notice of Proposed Rulemaking, GN Docket No. 18-122, FCC 18-91 (Jul. 13, 2018) (hereinafter, “*C-band NPRM*”), para. 5.

³ Joe Barrett, President, Global Mobile Suppliers Association, *5G Spectrum Bands* (Feb. 22, 2017), gsacom.com/5g-spectrum-bands/.

⁴ Caleb Henry, *Satellite C-band is Worth Billions, But How Many?*, SpaceNews (Sept. 16, 2019).

⁵ *C-band NPRM*, para. 10.

Luxembourg, and Canada, respectively.⁶ Eutelsat, which recently withdrew from membership in the C-band Alliance, is based in France.⁷ There are also four other satellite companies, such as ABS Global, which the Federal Communications Commission (FCC) permits to transmit signals into the United States. Although these companies transmit content from other countries to U.S. cable headend systems, they do not earn revenue from U.S. sales; their revenues come from foreign content companies.⁸

In addition to C-band satellite operators, there are thousands of licensed earth stations receiving transmissions from C-band satellites.⁹ Under existing rules, space station operators are authorized to use all 500 MHz in the band.¹⁰ The C-band is bounded at the bottom of the band by the Citizens Broadband Radio Service (which occupies the 3.65-3.7 GHz band), and at the top by radio altimeters and wireless avionics intra-communications systems (which occupy the 4.2-4.4 GHz band).¹¹

B. FCC Rulemaking Proceeding

The FCC proposed in July of 2018 to transition some, or all, of the C-band from satellite use to terrestrial wireless broadband use.¹² In the FCC's Notice of Proposed Rulemaking, it requested comment on a variety of different ways of transitioning the band, including using a third-party "transition facilitator" to conduct a private sale of the spectrum.¹³ Many stakeholders commented in the proceeding, but two proposals have garnered significant comment in the FCC docket: a proposal from CBA and a proposal from the ACA Connects Coalition.¹⁴ The ACA Connects proposal consists of three elements that would make 370 MHz of C-band spectrum

⁶ Bloomberg, *SES SA Company Profile*, www.bloomberg.com/profile/company/SESG:FP (accessed Oct. 24, 2019); Intelsat Office Locations and Contact Information, www.intelsat.com/contact/locations/ (accessed Oct. 24, 2019); Telesat Global Headquarters, www.telesat.com/contact-us/global-headquarters (accessed Oct. 24, 2019).

⁷ Craft, *Eutelsat Company Profile*, craft.co/eutelsat (accessed Oct. 24, 2019).

⁸ These are ABS Global, Hispasat, Embratel Star One, and Empresa Argentina. *See Ex Parte* Letter from Scott Blake Harris, Counsel to the Small Satellite Operators, to Marlene H. Dortch, FCC Secretary (Dec. 18, 2018).

⁹ *C-band NPRM*, para. 172.

¹⁰ *Id.*

¹¹ *Id.* at para. 11.

¹² *See generally, id.*

¹³ *C-band NPRM*, para. 84.

¹⁴ The ACA Connects Coalition includes ACA Connects – America's Communications Association, Competitive Carriers Association, and Charter Communications and represents both incumbent C-band earth station users and wireless providers that seek to use this spectrum to provide 5G services. *See* Federal Communications Commission, Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics *Seek Focused Additional Comment in 3.7-4.2 GHz Band Proceeding*, Public Notice, GN Docket No. 18-122, RM-11791, RM-11778 (July 19, 2019) at 2.

available for flexible wireless use on a nationwide basis: (1) a Commission-driven public auction that would award new terrestrial licenses and assign obligations for transition costs; (2) a plan to transition certain Fixed Satellite Service earth station operators to wired fiber optic cable, and (3) a plan for satellite operators to repack remaining earth station users to the upper portion of the band.¹⁵ The ACA Connects Coalition proposed that there would be incentive payments to the licensees and a portion should go to the Treasury, but did not provide specifics on either count.¹⁶

The CBA originally proposed to clear up to 200 MHz of C-band spectrum, including 20 MHz for a guard band, and with the CBA acting a transition facilitator, selling up to 180 MHz through private, secondary market transactions within three years. CBA argues that “[e]xtensive FCC oversight of a Transition Facilitator would unnecessarily delay deployment of 5G services.”¹⁷ CBA’s proposal also provides that CBA would install, repair, or replace equipment necessary to effectuate the transition of earth station operators to a smaller portion of the C-band,¹⁸ and that CBA would make a “significant contribution to the U.S. Treasury.”¹⁹

On May 3, 2019, the FCC requested additional comment regarding the legal rights of space station operators and registered receive-only earth station operators.²⁰ On July 16, 2019, the Subcommittee held a hearing on spectrum at which CBA testified and where proposals to transition the C-band to terrestrial wireless services were discussed.²¹ On July 19, 2019, the

¹⁵ *Id.* T-Mobile proposed something similar, suggesting that 300 MHz could be made available in most areas, but the full 500 MHz could be freed up in some places and claimed that it would only cost \$1 – \$2 billion to build out fiber where needed.

