

Testimony of
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Government
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My name is Thomas A. Schatz, and I am president of Citizens Against Government Waste (CAGW). CAGW was founded in 1984 by the late industrialist J. Peter Grace and nationally-syndicated columnist Jack Anderson to build support for implementation of President Ronald Reagan's Grace Commission recommendations and other waste-cutting proposals. Since its inception, CAGW has been at the forefront of the fight for efficiency, economy, and accountability in government. CAGW has more than one million members and supporters nationwide, and, over the past 35 years, the organization has helped save taxpayers \$1.3 trillion through the implementation of Grace Commission findings and other recommendations.

CAGW does not accept government funds. The organization's mission reflects the interests of taxpayers and covers a wide variety of issues, including technology and telecommunications. The sale of federal assets, including spectrum, has been part of CAGW's agenda for many years.

The October 25, 2018 Presidential Memorandum on Developing a Sustainable Spectrum Strategy for America's Future made it clear that access to spectrum is a critical component to maintaining America's lead in next generation technologies, particularly 5G network deployment.¹ The widespread use of wireless 5G will dramatically change mobile communications across the nation and lay the groundwork to support an increasing number of Internet of Things applications and devices. While 5G networks are currently being deployed using high-band millimeter wave and low-band spectrum, deployment of 5G using mid-band spectrum is essential. CAGW appreciates the Subcommittee on Financial Services and General Government and particularly Chairman Kennedy's leadership to ensure that taxpayers are protected throughout the process of determining how to make as much mid-band spectrum as possible available for this purpose.

Mid-band is considered the sweet spot of spectrum, with unique properties that make it especially effective for 5G infrastructure deployment. According to an August 2, 2017 Intel blog, "Mid-Band spectrum is especially well suited for mobile broadband due to its wide coverage, and potential for low latency, and high reliability."² Mid-band doesn't require several small cells to be located in a condensed area because data signals

¹ The White House, "Presidential Memorandum on Developing a Sustainable Spectrum Strategy for America's Future," October 25, 2018, <https://www.whitehouse.gov/presidential-actions/presidential-memorandum-developing-sustainable-spectrum-strategy-americas-future/>.

² Peter Pitsch, "5 Reason Why We Need Mid-Band Spectrum for 5G," Intel, August 2, 2017, <https://blogs.intel.com/policy/2017/08/02/5-reasons-need-mid-band-spectrum-5g/#gs.9d7mdu>.

can travel through a larger range in the spectrum; its wide channels also allow for high-speed data transfers.

The economic impact of mid-band spectrum utilization was examined in a February 2019 Analysis Group study, which found that reallocating 400 MHz of spectrum in the 3.45 to 4.2 GHz range for licensed mid-band spectrum would lead to \$154 billion in capital expenditures by wireless providers for 5G networks over seven years, add \$274 billion to U.S. GDP, and create 1.3 million new direct and indirect jobs.³

On July 12, 2018, the FCC adopted an Order and Notice of Proposed Rulemaking on Expanding Flexible Use of the 3.7 to 4.2 GHz Band (GN Docket No. 18-122) to review the potential for using this mid-band spectrum, also known as the c-band, for further 5G deployment.⁴ This 500 MHz swath of prime spectrum is currently used by satellite and video content providers for content distribution, and satellite phone service for those areas where existing landline or cellular capabilities are non-existent or unreliable.

However, c-band spectrum is underutilized. The satellite industry has indicated a willingness to vacate 200 MHz of the 500 MHz, but there is an ongoing debate over whether this is sufficient, as well as how the spectrum might be re-purposed and sold.

If c-band spectrum is sold through the normal FCC auction process with strong oversight, the proceeds would go to the taxpayers, incumbent users of the spectrum would be protected, and the spectrum would be used for 5G development and deployment. If it is sold through a private sale or auction conducted by a small group of satellite companies, there are questions about their ability to sell something they do not own; there is no guarantee taxpayers would see any of the revenues generated from the sale; incumbent users are not assured they will be made whole; and there would be limited FCC oversight. The government has a strong interest in making sure this process works like other auctions, because spectrum is unlike any other public asset in terms of its value and strategic importance for the future of the economy and national security.

Since 1994, the FCC has conducted 102 spectrum auctions, which have generated more than \$122 billion for taxpayers.⁵ An auction of c-band spectrum has the potential to add \$11 billion to \$60 billion to that total, depending on the amount of spectrum made available for sale and the amount of net proceeds available following reimbursement for the cost of vacating and reallocating the spectrum.⁶ Given this track record of success, it

³ David W. Sosa, Ph.D. and Greg Rafert, Ph.D., “The Economic Impacts of Reallocating Mid-Band Spectrum to 5G in the United States,” Analysis Group, <https://api.ctia.org/wp-content/uploads/2019/02/The-Economic-Impacts-of-Reallocating-Mid-Band-Spectrum-to-5G-1.pdf>.

