

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In The Matter of	)	
	)	
Amendment of the Commission’s Rules with	)	GN Docket No. 13-185
Regard to Commercial Operations in the 1695-	)	
1710 MHz, 1755-1780 MHz, and 2155-2180 MHz	)	
Bands	)	
	)	

**COMMENTS OF 4G AMERICAS**

4G Americas is the leading industry association in the Americas representing the 3GPP family of technologies, including LTE. The mission of 4G Americas is to promote, facilitate, and advocate the deployment and adoption of 3GPP technologies throughout the Americas, including through the preparation of white papers on technical challenges facing the mobile industry. 4G Americas provides technical recommendations on interoperability between second, third, and next-generation wireless technologies to support the migration to LTE and LTE-Advanced . 4G Americas works with government agencies, regulatory bodies, technical standards organizations, and other global wireless organizations in order to promote interoperability and convergence. These relationships include participation as a Market Representation Partner in the 3rd Generation Partnership Project (3GPP), membership in the International Telecommunication Union (ITU) and the Inter-American Telecommunication Commission (CITEL) of the Organization of American States, and collaborative working agreements with other agencies throughout the Western Hemisphere and the rest of the world.

The 4G Americas Board of Governors members include Alcatel-Lucent, America Movil, AT&T, Blackberry, Cable & Wireless, Cisco, CommScope, Entel, Ericsson, Gemalto, HP, Mavenir Systems, Nokia Solutions and Networks, Openwave Mobility, Powerwave, Qualcomm, Rogers, T-Mobile USA, and Telefonica.

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## COMMENTS OF 4G AMERICAS

### **I. Introduction**

4G Americas commends the Commission for its leadership in issuing the Notice of Proposed Rulemaking on commercial operations in the 1755-1780 MHz, 2155-2180 MHz, and other Advanced Wireless Services-3 (“AWS-3”) bands to meet the timelines Congress enacted in the Spectrum Act of 2012, which require the auction and licensing of AWS-3 spectrum by February 2015. 4G Americas will focus its comments on the 1755-1780 MHz and 2155-2180 MHz bands, which align with the international industry 3GPP Band Class 10 for Long Term Evolution (“LTE”). The Commission’s proposed auction of the 1755-1780 MHz and 2155-2180 MHz bands has been decades in coming. Since the early 1990s, both the U.S. and its partners around the world have been identifying spectrum for AWS—now more colloquially known as mobile broadband since its huge success in the marketplace. The well-documented and sharp increase in consumer demand, coupled with important policy goals for the use of the auction proceeds, argue for a single, paired auction of the 1755-1780 MHz and the 2155-2180 MHz bands at the same time, consistent with the timeline called for by Congress last year. To meet Congress’ public safety funding and deficit reduction goals, such a paired auction must include defined, specific timelines for federal systems to be relocated or share the lower band, with realistic assumptions and operating parameters that reflect advances in LTE technology.

### **II. Commission should pair the 1755-1780 MHz and 2155-2180 MHz bands in auction**

The Commission should pair the 1755-1780 MHz and 2155-2180 MHz bands in a single auction and not in a two-staged auction. More than twenty years ago, at the 1992 World

Administrative Radio Conference, U.S. leadership led to international agreement that the 2110-2200 MHz band would be allocated for advanced wireless services. The 2000 World Radiocommunication Conference identified additional bands for advanced wireless services, including 1710-1885 MHz. More than a decade ago, the National Telecommunications and Information Administration of the U.S. Department of Commerce (“NTIA”) presented the 1755-1780 MHz band as a feasible option for accommodating advanced mobile systems as part of a pairing arrangement with spectrum in the 2.1 GHz band.<sup>1</sup> During the Clinton Administration, NTIA conducted a technical study on the potential for accommodating advanced wireless services in the 1755-1780 MHz band.<sup>2</sup> The 2001 report presented the option of pairing the 1755-1780 MHz band for mobile devices with a band above 2110 MHz for base station use.<sup>3</sup> The option was presented after consideration of the Department of Defense’s (“DoD”) analysis of the compatibility between major DoD systems in the 1755-1850 MHz band and advanced wireless systems, as well as relocation costs, operational impacts of DoD migration, and the time requirements to move.<sup>4</sup> In 2001, DoD estimated it would take ten years to clear most of the systems from the band.