¹⁶ *Ex Parte* Letter from Pantelis Michalopoulos, Counsel to ACA Connects Coalition, to Marlene Dortch, FCC Secretary (Jul. 9, 2019) at Slide 14.

¹⁷ *Comments of the C-Band Alliance*, GN Docket No. 18-122, GN Docket No. 17-183, RM-11791, RM-11778 (Oct. 29, 2018) at ii. AT&T proposed something similar but included a proposal to modify the current satellite licenses so that they can be resold and transferred without violating 309(j). *Comments of AT&T*, GN Docket No. 18-122, RM-11791, RM-11778 (Jul. 3, 2019), at 2. Verizon generally supports CBA’s proposal, arguing that it is still the fastest option to implement. *See Ex Parte* Letter from Gregory Romano, Senior Vice President, Verizon, to Marlene H. Dortch, FCC Secretary (Oct. 21, 2019).

¹⁸ *Ex Parte* Letter from Jennifer Hindin of Wiley Rein, Counsel to the C-Band Alliance, to FCC Secretary, Marlene H. Dortch (Oct. 7, 2019).

¹⁹ Peter Pitsch, Written Testimony before the House Subcommittee on Communications and Technology, *Hearing on Our Wireless Future: Building a Comprehensive Approach to Spectrum Policy* (Jul. 16, 2019).

²⁰ Federal Communications Commission, *International Bureau and Wireless Telecommunications Bureau Seek Focused Additional Comment in 3.7-4.2 GHz Band Proceeding*, Public Notice, GN Docket No. 18-122, RM-11791, RM-11778 (May 2, 2019), at 2.

²¹ Federal Communications Commission, *Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics Seek Focused Additional Comment in 3.7-4.2 GHz Band Proceeding*, Public Notice, GN Docket No. 18-122, RM-11791, RM-11778 (July 19, 2019).

FCC also sought additional comments on filings from the ACA Connects Coalition, AT&T, and WISPA, Google, and Microsoft.²²

C. Other Congressional Hearings

On October 17, 2019, the Senate Appropriations Committee held a hearing to discuss whether the FCC has the authority to allow of private sale of C-band spectrum, and why the FCC might allow it, even if the FCC does have that authority.²³ This hearing followed one month after Senate Appropriations Committee Report language encouraged the FCC to conduct a public C-band spectrum auction.²⁴ Chairman Pai has stated at that hearing that he expects to release an order disposing of C-band in “the fall,” and that until then, all options, including a private sale, are under consideration.²⁵

II. PROPOSED LEGISLATION

A. H.R. 4855, the Clearing Broad Airwaves for New Deployment Act (C-Band Act)

On October 24, 2019, Chairman Doyle (D-PA), along with Reps. Johnson (R-OH), Matsui (D-CA), and Gianforte (R-MT), introduced the C-Band Act, which would require the FCC to conduct a public auction of no less than 200 MHz and no more than 300 MHz of C-band spectrum by September 30, 2022. It would also protect C-band-dependent users by requiring that they continue to receive equal or better service throughout and after the transition process.

B. H.R. 4171, The Wireless Investment Now in 5G Act (WIN 5G Act)

On August 6, 2019, Rep. Matsui (D-CA) introduced the “WIN 5G Act”, which would require the FCC to conduct a public auction of up to 500 MHz of C-band spectrum using a transition facilitator, and that would provide incentive payments to the transition facilitator based on the amount of spectrum cleared.

²² *Id.*

²³ Senate Committee on Appropriations, *Hearing on Oversight of the FCC Spectrum Auctions Program*, 116th Cong. (Oct. 17, 2019).

²⁴ Senate Committee on Appropriations, Financial Services and General Government Appropriations Bill, 2020, 116th Cong. (2019) (S. Rept. 116-111) (“C-Band.--The Committee encourages the FCC to prioritize resources toward exploring opportunities for spectrum to help accelerate the deployment of 5G to rural communities. The mid-band spectrum, specifically the C-band, is particularly well-suited for 5G services. However, the Committee remains concerned by proposals that entail limited FCC oversight and public input, and by those lacking guarantees that taxpayers and the U.S. Treasury shall benefit from revenues generated by the sale of 5G licenses. The airwaves are a public resource, and the Federal Government has a responsibility to exercise appropriate oversight of its allocation. Therefore, the Committee encourages the FCC to conduct a public auction of the C-band spectrum that is fair, open, and transparent.”).

²⁵ Senate Committee on Appropriations, *Hearing on Oversight of the FCC Spectrum Auctions Program*, 116th Cong. (Oct. 17, 2019).

III. WITNESSES

The following witnesses have been invited to testify:

Phillip Berenbroick

Policy Director
Public Knowledge

Ross Lieberman

Senior Vice President
ACA Connects – America’s Communications Association

Deborah Collier

Director of Technology and Telecommunications Policy
Citizens Against Government Waste

James Frownfelter

Chairman and Chief Executive Officer
ABS

Jeff Campbell

Vice President, Government Affairs and Technology Policy
Cisco