THE IMPLICATIONS OF THE NATIONAL DEFENSE AUTHORIZATION ACT OF 2000 SECTION 1062(B) ON SPECTRUM RELOCATION AND WIRELESS BROADBAND GROWTH

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* This note would not have been possible but for many people. First, Peter Tenhula allowed me to research and work on this subject while interning at NTIA in the summer of 2013. Second, Phil Weiser and Dale Hatfield provided suggestions and encouragement while I was writing. Third, Sara Morris, Director of Legislative Affairs at the FCC, allowed me to attend meetings related to the temporary resolution of this issue while interning at NTIA and the FCC.

I. WHY SECTION 1062(B) OF THE NATIONAL DEFENSE AUTHORIZATION ACT OF 2000 SHOULD BE REPEALED AS IT RELATES TO THE MATSUI-GUTHRIE EFFICIENT GOVERNMENT USE OF SPECTRUM ACT OF 2013

What happens when one government agency refuses a request from another government agency, even though both are relying on their decision-making authority from the same statute? When we think about our three branches of government, the Constitution generally provides guidance regarding when and how a particular branch may act. For example, Article II of the Constitution applies when the President asks Congress to take some action.[1] However, there are no clear guidelines when the dispute involves Congress, the Federal Communications Commission ("FCC"), the National Telecommunications and Information Administration ("NTIA"), and the Department of Defense ("DOD"), which were at the heart of the controversy surrounding the Matsui-Guthrie Efficient Use of Spectrum Act of 2013 ("the Act"). In this situation and in future similar ones, who prevails and for what policy reasons? This article will propose two normative solutions.

Wireless communications from a cell phone or a laptop's Wi-Fi use electromagnetic spectrum to communicate with other devices at certain frequencies.[2] Companies like AT&T and agencies like DOD have reserved parts of the spectrum for their exclusive use, such as for LTE wireless data services or radar for military planes.[3] The FCC assigns and regulates spectrum for private users, while the NTIA regulates federal government users like the DOD. Spectrum is important because it enables many critical communication tools, including broadcast TV and wireless broadband data services. The latter is why wireless companies are willing to pay billions of dollars for key portions of spectrum and represents one of the few growth areas of the economy over the past decade. Policies that impede uses

1. U.S. CONST. art. II, § 3.

2. Margaret Reardon, *Wireless Spectrum: What It Is, and Why You Should Care,* CNET (Aug. 13, 2012, 12:01 AM), http://www.cnet.com/news/wireless-spectrum-what-it-is-and-why-you-should-care.

3. *Id.*

of the highest value spectrum could have a demonstrably negative effect on the US economy and technological innovation.

The Act commands the FCC to auction off the 1755-1780 MHz band of spectrum by late 2014.[4] The FCC, as of this writing, is successfully auctioning off the spectrum—after the military agreed to share and clear out of the band—garnering $43 billion in bidding after ninety-two rounds.[5]

The Act also requires the NTIA to clear government users off the band.[6] However, this raises serious problems because the military has significant spectrum operations in that band for aircraft and other military purposes.[7] Normally, it is the role of the NTIA—within the Department of Commerce—to manage federal government users of spectrum, including the military, and thus it should be able to clear out the band so the FCC can auction it off.[8] However, it lacks a mechanism to effectively control these users,[9] unlike the FCC, which can impose conditions on private industry licensees for the public good or just simply revoke their licenses.[10] In this case, it seems the steady drumbeat of the wireless industry, Congress, and the FCC pressured DOD into clearing the spectrum for auction.

Further complicating matters is that the Act includes a reference to section 1062(b) of the National Defense Authorization Act of 2000 ("NDAA").[11] Section 1062(b) states that in order for DOD spectrum operations to move off a certain band, a variety of government leaders must certify that DOD operations will not be impaired by moving off the spectrum band and that adequate alternative relocation spectrum is made available if necessary.[12] This

4. Press Release, U.S. H.R. Energy & Commerce Comm., Committee Approves Bipartisan FCC Process Reform and Federal Spectrum Incentive Act (Dec. 11, 2013), *available at* https://energycommerce.house.gov/press-release/committee-approves-bipartisan-fcc-process-reform-and-federal-spectrum-incentive-act.

5. Phil Goldstein, *AWS-3 Auction Inches On, With Bids Passing $43.7B*, FIERCE WIRELESS (Dec. 15, 2014), http://www.fiercewireless.com/story/aws-3-auction-inches-bids-passing-437b/2014-12-15.

6. Press Release, Rep. Doris Matsui, U.S. H.R., Reps. Matsui, Guthrie, Smith, and Hunter Introduce Bipartisan Spectrum Legislation (July 18, 2013), *available at* http://matsui.house.gov/press-releases/reps-matsui-guthrie-smith-and-hunter-introduce-bipartisan-spectrum-legislation.

7. *Id.*

8. *Id.*

9. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-342SP, OPPORTUNITIES TO REDUCE DUPLICATION, OVERLAP AND FRAGMENTATION, ACHIEVE SAVINGS, AND ENHANCE REVENUE 90 (2012), *available at* http://www.gao.gov/assets/590/588818.pdf.

10. *FCC Auctions*, FED. COMMC'NS COMM'N, http://wireless.fcc.gov/auctions/default.htm?job=auctions_home (last visited Feb. 2, 2015).

11. H.R. 2739, 113th Cong. (2013).

12. National Defense Authorization Act for Fiscal Year 2000, Pub. L. No. 106-65 113

provision strongly implies that the DOD would prefer not to give up their spectrum holdings.

Section 1062(b) has many crucial terms that are undefined in the statute.[13] While tools of statutory interpretation, such as examining the legislative history, usually help in situations involving statutory ambiguity, this provision was inserted during conference, meaning no Representative or Senator introduced the provision, argued for it, nor debated it with colleagues in the Congressional Record.[14] Thus, section 1062(b) has no commonly accepted meaning as to its intent or definition of its key words. This creates a problem for implementing the Act if it becomes law and for future spectrum relocation legislation.

Section 1062(b) of the NDAA, as it affects the Act and future military spectrum relocation legislation, should be repealed because it impairs the spectrum reallocation efforts of the FCC and NTIA. Future spectrum relocation legislation should be amended to supersede 1062(b) of the NDAA. However, this may not be a practical solution given the formidable lobbying power of DOD and the defense industry.[15] The AWS-3 working group process that led to a workaround solution for the band is far too costly in terms of time and resources to be a permanent solution for future spectrum auctions. To improve spectrum reallocation efforts in the 1755-1780 MHz band, this note recommends two more-feasible solutions.