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<sup>1</sup> Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce, NTIA Special Publication 01-46, *The Potential for Accommodating Third Generation Mobile Systems in the 1710-1850 MHz Band: Federal Operations, Relocation Costs, and Operational Impacts* (March 2001) available at <http://www.ntia.doc.gov/ntiahome/threeg/33001/3g33001.pdf> (“2001 Final Report”).

<sup>2</sup> See Presidential Memorandum, The White House, *Advanced Mobile Communications/Third Generation Wireless Systems* (October 13, 2000), available at <http://www.ntia.doc.gov/legacy/ntiahome/threeg/3gmemo.htm>.

<sup>3</sup> 2001 Final Report at 4-17. (“In Phase 2, the 1755-1780 MHz band would be added for sharing with mobiles, paired with base stations above 2110 MHz (e.g., in the 2500-2690 MHz band).”). The report acknowledged that sharing issues would need to be resolved and that protection areas might need to be established. See *id.* at xxi, 4-17-19.

<sup>4</sup> See *id.*

4G Americas is pleased that the Department of Defense—a dozen years later—has again demonstrated its ability to move systems from the 1755-1780 MHz band, as expressed in its July 2013 letter. DoD’s proposal is a significant breakthrough that provides a framework for progress. DoD stated in its July letter that most systems could be relocated from the sub-band, with remaining systems sharing the sub-band with commercial systems through a “near-term”<sup>5</sup> auction. Given DoD’s position, the Commission should design a single auction pairing the 1.7/2.1 GHz bands. DoD’s support of a near-term auction makes delaying an auction of 1755-1780 MHz unnecessary, let alone harmful to the other goals of Congress and the Commission.<sup>6</sup>

In addition to the fact that pairing 1.7/2.1 GHz band has been considered by the global industry for decades, studies have demonstrated that paired spectrum is much more valuable.<sup>7</sup> The most widely commercially-deployed 3GPP mobile broadband wireless standards call for

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<sup>5</sup> Letter from Karl B. Nebbia, Associate Administrator, Office of Spectrum Mgmt., Nat’l Telecomm. & Info. Admin., to Julius P. Knapp, Chief, Office of Eng’g and Tech., Fed. Commc’ns Comm’n, GN Docket No. 09-51, ET Docket No. 10-123 (filed July 22, 2013), at Attachment, Letter from Teresa M. Takai, Chief Info. Officer, Dep’t of Def., to Lawrence E. Strickling, Assistant Sec. for Commc’ns and Info., Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce (July 17, 2013).

<sup>6</sup> The Congressional Budget Office, noting that increasing debt relative to the size of the economy is not sustainable, stated recently that “Between 2009 and 2012, the federal government recorded the largest budget deficits relative to the size of the economy since 1946, causing federal debt to soar. Federal debt held by the public is now about 73 percent of the economy’s annual output, or gross domestic product (GDP).” Cong. Budget Office, *The 2013 Long-Term Budget Outlook*, Report (Sept. 17, 2013), available at <http://www.cbo.gov/publication/44521>.

<sup>7</sup> See, e.g., *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Notice of Proposed Rulemaking and Order on Reconsideration, FCC 13-102, 28 FCC Rcd. 11,479 (2013), at Attachment, Statement of Commissioner Rosenworcel, GN Docket No. 13-185 (July 23, 2013) (“Statement of Commissioner Rosenworcel”); see also Coleman Bazelon, The Brattle Grp., Inc., *The Economic Basis of Spectrum Value: Pairing AWS-3 with the 1755 MHz Band is More Valuable than Pairing it with Frequencies from the 1690 MHz Band* (2011), available at <http://www.brattle.com/documents/UploadLibrary/Upload938.pdf> (“AWS-3 Pairing Report”).