⁴ Federal Communications Commission, “In the Matter of Expanding Flexible Use of the 3.7 to 4.2 GHz Band,” GN Docket No. 18-122, Order and Notice of Proposed Rulemaking, Adopted July 12, 2018, <https://docs.fcc.gov/public/attachments/FCC-18-91A1.pdf>.

⁵ Federal Communications Commission, “Auctions Summary: Completed Auctions,” July 17, 2019, <https://www.fcc.gov/auctions-summary>.

⁶ Deborah Collier and Thomas Schatz, “The Race to 5G: Protecting Taxpayers through Spectrum Auctions,” (“The Race to 5G”) Citizens Against Government Waste, April 2019, <https://www.cagw.org/reporting/race-to-5g>.

is difficult to see why any entity other than the FCC should be permitted to conduct the c-band spectrum auction.

There have been several proposals provided to the FCC on how best to utilize the c-band spectrum and sell portions of the spectrum for 5G. One suggestion is to use the incentive auction authorization provided by the Middle Class Tax Relief and Job Creation Act of 2012, which included provisions to increase the amount of spectrum available for mobile use by allocating additional federally held unused spectrum to be auctioned by the FCC.⁷ This law also provided authorization for the FCC to conduct the first reverse incentive auctions to make additional spectrum available to mobile providers, from which the proceeds are being used for nationwide deployment of FirstNet, a first responder communications network, and deficit reduction.

If this process was used for c-band, satellite owners and their customers would be reimbursed for vacating a certain amount of spectrum through a reverse auction, and then the FCC would repackage the vacated spectrum and sell it in a forward auction to mobile carriers. Another proposal would increase the amount of available spectrum to at least 370 MHz of spectrum by recommending that the net proceeds from an FCC conducted c-band auction are used to bring the content carried over satellite back to earth by building out fiber across the country to deliver the data between the broadcast stations.

The most widely-publicized and controversial proposal for mobile carriers to gain access to the c-band has been proposed by the C-Band Alliance (CBA), a consortium of satellite owners who have agreed to vacate their customers from the lower 200 MHz of c-band spectrum and sell this spectrum in the private market. In April 2019, CAGW published a report, “The Race to 5G: Protecting Taxpayers Through Spectrum Auctions.”⁸ I ask that the report be included along with my written testimony for the record.

One of the issues raised in CAGW’s report is whether the satellite companies have or can obtain the authority to sell something they do not own, but only have a license to use. In FCC auctions, the government is selling spectrum that it owns. In secondary market sales, companies that purchased spectrum licenses from the FCC may sell them to another company. Therefore, ownership is paramount to the ability to sell federal assets.

Rights to the c-band spectrum are more complicated than some respondents to the FCC’s notice of proposed rulemaking would make it seem. According to the International Telecommunication Union (ITU) Constitution, radio frequencies and satellite orbits are limited natural resources, and therefore must be used in a manner that will allow for equitable access.⁹ Globally, the ITU Radiocommunications Sector (ITU-

⁷ “H.R. 3630 (112th): Middle Class Tax Relief and Job Creation Act of 2012,” govtrack.us, February 22, 2012, <https://www.govtrack.us/congress/bills/112/hr3630>.

⁸ Collier and Schatz, “The Race to 5G.”

⁹ International Telecommunication Union, “Constitution of the International Telecommunication Union, Article 44, Use of the Radio-Frequency Spectrum and of the Geostationary-Satellite and Other Satellite Orbits,” <https://www.itu.int/council/pd/constitution.html>.

R) manages radio-frequency spectrum and satellite orbits to ensure a rational, equitable, efficient, and economical use of the radio-frequency spectrum of all radiocommunications systems, including those using satellite orbits.¹⁰

The c-band spectrum is governed by a “full-band, full-arc” policy which means that rather than users receiving and holding an ownership right to one specific frequency in the band, the FCC has given all users of the band equal access to the entire 500 MHz of spectrum within the band, allowing ground stations to point their satellite dishes in every direction toward every possible geosynchronous satellite.¹¹ Because incumbent users of the c-band spectrum have authorization to access the entire 500 MHz as part of the full-band, full-arc policy, individual corporate rights within the c-band are amorphous, but the government’s rights are clear.