First, Congress should consider enacting legislation that creates a neutral quasi-governmental group made up of engineering experts at the National Academy of Sciences to handle spectrum reallocation decisions involving military spectrum that only Congress could override. Second, section 1062(b) of the NDAA should be interpreted to promote good faith in negotiating among the government entities involved and not impair critical military functions, because it will provide revenue and economic growth, unleash technological innovation, and help facilitate public-private spectrum sharing.

This note should be viewed as a resource when evaluating legislative solutions to what some spectrum experts refer to as an inevitable "spectrum crunch" problem: to make room for innovative wireless broadband services in a spectrum-scarce world, government users must be relocated or forced to share spectrum with private industry. To put section 1062(b) and its implications for the Act and future spectrum relocation legislation in proper context,

Stat. 768 (1999).

13. *Id*.

14. *See* S. REP. NO. 106-50 (1999) [hereinafter S. REP.].

15. Martha Minow, *Outsourcing Power: How Privatizing Military Efforts Challenges Accountability, Professionalism, and Democracy*, 46 B.C. L. REV. 989, 1022 (2005).

Section II begins with a brief overview of how the NTIA and FCC regulate spectrum, how Congress and the President are involved, and how trade associations play an important role as well. Section III discusses the effect section 1062(b)'s provision in the Act has on solving the looming spectrum crunch. Finally, Section IV argues for the repeal of 1062(b), and the appointment of a group of experts to decide spectrum relocation efforts so as to avoid intra-government gridlock, promote wireless broadband development, and sustain critical military spectrum operations.

II. A BRIEF PRIMER ON SPECTRUM REGULATION

A. How the FCC and the NTIA Regulate Spectrum

Wireless spectrum is regulated by two agencies: the NTIA and the FCC.[16] The FCC regulates all private users of spectrum and state/local government users, while the NTIA regulates federal government users.[17] When a private user, such as AT&T, bids successfully for spectrum, it has won a license to operate in that band of spectrum for ten years, according to service rules set by the FCC.[18] Similarly, the NTIA assigns frequencies and allocates spectrum for federal government use (like by the Department of Justice for wireless video surveillance) according to specifications requested by the government user.[19] Interestingly, unlike private users under FCC regulation, federal government users of spectrum do not have to justify their use of the spectrum through common mechanisms private users face, like paying for the license to use spectrum or build out requirements. Many policy papers and reports on spectrum, like the National Broadband Plan created by the FCC and the President's Council of Advisors on Science and Technology's 2012 report, explore strategies for encouraging federal government users of spectrum to internalize the cost of their current spectrum, but none has gained any traction in Congress or with the NTIA.[20]

16. *Spectrum Management*, NAT'L TELECOMMS & INFO. ADMIN., http://www.ntia.doc.gov/category/spectrum-management (last visited September 27, 2014) [hereinafter *Spectrum Management*].

17. *Id.*

18. *Licensing*, FED. COMMC'NS COMM'N, http://www.fcc.gov/encyclopedia/licensing (last visited Feb. 3, 2015).

19. *Spectrum Management*, *supra* note 16.

20. *See* PRESIDENT'S COUNCIL OF ADVISORS ON SCI. & AND TECH., EXEC. OFFICE OF THE PRESIDENT, REALIZING THE FULL POTENTIAL OF GOVERNMENT-HELD SPECTRUM TO SPUR ECONOMIC GROWTH 49, 79 (2012), *available at* http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf [hereinafter PRESIDENT'S COUNCIL].

B. The Role of Congress in Regulating Spectrum

Congress routinely requests testimony from leaders of the FCC, the NTIA, and the industry trade associations when its Senate Commerce Committee or the House Energy and Commerce Subcommittee on Communications and Technology is contemplating introducing a bill regarding spectrum and wireless broadband development.[21] This is due in large part to frequent calls for opening up more spectrum for wireless broadband from industry trade associations (which can lobby members of Congress)[22] and the last two presidential administrations stating ambitious goals for wireless broadband development by freeing up spectrum.[23] Even when no legislation is involved, Congress has tried to influence the process of freeing up spectrum from government users to be put up for auction for private users by calling for monthly (starting in June 2013 and ending in June 2014), closed-door meetings (consisting of committee members, staff, and spectrum representatives of the FCC, the NTIA, and DOD) to hash out these issues.[24]

Importantly, Representative Doris Matsui and Representative Brett Guthrie introduced, in 2012 and 2013, nearly identical legislation that would force federal spectrum users in the 1755-1780 MHz band to vacate in order for the FCC to auction it off for wireless broadband service in the private sector.[25] The 2012 legislation was pulled at the last minute and never came up for a committee or full House vote.[26] The 2013 legislation is identical to the 2012 legislation, except it has different bipartisan sponsors and it includes a reference

21. Press Release, House Subcomm. on Commc'ns & and Tech., Keeping the New Broadband Spectrum Law on Track (Dec. 12, 2012), *available at* http://energycommerce.house.gov/hearing/keeping-new-broadband-spectrum-law-track.

22. John Eggerton, *CTIA Calls on President to Light Fire Under Government Spectrum Reclamation*, BROADCASTING & CABLE (May 14, 2012, 5:03 PM), http://www.broadcastingcable.com/news/washington/ctia-calls-president-light-fire-under-government-spectrum-reclamation/60149?rssid=20068.

23. Press Release, Office of the President, Expanding America's Leadership in Wireless Innovation (June 14, 2013), *available at* http://www.whitehouse.gov/the-press-office/2013/06/14/presidential-memorandum-expanding-americas-leadership-wireless-innovation.

24. Press Release, House Subcomm. on Commc'ns & and Tech., Communications and Technology Subcommittee Discusses Pub. and Private Sector Spectrum Allocation (June 27, 2013), *available at* http://energycommerce.house.gov/press-release/communications-and-technology-subcommittee-discusses-public-and-private-sector-spectrum-allocation.

25. Press Release, Vote Smart, Stearns and Matsui Introduce the Efficient Use of Government Spectrum Act of 2012, (April 26, 2012), *available at* http://votesmart.org/public-statement/688116/stearns-and-matsui-introduce-the-efficient-use-of-government-spectrum-act-of-2012#.UvVbL0JdUp8.