FDD paired spectrum.<sup>8</sup> The experience operators and vendors have gained from these internationally-harmonized deployments, and consumer response in the marketplace, has increased the value of similarly paired spectrum. The 1755-1780 MHz band, when paired with the 2155-2180 MHz band, aligns closely with 3GPP Band Class 10. The 1.7/2.1 GHz paired band is the best near-term opportunity for LTE roaming in Region 2—the Americas region the United States shares with Canada, Mexico, the Caribbean, and Central and South America. Because of the identification of the 1.7 GHz and 2.1 GHz bands for mobile broadband at past WRCs, and the support by the U.S. at CITEL for these bands, there is widespread interest in the Americas in 1.7/2.1 GHz as a band for LTE. Mobile broadband deployments in the Americas in the 1.7/2.1 GHz band include Argentina, Chile, Colombia, Ecuador, Mexico, Peru, Uruguay, and Paraguay. A critical mass of countries in the Americas deploying Band Class 10 for LTE means economies of scale and scope for devices and affordable roaming throughout the region. Success of the 1.7/2.1 GHz band as a regional LTE roaming band could also ensure the inclusion of 1.7/2.1 GHz chips in quad-band chipsets, which would benefit U.S. consumers through the commercial offering of “world” SmartPhones, tablets, dongles, and other mobile broadband devices—allowing U.S. consumers to have affordable LTE prices both at home and as they roam abroad.

There have been important innovations in more efficient spectrum management such as dynamic spectrum access and aggregation and supplemental downlink, but additional paired spectrum is still necessary to meet exploding consumer demand for LTE. Congress provided

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<sup>8</sup> See Rysavy Research, *Mobile Broadband Explosion: The 3GPP Wireless Evolution*, at 120, (Aug. 2012), available at <http://www.4gamericas.org/documents/4G%20Americas%20Mobile%20Broadband%20Explosion%20August%2020121.pdf> (“Most WCDMA and HSDPA deployments are based on FDD, in which the operator uses different radio bands for transmit and receive.”).

that proceeds from spectrum auctions would fund the construction of a nationwide wireless broadband network for public safety (PSBN) and upgrades of public safety answering points (“PSAPs”) for Next Generation 9-1-1 emergency calls. Some have estimated that the construction of the PSBN for FirstNet could cost \$20 Billion,<sup>9</sup> and that upgrading the PSAPs for NG911 approximately another \$3 Billion.<sup>10</sup> Particularly in light of the Commercial Spectrum Enhancement Act’s requirement that proceeds from any auction of federally-relocated or shared spectrum exceed 110% of the relocation or sharing costs, and in light of the increasing need for broadband spectrum and FirstNet and NG911 funding, let alone the Congressional goals of deficit reduction, the Commission should bring more valuable spectrum to the marketplace.<sup>11</sup> To do so, the 1.7/2.1 GHz spectrum should be paired and sold in a single auction.

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<sup>9</sup> See, e.g., Donny Jackson, *FirstNet seeks the right mix*, Urgent Communications (Aug. 15, 2013), <http://urgentcomm.com/public-safety-broadbandfirstnet/firstnet-seeks-right-mix> (“Exactly how much money is needed is uncertain, but the consensus is that Congress has not earmarked enough—estimates have ranged from \$12 billion to \$70 billion, depending on the source and assumptions included in the calculation.”).

<sup>10</sup> See Fed. Comm’n Comm’n, Pub. Safety and Homeland Security Bureau, *White Paper: A Next Generation 911 Cost Study: A Basis for Public Funding Essential to Bringing a Nationwide Next Generation 911 Network to America’s Communications Users and First Responders* (Sept. 2011), available at <http://www.fcc.gov/document/pshsb-next-generation-911-cost-study>.

<sup>11</sup> See *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Notice of Proposed Rulemaking and Order on Reconsideration, FCC 13-102, 28 FCC Rcd. 11,479, 11539-40 ¶158 (2013) (“CSEA further requires that the total cash proceeds from any auction of ‘eligible frequencies’ must equal at least 110 percent of estimated relocation costs of eligible Federal entities, and prohibits the Commission from concluding any auction of eligible frequencies that falls short of this revenue requirement.”) (internal citations omitted) (“NPRM”).

### III. Relocation preferred to sharing

As the Commission notes,<sup>12</sup> the Spectrum Act *requires* relocation of federal systems from evaluated spectrum if feasible.<sup>13</sup> Congress directed NTIA to “give priority to options involving reallocation of the band for exclusive non-Federal use” and stipulated that NTIA “shall choose options involving shared use only when it determines, in consultation with the Director of the Office of Management and Budget, that relocation of a Federal entity from the band is not feasible because of technical or cost constraints.”<sup>14</sup> Auction proceeds of a paired 1.7/2.1 GHz auction are likely to be higher where clearing is prioritized over sharing. But given the huge increase in demand for mobile broadband, even when LTE systems will have to share the 1755 MHz band with remaining federal systems that cannot be moved, auction proceeds could be more than adequate to reimburse costs of relocation or sharing. In that case, cost constraints are unlikely to prevent the relocation of systems that can be moved.