Questions have also been raised about whether the lower 200 MHz of spectrum described in the CBA plan will be enough for 5G deployment. GSMA, which represents mobile operators around the world, recommends that regulators allocate at least 80-100 MHz of contiguous mid-band spectrum and around 1 GHz of millimeter wave bands (26/28 GHz) to each mobile operator.¹² China has already begun assigning a minimum 100 MHz to each of their mobile operators within the c-band.¹³ Based on one of the CBA’s submissions to the FCC, of the 200 MHz they plan to clear for mobile use, only 180 MHz would be available, due to the necessity of a 20 MHz guard band between the lower mobile portion of spectrum use and the upper satellite use. This means that only two carriers would have access to barely enough spectrum to deploy 5G networks in the mid-band using this spectrum, and if the spectrum was sold through a private sale or auction, the CBA would be placed in the untenable position of picking winners and losers in the U.S. marketplace.

The CBA’s second-price, sealed bid auction proposal is exceptionally complex and lacks transparency in how winning bids would be determined, creating uncertainty for mobile providers. The novelty of the CBA proposal would require additional time as bid evaluation metrics are developed and auditing and transparency protocols are created to ensure a fair bidding process. Potential bidders must also be educated on how such a sale would be conducted. Yet, the CBA claims its process would be more efficient and faster than an FCC auction.

Any delay in the sale of the spectrum is a luxury the U.S. government does not have in its race with China and other countries to deploy 5G. By contrast, the FCC-

¹⁰ International Telecommunications Union, “Welcome to ITU-R,” <https://www.itu.int/net/ITU-R/index.asp?category=information&rlink=itur-welcome%2525E2%25258C%2525A9=en>.

¹¹ Mitchell Lazarus, “Fixed Service versus Full-Band, Full-Arc Coordination,” National Spectrum Management Association, May 16, 2017, <https://nsma.org/wp-content/uploads/2017/05/2017-06-nsma-fixed-service-versus-full-band-full-arc-coordination.pdf>.

¹² GSMA, “5G Spectrum GSMA Public Policy Position,” July 2019, <https://www.gsma.com/spectrum/wp-content/uploads/2019/09/5G-Spectrum-Positions.pdf>.

¹³ Joseph Waring, “China releases 5G spectrum to state-run operators,” *Mobile World Live*, December 10, 2018, <https://www.mobileworldlive.com/asia/asia-news/china-releases-5g-spectrum-to-state-run-operators/>.

conducted public auction process is well-documented and administratively simple, encouraging a broad spectrum of bidders from a variety of incumbents, and new entrants.

A 2014 GSMA study reviewed the costs of re-allocating 400 MHz of c-band spectrum in Australia and Indonesia, noting that based on the number of providers in the area, this is optimal amount of spectrum that could be reused for mobile broadband purposes in the APEC area.¹⁴ This same amount of spectrum could provide four carriers in the U.S. with sufficient spectrum, keeping 100 MHz of spectrum available for satellite use.

Finally, there is a question about how the proceeds from any sale of the c-band spectrum would be allocated. Under the CBA proposal, the satellite owners would retain any profits achieved from the sale of the spectrum after expenses of reallocating, vacating, and repurposing the spectrum are deducted.

The deal is being called a “windfall” for the members of the CBA.¹⁵ Hedge fund Kerrisdale Capital Management estimated that a private sale would increase Intelsat’s value by 757 percent and SES’s value by 217 percent, and that the total value of the sale of the spectrum could be as much as \$60 billion.¹⁶ The CBA has offered a small “contribution” to the U.S. Treasury, but Eutelsat’s withdrawal leaves this in doubt.¹⁷

As CAGW noted in its April 19 report: “The C-Band Alliance has received commitments from its members to ‘undertake, manage, and complete all necessary actions to effectuate’ customer migration and has proposed covering the moving expenses of their satellite service customers with 120 percent of the costs of repacking them onto new satellites.¹⁸ However, this commitment only applies to members of the C-Band Alliance and provides little assurance to incumbents using other satellite providers that their video and audio content will continue to be delivered as expected.”¹⁹

During the July 12, 2018 FCC meeting, Commissioner Michael O’Rielly said, “any reallocation must fully protect the incumbent users that currently use the c-band to bring many services to consumers. ... That does not mean they all must be accommodated on remaining c-band spectrum, but their ability to offer services cannot be disrupted.”²⁰

¹⁴ “Economic assessment of C-band re-allocation,” Frontier Economics, January 2014, <https://www.gsma.com/spectrum/wp-content/uploads/2014/11/GSMA-Frontier-report-on-Economic-assessment-of-C-band-re-allocation-2014.pdf>.