26. H.R. 4817, 112th Cong. (2012).

to section 1062(b) of the NDAA 2000, mentioned above, in reference to relocating military spectrum users.[27] This provision is the crux of this note and its serious implications will be discussed in a later section.

C. The Role of Wireless and Defense Industry Associations in Regulating Spectrum

The final players in spectrum regulation are the industry trade associations. For purposes of this note, there are only two industries of concern: (1) wireless service providers and (2) defense contractors. Both the wireless and defense contractor industries have vested interests in having spectrum policies written in their favor. Without friendly legislators and legislation, both industries could see a contraction of current or future profits.[28] For example, if the FCC cannot free up enough new spectrum for auction, wireless companies cannot deploy faster and more advanced wireless technologies like 4G for higher prices without eliminating existing uses of their spectrum like 3G.[29] Similarly, if the military is kicked off of certain spectrum bands, that may mean fewer contracts for defense contractors putting radar or wireless video transmission systems in fighter jets. Thus, both industries heavily lobby Congress, the FCC, and the NTIA to achieve their policy goals for their business lines. As this note will discuss, the Matsui-Guthrie Spectrum Act can be likened to a butting-of-the-heads from the wireless and defense contractor special-interest groups. The wireless industry gets the 1755-1780 MHz band vacated and put up for auction while the defense industry gets a provision that could possibly prevent anyone from forcing the military to vacate their spectrum holdings. Their support or obstruction is key not only to the bill's passage, but also to future spectrum auctions and how contentious future spectrum management implementations will be.

D. The Looming Spectrum Crunch Caused by FCC and NTIA

The wireless industry is running out of available spectrum for high-value consumer services like wireless broadband.[30] The FCC

27. *FCC Auctions*, *supra* note 10.

28. S. REP., *supra* note 14.

29. Dawinderpal Sahota, *Ofcom approves 2G and 3G spectrum refarming*, TELECOMS.COM (July 11, 2013, 12:45 PM), http://www.telecoms.com/161582/ofcom-approves-2g-and-3g-spectrum-refarming/.

30. David Goldman, *Sorry America, Your Wireless Airwaves Are Full*, CNN MONEY (Feb. 11, 2012, 5:30 PM), http://money.cnn.com/2012/02/21/technology/spectrum_crunch/index.htm?iid=SF_T_Lead.

has traditionally allocated spectrum band-by-band, service-by-service, often at the request of someone wanting to provide that service.[31] This ad-hoc approach has resulted in certain bands being locked into certain uses regardless of whether it is the highest value use, such as broadcast television stations (regarded by some as increasingly irrelevant in a cable/internet/satellite world) using spectrum that has ideal propagation characteristics for higher value services like wireless broadband.[32] Furthermore, even if a wireless broadband provider like AT&T were to acquire spectrum held by TV broadcasters, it is still bound by the service rules for that band. AT&T would have to petition the FCC for a waiver for that band's service rules to provide wireless broadband services. Given the expense, time, and unlikely outcome due to TV broadcaster opposition lobbying and potential harmful interference for two different spectrum users side-by-side, this is not a viable solution. Thus, barring a sea change in FCC service rules for existing bands of spectrum, new spectrum is needed for new technologies and services within wireless broadband. Initiatives to mitigate these very problems are suggested by the National Broadband Plan and at least one, an incentive auction, will be conducted in early 2015. An incentive auction would pay broadcasters to relinquish their spectrum holdings in order to auction it off to wireless broadband providers.[33] As various players like broadcasters and wireless companies seek to influence this auction, time will tell as to whether broadcasters will relinquish spectrum, and whether wireless companies will show up to bid for the newly available bands of spectrum.

Similarly, the NTIA and its predecessors have allocated spectrum to federal government users for several decades.[34] However, unlike the FCC, which can revoke a user's license for spectrum use, the NTIA historically does not revoke, say, the military's spectrum assignment nor can it make the government user account for or justify its use or the size of its spectrum holdings.[35] Thus over time, the federal government has accumulated an appreciable amount of spectrum, although the actual percentage

31. *See* NAT'L TELECOMMS. AND INFO. ADMIN., U.S. FREQUENCY ALLOCATIONS, *available at* http://www.ntia.doc.gov/files/ntia/publications/2003-allochrt.pdf [hereinafter FREQUENCY ALLOCATIONS].

32. Phil Goldstein, *FCC Pushing 600 MHz Broadcast Incentive auction to Mid-2015*, FIERCE WIRELESS (Dec. 6, 2013), http://www.fiercewireless.com/story/fcc-pushing-600-mhz-broadcast-incentive-auction-mid-2015/2013-12-06.

33. FREQUENCY ALLOCATIONS, *supra* note 31.

34. Minow, *supra* note 15.

35. *See* PRESIDENT'S COUNCIL, *supra* note 20, at 8.

figure is disputed because the database of federal government spectrum usage is partially classified for national security reasons.[36]

Furthermore, many government users like DOD are resistant to potential solutions that involve freeing up their spectrum to share with private users.[37] Additionally, government users of spectrum have made ad hoc requests (disorganized one-by-one requests with no overarching plan) for spectrum allocations that satisfy divisions within a government entity, rather than a systematic spectrum plan (with a stated policy, like letting spectrum licenses flow to highest value uses) that would be easier to modify.[38]

E. The Obama Administration's Spectrum Goals

Overall, the confluence of growing demands for wireless broadband services, FCC allocation policies, and the difficulty in getting federal government users to efficiently use spectrum is causing a looming spectrum shortage. President Obama, Congress, and spectrum regulators all acknowledge that this is a critical problem.[39] The Obama administration, much like the Bush administration, has called for 500 MHz of spectrum to be freed up for wireless broadband use, whether through technical innovation or relocating it through administrative procedures, via the FCC and the NTIA. Congress, the FCC, and the NTIA have identified the 1755-1780 MHz band as a prime band of spectrum to be reallocated, but it is only a small piece of the 500 MHz to be found for wireless broadband. Given that the wireless sector has been one of the few growth industries in the past decade for the US economy, freeing up more spectrum has been thought of as a simple way to create more technology innovation, faster mobile broadband, and more jobs.

Congress has taken on the most critical role in achieving the Obama administration's goals by actually advancing legislation that helps to free up additional spectrum.[40] For example, in 2012 Congress passed the Middle Class Tax Relief and Jobs Act, which allowed the FCC to conduct incentive auctions that will take place

36. Larry Irving, *Freeing Government Airwaves for Commercial Wireless Requires Much More—Now*, FIERCE WIRELESS (Aug. 5, 2013), http://www.fiercewireless.com/story/irving-freeing-government-airwaves-commercial-wireless-requires-much-more-n/2013-08-05.

37. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-13-7, INCENTIVES, OPPORTUNITIES, AND TESTING NEEDED TO ENHANCE SPECTRUM SHARING 1, 12 (2012).

38. *See Spectrum Management*, *supra* note 16, at 2.

39. *Id.*

40. Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96,126 Stat. 202.

sometime in 2015 or 2016.[41] An incentive auction in this case involves incentivizing TV broadcasters to name their price for the government to pay for their spectrum licenses in order for the government to turn around and auction them off to the highest bidder: wireless companies.

Congress may have to be the leader in freeing up additional spectrum until technical, engineering, and software breakthroughs create the ultimate solution of on-demand spectrum markets, which is a solution outside the scope of this note. These on-demand spectrum markets would use advanced technology like cognitive radios to "sniff out" unused spectrum along various aspects of time, location, direction, etc. to more efficiently price and auction off spectrum. However, these solutions are not close to being market ready. Thus, administrative decisions, like the ones proposed in Section IV of this note, will continue to guide solutions to the problem of scarce spectrum.

Unfortunately, it is not possible for wireless broadband providers to simply "refarm" their existing spectrum, replacing old technologies with new ones, due to business and technical considerations.[42] First, much like how parts of the population still use dial-up modems to access the internet, some consumers still use second- and third-generation wireless data services.[43] Wireless providers cannot cannibalize existing business. Second, the engineering aspects of newer wireless technologies like 4G and LTE may not fit into previous spectrum allocations designed for older services.[44] LTE is more spectrally efficient, in that it uses less MHz on a spectrum channel, but LTE may leave valuable spectrum unusable for a user's other spectrum operations.[45]

Another potential solution is to allow spectrum licenses to flow to their highest value use.[46] For example, some of the best "beachfront" spectrum for wireless broadband is currently being

41. *Id.*

42. *Refarming of Spectrum Resources*, ICT REG. TOOLKIT, http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/2320 (last visited Jan. 31, 2015).

43. Katie Collins, *4 Million Still Use 2G Phones as 4G Prepares to Launch in UK*, CNET (Oct. 16, 2012, 5:41 PM), http://crave.cnet.co.uk/mobiles/4-million-still-use-2g-phones-as-4g-prepares-to-launch-in-uk-50009498.

44. Kevin Fitchard, *AT&T Begins Cannibalizing its 2G and 3G Networks to Boost LTE Capacity*, GIGAOM (Nov. 7, 2013, 4:53 PM), http://gigaom.com/2013/11/07/att-begins-cannibalizing-its-2g-and-3g-networks-to-boost-lte-capacity.

45. *Id*.

46. *See* COLEMAN BAZELON & GIULIA MCHENRY, SPECTRUM VALUE 9-11 (The Res. Conf. on Comm., Info. & Internet Pol'y ed., 2012), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2032213.

used by broadcast television and is locked into that particular use, which is considered to be a low value in a cable, satellite, and IP TV world.[47] This is the problem that the incentive auction for broadcasters is trying to solve by allowing broadcasters to sell their spectrum to users that value it more. However, in order to do something similar for each spectrum band, it would require a separate piece of legislation or a change in rules by the FCC, two auctions (a reverse auction followed by a forward auction), and an industry that desires the spectrum. This is a cumbersome approach that involves both Congress and the FCC, and cannot be replicated frequently.

Of more importance to this note and the topic of the next section, Representative Matsui and Representative Stearns have introduced the Efficient Government Use of Spectrum Act, which auctions off the 1755-1780 MHz band for the highest bidder, wireless broadband providers, to deploy advanced wireless services.[48] The Act was ultimately not needed, as the NTIA, FCC, and DOD were able to come to a solution that allowed the spectrum to be auctioned off in late 2014 and early 2015, as of this writing.

III. THE MATSUI-GUTHRIE EFFICIENT GOVERNMENT USE OF SPECTRUM ACT OF 2013

Representatives Matsui and Guthrie introduced the Efficient Government Use of Spectrum Act on July 18, 2013.[49] The 1755-1780 MHz band has long been a target for the wireless industry to be auctioned off.[50] It has ideal characteristics for wireless broadband services (It can penetrate walls, so consumers can use data services indoors). Furthermore, CTIA—the Wireless Association claims that pairing the 1755-1780 MHz band is with the 2155-2180 MHz band will harmonize the U.S. with similar spectrum allocations in the other G20 countries around the world, yielding efficiency benefits.[51]

The legislation was introduced in part due to the wireless industry's frustration with how long it is taking the Commerce Spectrum Management Advisory Committee (CSMAC) to work with

47. Neal Gompa, *FCC to Review the Relative Value of Low, High, and Super-High Spectrum Licenses*, EXTREME TECH (Aug. 31, 2012. 1:27 PM), http://www.extremetech.com/electronics/135360-fcc-to-review-the-relative-value-of-low-high-and-super-high-spectrum-licenses.

48. *See* Press Release, Energy & Com. Comm., *supra* note 4.

49. *Id.*

50. *Statement from the CTIA on the Introduction of Matsui-Guthrie 1755-1780 MHz Spectrum Bill*, CTIA (July 18, 2013), http://blog.ctia.org/2013/07/18/matsui-guthrie-1755-1780-spectrum-bill.

51. *Id.*

DOD and other government users to study the feasibility of vacating military users of spectrum off the band or sharing with private users.[52] CSMAC is made up of various government and private industry representatives, in their individual expertise and capacity, to advise NTIA on spectrum issues.[53] The group has studied the issues surrounding transitioning the 1755-1780 MHz band to commercial spectrum use, but the end product has been a set of delayed and contentious recommendations that do not have any binding effect on the NTIA, DOD, or the FCC.[54]

A. The Structure of the Act

The Act states that by 2015, the 1755-1780 MHz band must be reallocated for commercial use by way of an auction conducted by the FCC.[55] The proceeds from the auction are to be deposited consistent with the standards set by the 2012 Middle Class Tax Relief and Jobs Act.[56] These standards include $7 billion for FirstNet, an independent authority under the NTIA that provides a nationwide dedicated high-speed network for emergency first responders. Excess funds will go towards deficit reduction.