¹⁵ Chris Forrester, “Satellite’s Multi-Billion Dollar Windfall,” *ibc.org*, October 10, 2018, <https://www.ibc.org/publish/satellites-multi-billion-dollar-windfall/3374.article>.

¹⁶ *Ibid.*

¹⁷ Caleb Henry, “Eutelsat leaves C-Band Alliance as spectrum decision looms,” *Space News*, September 3, 2019, <https://spacenews.com/eutelsat-leaves-c-band-alliance-as-spectrum-decision-looms/>.

¹⁸ Collier and Schatz, “The Race to 5G.”

¹⁹ John Eggerton, “C-Band Alliance Outlines Compensation for Repack,” *Multichannel*, April 3, 2019, <https://www.multichannel.com/news/c-band-alliance-outlines-compensation-for-repack>.

²⁰ Federal Communications Commission, “Statement of Commissioner Michael O’Reilly, Re: Expanding Flexible Use of the 3.7 to 4.2 GHz Band, GN Docket No. 18-122; Expanding Flexible Use in Mid-Band Spectrum Between

Due to the questions about property rights associated with this spectrum; the broad experience of the FCC in conducting public auctions; the obscure secondary market auction proposed by the CBA and its failure to assure the protection of all incumbents and users; and the lack of a guarantee that taxpayers will benefit from the sale or that the spectrum would be used for 5G in the CBA plan, CAGW believes that only an FCC-led public auction can provide the best and most objective outcome for all interested parties, including satellite operators, cable operators, broadcasters, and programmers. As FCC Commissioner Brendan Carr noted during the FCC’s April 12, 2019 meeting, the agency’s auction proceedings are “a model for the world.”²¹

Several senators and representatives support the FCC auction process for the c-band, including Sen. Steve Daines (R-Mont.) and Rep. Greg Gianforte (R-Mont.) who sent a letter to the FCC on July 25, 2019, urging the agency to conduct the assignment of 5G licenses in the c-band “through a traditional public process that offers transparency and equal opportunity.”²²

CAGW also appreciates Chairman Kennedy’s strong leadership on this issue. His efforts to support the public auction of this spectrum will provide transparency to taxpayers and prevent U.S.-owned spectrum from being sold on the private market. Such an auction will ensure the taxpayers’ interests are protected, and any proceeds above and beyond relocation costs and expenses should revert to the treasury. The chairman’s continued advocacy to ensure that auction proceeds are repurposed to help bridge the digital divide and give rural America access to the latest in telecommunications technology will also enhance and maintain the nation’s leadership in 5G.

Report language has been included in the fiscal year 2020 Senate Financial Services Appropriations Act that suggests only the FCC should conduct a public auction of the c-band spectrum: “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 contain no guarantee that taxpayers and the U.S. Treasury benefit from revenues generated by the sale of 5G licenses. The airwaves are a public resource, and the Federal Government has a responsibility to

3.7 and 24 GHz, GN Docket No. 17-183; Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission’s Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band, RM-11791; Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared Between the Fixed Service and the Fixed Satellite Service, RM-11778, July 13, 2018, <https://docs.fcc.gov/public/attachments/DOC-352520A3.pdf>.

²¹ Federal Communications Commission, “Statement of Commissioner Brendan Carr, Re: Incentive Auction of Upper Microwave Flexible-Use Service Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz for Next-Generation Wireless Services, AU Docket No. 19-59,” April 12, 2019, <https://docs.fcc.gov/public/attachments/DOC-356984A3.pdf>.

²² Sen. Steve Daines (R-Mont.) and Rep. Greg Gianforte (R-Mont.), “Letter to FCC Chairman Ajit Pai,” July 25, 2019, <https://www.ccagw.org/sites/default/files/Gianforte%20Daines%20FCC%20C-Band%20Letter%202019.07.25.pdf>.

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.”²³

CAGW agrees with this report language, which sends a strong message to the FCC that the airwaves are a public resource and any sale of c-band spectrum should be conducted through an FCC public auction to protect the taxpayers’ interests.

I would like to thank the subcommittee and in particular Chairman Kennedy for your efforts to ensure that as much spectrum as possible is made available for 5G and other mobile and Wi-Fi uses, and the proceeds from the sale of any publicly-held spectrum benefits taxpayers, the economy, and U.S. global technological leadership. I appreciate you inviting me to testify and I am prepared to answer any questions you may have.

²³ Senate Committee on Appropriations, “Financial Services and General Government Appropriations Bill, 2020,” September 19, 2019, <https://www.appropriations.senate.gov/imo/media/doc/FY2020%20FSGG%20Appropriations%20Act,%20Report%20116-111.pdf>.