B. Section 1062(b)'s Inclusion in the Act

However, the 2013 Act, unlike its 2012 predecessor, includes a reference to section 1062(b) of the National Defense Authorization Act for fiscal year 2000. This section bifurcates how government users of spectrum will be relocated from 1755-1780.[57] Non-DOD spectrum users in the band are relocated according to section 113(g)(6) of the National Telecommunications and Information Administration Organization Act.[58] DOD spectrum stations are to be relocated according to section 1062(b) of the NDAA 2000.[59]

This is important to note because the two relocation procedures are very different. For military users, the relevant portion of section

52. *See* U.S. DEPT. OF COMMERCE, COMMERCE SPECTRUM MGMT. ADVISORY COMM. [CSMAC], MEETING MINUTES: JULY 24, 2013, *available at* http://www.ntia.doc.gov/files/ntia/meetings/07242013_doc_csmac_508.pdf.

53. *CSMAC*, NAT'L TELECOMMS. & INFO. ADMIN. [NTIA], http://www.ntia.doc.gov/category/csmac (last visited Feb. 1, 2015).

54. *See* U.S. DEPT. OF COM., CSMAC, WORKING GROUP 2: 1755-1850 MHZ LAW ENFORCEMENT SURVEILLANCE, EXPLOSIVE ORDNANCE DISPOSAL, AND OTHER SHORT DISTANCE LINKS (2013), *available at* http://www.ntia.doc.gov/files/ntia/publications/csmac_wg-2_final_report_jan-4-2012.pdf.

55. Press Release, Energy & Com. Comm., *supra* note 4.

56. *Id.*

57. *Id.*

58. *Id.*

59. *Id.*

1062(b) that governs relocation of their systems is as follows:

> In general—If, in order to make available for other use a band of frequencies of which it is a primary user, the Department of Defense is required to surrender use of such band of frequencies, the Department shall not surrender use of such band of frequencies until—
>
> (A) the National Telecommunications and Information Administration, in consultation with the Federal Communications Commission, identifies and makes available to the Department for its primary use, if necessary, an alternative band or bands of frequencies as a replacement for the band to be so surrendered and
>
> (B) the Secretary of Commerce, the Secretary of Defense, and the Chairman of the Joint Chiefs of Staff jointly certify to the Committee on Armed Services and the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Armed Services and the Committee on Commerce of the House of Representatives, that such alternative band or bands provides comparable technical characteristics to restore essential military capability that will be lost as a result of the band of frequencies to be so surrendered.[60]

C. The Implications of the Act and its Problems

In terms of freeing up more spectrum for wireless broadband, this provision is problematic for future spectrum allocation discussions. First, this provision does not have any defined terms.[61] Second, this provision did not appear in the NDAA 2000 until conference, so no representative or senator introduced, advocated, or debated the provision to define its intent or the terms.[62] Third, this is the first time this provision has been inserted into legislation since the NDAA 2000. Representative Matsui's 2012 legislation on this same subject did not reference section 1062(b) of NDAA 2000.[63]

Regardless of Representative Matsui's 2013 Spectrum Act not passing through Congress, there are greater implications in this section 1062(b) provision for future efforts to free up spectrum by vacating bands occupied by the military. Many military uses of

60. National Defense Authorization Act For Fiscal Year 2000, Pub. L. No. 106-65, § 1062(b)(1)(A)-(B) 113 Stat. 768 (1999).

61. *Id.*

62. *Id*.

63. H.R. 4817, 112th112th Cong. (2012).

spectrum are mission-specific and require enormous upfront investment.[64] Radar systems in fighter jets cannot simply be swapped out to operate on a different spectrum frequency.[65] The logistics of shifting military operations could be complex, and the costs significant. Mission-critical operations could be impaired for training operations in the U.S.[66] Finally, many spectrum requests come from individual units within DOD, rather than from DOD leadership. This prevents a systematic spectrum plan for future assignments as well as modifying existing ones due to reallocation needs for private users.

There are also numerous implications for commercial wireless broadband providers if government users of spectrum, specifically DOD, could never be moved off their spectrum due to this provision. First, prime spectrum could be allocated to less than its highest-value use if government users can hold on to what could be the ideal spectrum to deploy for the next iteration of 4G or LTE wireless broadband. Second, military users of spectrum often have heightened restrictions around potential interference with their operations. If military users occupy spectrum near private users, the preclusive effect could leave a lot of unusable spectrum as unnecessary guard bands. Third, it could frustrate investment in wireless broadband networks, meaning less advanced services for consumers, less potential for jobs and revenues for wireless providers, and less opportunity for rural consumers to get wireline-equivalent broadband speed through the alternative mechanism of wireless.

On the other hand, as national security increasingly relies on drones and other advanced technologies that require priority use of spectrum, DOD's needs could be seen as more important than those of civilian mobile broadband. DOD proponents could argue that the wireless industry could re-farm existing spectrum or make their technology more spectrally efficient.

Procedurally, section 1062(b) is problematic, even if all parties involved approach it in good faith. Three people, (1) the Secretary of

64. Stew Magnuson, *Military Expected To Share Airwaves As Wireless Market Explodes*, NAT'L. DEF. MAG. (Jan. 2011), http://www.nationaldefensemagazine.org/archive/2011/January/Pages/MilitaryExpectedToShareAirwaves.aspx.

65. Lawrence E. Strickling & Tom Power, *Supporting Innovative Approaches to Spectrum Sharing*, NTIA (Mar. 11, 2013), http://www.ntia.doc.gov/blog/2013/supporting-innovative-approaches-spectrum-sharing.

66. Ryan Knutson, *Pentagon Offers Compromise on Spectrum Sought by Wireless Carriers*, WALL ST. J. (July 22, 2013, 10:27 PM), *available at* http://www.wsj.com/articles/SB10001424127887323829104578622610492673332.

Commerce, (2) the Secretary of Defense, and (3) the Chairman of the Joint Chiefs of Staff, must certify to the committees in the House and Senate that the alternate spectrum is comparable for military operations.[67] The latter two are likely to be biased towards military operations, meaning it is unlikely that spectrum will be relocated should the Act pass. Thus, I argue that the Act should be amended to repeal section 1062(b) of the NDAA 2000 or a more neutral process should be put in place to decide spectrum relocation efforts.

The total amount of military spectrum holdings is classified,[68] but one can guess that it leaves a significant amount off the table for commercial broadband deployment. Until we reach a state where administrative decisions about spectrum are irrelevant due to technology and software doing the job more accurately, safely, and efficiently, this provision could hinder a growth industry that provides innovation, useful services, and jobs for a growing proportion of Americans.

Implications aside, this provision is also problematic because so many of the procedural aspects are undefined. Statutory interpretation, should the legislation be litigated, would be complex. The NDAA 2000 offers no clues to the meanings of the terms and the conference report is no help either, as they simply mention that 1062(b) was added during conference.[69] The following is a list of undefined terms that would factor into the NTIA's abilities to vacate DOD off the spectrum for auction:

What does it mean for the military to have "primary use" of a certain band of spectrum? "Primary" could be interpreted to mean majority (50.1%) or greater. It could also be interpreted by historical primacy, as in, who was there first? Finally, there could be some other vague DOD-designated definition of "primary" to indicate importance by function or national security.

What does it mean to "surrender" a band of spectrum? "Surrender" could be interpreted to mean relinquishing all operations and bands. It could also be interpreted to include sharing spectrum with other users or not having first priority in a sharing context. The interpretation of this word has implications not only for how much a wireless company would bid for the spectrum, but also for their behavior after winning the coveted spectrum. Also left

67. National Defense Authorization Act For Fiscal Year 2000, Pub. L. No. 106 65, § 1062(b)(1)(B), 113 Stat., 768 (1999).

68. Lawrence E. Strickling, Assistant Sec'y of Com. for Comms. & Info., Remarks at NTIA/NIST Innovative Spectrum Sharing Technology Day, Washington D.C. (Nov. 5, 2013), *available at* http://www.ntia.doc.gov/speechtestimony/2013/remarks-assistant-secretary-strickling-innovative-spectrum-sharing-technology-d.

69. *See* S. REP. NO. 106-50, at 256 (1999) (Conf. Rep.).

unanswered is how disputes are handled going forward if the military does not adequately "surrender" the spectrum and harmfully interferes with a wireless company's operations.

What does it mean to "certify" to House and Senate Committees? Is testimony required? An official letter signed by the relevant officers? Must the Secretary of Commerce, the Secretary of Defense, and the Joint Chiefs of Staff, present their certification without qualification? Or can they propose workarounds to still satisfy the spectrum relocation goals?

What happens once the alternative spectrum is certified to the Committees as not impairing military operations? Do the Committees have to vote on the certification to ratify it? Or does the Chairman of the committee have the ability to accept or reject the certification? What if one committee accepts the certification while the other rejects (as could plausibly happen with the Communications and Technology Subcommittee and the Armed Services Committee, respectively)? The outcome could hinge on whether unity is required and how these questions are answered procedurally.

III. ANALYSIS

A. Normative Solution: Repeal section 1062(b) of NDAA

Section 1062(b) of the NDAA, as it affects the Act and future military spectrum relocation legislation, should be repealed because it impairs the current and future spectrum reallocation efforts of the FCC and NTIA. Until technology like cognitive radios makes administrative allocation of spectrum irrelevant,[70] decisions and trade-offs must be made in deciding how to allocate and promote spectrum use for its highest value while also sustaining national security.

Section 1062(b), due to the procedures it involves and the ambiguity of its terms, is an unnecessarily restrictive provision given the many legislative and regulatory safeguards DOD already has in place.[71] For example, the Act, and presumably any other legislation dealing with reallocating DOD-held spectrum, must pass through not

70. Cognitive radio holds the promise of allowing any device, whether smart phone, walkie-talkie, or laptop, to sniff out white spaces or underutilized areas of spectrum instantaneously, rendering the command-and-control model of spectrum regulation irrelevant in the era of software-defined spectrum regulation.

71. These safeguards include having the bill go through the House Armed Services Committee, the Senate, and the President as Commander-in-Chief before becoming law. *See* National Defense Authorization Act For Fiscal Year 2000, Pub. L. No. 106-65, § 1062(b)(1)(A)-(B) 113 Stat. 768 (1999).

only the House Commerce Committee but also the Armed Services Committee. It would be hard to imagine that national security and DOD spectrum concerns would not be voiced and represented on the Armed Services Committee.

Additionally, the NTIA's role is to ensure mission-critical operations can be compensated for with alternative spectrum or engineering studies that show operations will not be impaired.[72] Finally, the NTIA and FCC must coordinate to ensure there are no interference problems between government and private users of closely situated spectrum.[73] In sum, the DOD does not need an additional protective legislative provision to ensure that its critical operations will not be impaired. Instead, this provision seems to have been added as a proactive solution in 2000 to address the far-off specter of the DOD possibly having to relocate spectrum further down the road.

B. Descriptive, Feasible Solutions to section 1062(b) Not Involving Repeal

It is unlikely that section 1062(b) will be repealed, given that it was inserted into legislation that would reallocate spectrum currently held by the DOD. However, section 1062(b) represents a roadblock for critical spectrum reallocations from government to private use and something must be done to continue promoting flexible, highest-value use of a scarce resource while protecting critical military spectrum operations. This note proposes two more feasible solutions to enable further allocation of government-held spectrum to highest value use while ensuring military operations.

1. Use an independent panel of experts at the National Academy of Sciences to interpret section 1062(b) when deciding on reallocating military-held spectrum

To solve the issue of undefined terms in section 1062(b) and thus the effectiveness of Matsui's Act, Congress should consider legislation that appoints the National Academy of Sciences to determine whether relocation of military spectrum operations would harm national security and can only be overridden by Congress. There is precedent for turning to the National Academy of Sciences to resolve a telecommunications policy dispute.[74] In 1975,

72. *Spectrum Management*, NAT'L TLECOMM. & INFO. ADMIN., http://www.ntia.doc.gov/category/spectrum-management (last visited Feb. 6, 2015).

73. *Id.*

74. Neil Peretz, *Lessons from the Communications Industry in Standards Setting for the Smart Grid* 23 (Indus. Performance Ctr. Mass. Inst. of Tech., MIT-IPC Working Paper

the FCC ruled that AT&T must allow the interconnection of Carterphone devices into their network.[75] In addition to this specific ruling, the FCC released Part 68 rules that allowed any device to interconnect to the public telephone network.[76] It also changed the rules for prohibiting interconnection, requiring a showing that there was a demonstrated actual harm to the network rather than a mere potential harm.[77] In response, AT&T tendered a Protective Connection Agreement ("PCA") to anyone wanting to interconnect, where they would handle the interconnection of equipment from the third party and charge a fee (sometimes larger than the cost of equipment being connected) for doing so, buffering the third party from the actual phone network.[78]

The FCC asked the National Academy of Sciences to weigh in on AT&T's PCA.[79] They found that while there were dangers to allowing any device to connect to the network, these problems could be solved by good interconnection standards and certifications.[80] The end result was a win for consumers, a win for economic growth industries, and a proliferation of phone technology.[81] This deference to an independent board of experts insulated the eventual policy decision from lobbying, political influence, and other issues that frequently arise in contentious policy areas.[82]

While not completely analogous, DOD and wireless companies will likely be at a similar impasse if this bill passes and the spectrum relocation process is initiated. If the Act is passed unaltered, no government-held spectrum may become available to be auctioned off by the FCC due to section 1062(b) controlling military spectrum relocation and due to the definition of the operative terms in section 1062(b) being unclear.[83] If instead, much like the FCC did in the Carterphone issue, the FCC, the NTIA, and Congress turned to an independent panel within the National Academy of Sciences, the issues raised by section 1062(b) could be resolved by a neutral and expert panel instead of an overwhelmingly pro-military process.

However, there are significant issues with this solution, even if

11-003, 2011), *available at* http://ipc.mit.edu/sites/default/files/documents/IPC11-002-EIP.pdf.

75. *Id.* at 18.
76. *Id.* at 19.
77. *Id.*
78. *Id.*
79. *Id.* at 20.
80. *Id.*
81. *Id.*
82. *Id.*
83. National Defense Authorization Act for Fiscal Year 2000, Pub. L. No. 106-65 113 Stat. 768 (1999).

it is slightly more feasible than repealing section 1062(b). First, DOD could attempt to block the neutral panel from being assembled in the first place. Legislation is likely required to anoint a panel within the National Academy of Sciences to make a binding decision. Legislation like this is unlikely to be passed through the Armed Services Committee. Second, unlike the Part 68 rules and the *Carterphone* decision, the National Academy of Sciences would be tasked with making both an engineering judgment as well as a political and economic one.

The first question—whether it would be possible to relocate military spectrum operations without impairing missions—can be answered by the National Academy of Sciences, unless the DOD refuses to disclose confidential information to the panel.[84] The National Academy of Sciences has eminently qualified personnel who could ascertain the right technical answer to this question. The second question—whether the National Academy of Sciences can accurately determine who should win out on a given spectrum band—involves complex economic, national security, and political considerations. This is a far more expansive policy question than whether certain products can be attached to a regulated monopoly's networks without causing harm to the user. Instead, this would imbue a panel of unelected experts to balance national security against economic growth.

Despite both these issues, the National Academy of Sciences would be better equipped to give a fair and neutral decision regarding section 1062(b) because it would be insulated from political pressure to arrive at the right technical solution with its scientists and engineers.[85] The Secretary of Defense, Secretary of Commerce, and the Joint Chiefs of Staff could provide guidance during the panel's deliberations. Furthermore, it would be better to have a binding decision-making authority given the contentious and delayed nature of the CSMAC meetings, which are non-binding and allow plenty of recriminations by all parties throughout the process.[86]

2. Reading Good Faith into the section 1062(b) interpretation and negotiation

A second feasible alternative to repealing section 1062(b) is

84. *See, e.g.*, *CSMAC Meeting Minutes,* NAT'L TELECOMM. & INFO. ADMIN. (Feb 21, 2013), *available at* http://www.ntia.doc.gov/other-publication/2013/02212013-csmac-meeting-minutes.

85. *See* Peretz, *supra* note 74.

86. *See, e.g.*, *CSMAC Meeting Minutes, supra* note 84.

requiring all parties to agree to a good faith interpretation of section 1062(b) and negotiation as it relates to reallocating DOD-held spectrum. In contrast with the current non-binding process that the Act sought to solve, CSMAC, the NTIA, and the DOD approached the feasibility of relocating military operations in the 1755-1780 MHz band in an exhaustive, but ultimately ad-hoc, manner by way of monthly meetings with sub-committee research presentations that have dragged on for too long.[87] It is exhaustive in that the members of CSMAC and the NTIA are systematically cataloguing, as best they can disclose publicly, the operations on the 1755-1850 MHz band, the technical feasibility of moving some of those weapons systems around, and the technical feasibility of sharing spectrum operations with wireless broadband providers.[88]

There have been numerous issues with the "trusted agent" concept, where only certain people certified by the DOD could glimpse into the DOD's spectrum operations to conduct feasibility tests for relocation of their holdings.[89] The DOD advocates for a "trusted agent" because of concerns that if one contractor or person could see the entire gamut of spectrum operations, that contractor would have an unfair advantage in future contractor bidding scenarios or even implicate national security concerns.[90] It seems unlikely that in future government spectrum user relocations or sharing situations, as will be inevitable, the DOD, the FCC, the NTIA, Congress, or the wireless industry will be satisfied with an exercise as prolonged as the one in which CSMAC has engaged. Thus, if section 1062(b) cannot be repealed and a panel is appointed to make a decision regarding relocating operations on the 1755-1780 MHz band, the panel's ultimate decision should be binding to avoid the problems with CSMAC meetings.

C. Requiring all parties to negotiate in good faith

What is needed in order to resolve this potentially common future scenario is both a standardized negotiation framework and imposition of good faith in the negotiating parties. One framework for good faith negotiations formulated and enforced by the FCC deals with retransmission consent of broadcast TV content by cable providers.[91] The Communications Act as amended did not include

87. *Id.*
88. *Id.*
89. *Id.*
90. *Id.*
91. *Retransmission Consent*, FED. COMMC'NS COMM'N, http://www.fcc.gov/encyclopedia/retransmission-consent (last visited Feb. 6, 2015).

any standards for broadcasters and multichannel video programming distributors ("MVPD") to negotiate for retransmission consent (MVPD's can retransmit broadcast content).[92] The Satellite Home Viewer Improvement Act of 1999 changed this by requiring MVPD's and broadcasters to negotiate in good faith.[93]

To enforce negotiating in good faith, the FCC uses a two-part framework to determine if negotiations between an MVPD and a broadcaster are in good faith.[94] First, the FCC used a list of seven objective standards for good faith negotiation that, if violated, resulted in a finding of a breach of the obligation of good faith.[95] The objective standards for good faith negotiation are reproduced below:

> The following actions or practices violate a broadcast television station's or multichannel video programming distributor's (the 'Negotiating Entity') duty to negotiate retransmission consent agreements in good faith:
>
> Refusal by a Negotiating Entity to negotiate retransmission consent;
>
> Refusal by a Negotiating Entity to designate a representative with authority to make binding representations on retransmission consent;
>
> Refusal by a Negotiating Entity to meet and negotiate retransmission consent at reasonable times and locations, or acting in a manner that unreasonably delays retransmission consent negotiations;
>
> Refusal by a Negotiating Entity to put forth more than a single, unilateral proposal;
>
> Failure of a Negotiating Entity to respond to a retransmission consent proposal of the other party, including the reasons for the rejection of any such proposal;
>
> Execution by a Negotiating Entity of an agreement with any party, a term or condition of which, requires that such Negotiating Entity not enter into a retransmission consent agreement with any other television broadcast station or multichannel video programming distributor; and

92. Good Faith and Exclusive Retransmission Consent Complaints, 47 C.F.R § 76.65 (2005).

93. *Id.*

94. *Id.*

95. *Id.*

> Refusal by a Negotiating Entity to execute a written retransmission consent agreement that sets forth the full understanding of the television broadcast station and the multichannel video programming distributor.[96]

Second, even if the standards are met, the FCC can decide on the totality of the circumstances whether a party negotiated in good faith.[97] This happened in *Allbritton v. Shentel*, where although Allbritton raised retransmission fees 500 percent, the FCC declined to find a showing of bad faith because it was a simple disagreement about rates rather than malicious tactics.[98]

If the DOD did not designate a representative to work with the NTIA, the FCC, and the wireless industry to examine the feasibility of relocating DOD holdings in a future band similar to the 1755-1780 MHz band, there would be a violation of sorts in good faith negotiating. Similar provisions would cover unreasonable delays, refusal to put forth more than one proposal, and not justifying their rejections of an agreement to relocate.

Should a future Matsui-Stearns-esque bill pass and the military is asked to relinquish its spectrum holdings on bands similar to 1755-1780 MHz, the FCC or NTIA could utilize these types of frameworks in negotiations between the wireless industry and the DOD. It would impose structure rather than going down the ad hoc rabbit hole of endless CSMAC reports. It would also put both parties on notice that an outcome is expected and penalties will be levied if a party acts in bad faith.

Granted, there are several issues with the requirement of a good faith negotiating. While the FCC could fine the wireless industry if they violated the framework,[99] how would the FCC deal with a finding that the Department of Defense was not acting in good faith? Can one agency levy a penalty on another? Perhaps if the DOD was found to be acting in bad faith, the NTIA or Congress could penalize it by adjusting their spectrum allocations or budget allocations in future years, even though it has never done so at the time of this writing. Similarly, the FCC could penalize wireless industry spectrum allocations if they were found to not be negotiating in good faith,

96. *Id.*

97. *Id.*

98. ACC Licensee, Inc. v. Shentel Telecommunications Company, *Memorandum Opinion and Order*, DA-12-1086 (2012), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0706/DA-12-1086A1.pdf.

99. *Update: FCC Re-Whacks TV Max*, COMMLAWBLOG (July 7, 2014), http://www.commlawblog.com/2014/07/articles/broadcast/update-fcc-rewhacks-tv-max.

much like it penalizes radio operators who intentionally interfere with another radio operator's signal.[100]

Additionally, can the FCC make the DOD take a certain action, or vice versa? If the DOD can benefit from provisions in the NDAA slipped into modern spectrum legislation, how can we be sure Congress or special interests would not strike down this framework either? Perhaps the solution would involve Congress or OMB designating budgetary fines for violating the good faith negotiating process. However, this framework as it has been used for retransmission consent has been ineffective at preventing the kind of service outages that have hurt consumers since its adoption.[101]

Regardless of the solution used, the intent of this legislation will be frustrated if section 1062(b) is used either as a tool to frustrate negotiations or to prevent the NTIA and the FCC from reallocating bands similar to 1755-1780 MHz in subsequent legislation. The intent behind the Act is to promote wireless broadband deployment, fund FirstNet, and help solidify the nation's leadership in technological innovation. Both Reps. Matsui and Guthrie, representing the Commerce and Armed Services Committees, have stated so.

CONCLUSION

Unlike Representative Matsui's 2012 legislation, the 2013 Act had a good chance of passing, or at least of forcing the DOD's hand on spectrum allocation.[102] The overwhelming drumbeat of support for auctioning off that spectrum from Congress, the wireless industry, the FCC, and other important stakeholders forced a solution that overcame the still-existing statutory impediment to freeing up additional spectrum from the military.

Regardless of the Act's less formal effect, section 1062(b) of NDAA 2000 looms in its ability to thwart relocation of military spectrum by legislative action. Future legislation that attempts to relocate government-held spectrum would be discouraged, if not completely stifled, if section 1062(b) still governs. The DOD and national security interests have enough political and procedural protections in regards to its spectrum operations to prevent any impairment of its spectrum operations by the NTIA, the FCC,

100. Mitchell Lazarus, *Finding the Harm in "Harmful Interference"*, COMMLAWBLOG (Jan. 30, 2009), http://www.commlawblog.com/2009/01/articles/broadcast/finding-the-harm-in-harmful-interference.

101. Meg Burton, *Reforming Retransmission Consent*, 64 FED. COMM. L.J. 618, 619 (2012).

102. *See Oversight of the Federal Communications Commission: Hearing on H.R. 3674 Before the Subcomm. on Comm. and Tech.,* 113th113th Cong. 22-23, 85-89, 89-93 (2013).

Congress, or future administrations, so a more streamlined solution should be implemented to prevent delay for the clearly valuable activity of allocating spectrum to its highest value use.

Thus, section 1062(b) should be repealed and the Act should be amended to allow the FCC and the NTIA to clear out government operations in bands like the 1755-1780 MHz band and auction them off to promote wireless broadband deployment. Alternatively, if it cannot be repealed, the decision about which military operations to clear out of the band or to share with private users should be delegated to an independent board of experts, such as the National Academy of Sciences.

An alternative solution would be to require all parties to spectrum relocation negotiations to act in good faith, with administrative penalties for failing to do so. By implementing these solutions, all parties get a fair hearing as spectrum relocation procedures are advanced, satisfying national security concerns while promoting policies that advance technological innovation and economic growth.