With respect to technical constraints, the Commerce Department’s public sector advisory council, the Commercial Spectrum Management Advisory Committee (“CSMAC”), has been hard at work for several years, producing an interim recommendation two years ago, in August 2011, that urged the Commerce Department and other federal agencies to focus on clearing the 1755-1780 MHz sub-band in order to auction it paired with 2155-2180 MHz.<sup>15</sup> CSMAC worked with spectrum managers from federal systems in four Working Groups in order to review the

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<sup>12</sup> See *id.* at ¶ 11.

<sup>13</sup> Middle Class Tax Relief Act, Pub. L. No. 112-96, § 6701(a) (amending 47 U.S.C. §923(j)) (2012).

<sup>14</sup> H.R. Rep. No. 112-399, at 97-98 § 6701(j)(1) (2012) (Conf. Rep.).

<sup>15</sup> See Commerce Spectrum Mgmt. Advisory Comm., Interim Report, *Search for 500 MHz Working Group* (August 2011), available at [http://www.ntia.doc.gov/files/ntia/meetings/csmac\\_search\\_update\\_redline.pdf](http://www.ntia.doc.gov/files/ntia/meetings/csmac_search_update_redline.pdf).

ability for federal systems to relocate from the 1755 MHz band or, where relocation was not feasible, to share the band with different federal systems.<sup>16</sup> On August 28, 2013, CSMAC released its final Working Party reports.<sup>17</sup> NTIA applauded CSMAC “for its groundbreaking work to explore sharing arrangements between federal agencies and private industry.”<sup>18</sup> The Commission noted in its Notice that it would base its proposals on the final CSMAC Reports.<sup>19</sup> But 4G Americas cautions that the interim 2011 CSMAC reports had called for clearing, not sharing, the sub-band, presaging the directive of Congress in the Spectrum Act of 2012.

The final CSMAC Reports adopted this August were an important exercise, but the assumptions and methodologies that went into their analysis were based on conservative and limited data. CSMAC Members did not have access to operational data on all of the federal systems. Rather, propagation models developed years ago were used based on theoretical inputs. Improvements should be made in the spectrum sharing analysis for 1755-1780 MHz to better reflect operating characteristics of LTE technology. To this end, 4G Americas applauds the

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<sup>16</sup> In contrast to the Spectrum Act’s prioritization of relocation over sharing, NTIA instructed the CSMAC Working Groups to “first emphasize approaches to sharing, whether as a permanent solution (Do the agencies actually have to move?) or as the means to facilitate access during relocation transition.” Commerce Spectrum Mgmt. Advisory Comm., *Working Group 4: 1755-1850 MHz Point-to-Point Microwave*, Final Report, at 5 (July 23, 2013) (citing NTIA “Instructions to the CSMAC Working Groups”, June 28, 2012.) (“Final WG 4 Report”).

<sup>17</sup> Working Group 2 focused on law enforcement video, explosive ordnance disposal, and other short distance links, and its Report was transmitted by NTIA to the FCC in April 2013. The Working Parties included representatives from federal agencies.

<sup>18</sup> Press Release, Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce, NTIA Applauds CSMAC’s Work to Make More Spectrum Available for Commercial Use (Aug. 28, 2013), available at <http://www.ntia.doc.gov/press-release/2013/ntia-applauds-csmac-s-work-make-more-spectrum-available-commercial-use>.

<sup>19</sup> See NPRM at 11,494 ¶ 27 (“Our proposals regarding the 1695-1710 MHz and 1755-1780 MHz bands incorporate the significant study and analysis conducted through the CSMAC’s multi-stakeholder process.”).

Commission’s grant of the Special Temporary Authority issued to several mobile carriers and CTIA,<sup>20</sup> and supports its extension. In June 2013, President Obama issued a Presidential Memorandum that directs the federal users to work cooperatively with industry, including with cleared “trusted agents” from the industry.<sup>21</sup> 4G Americas hopes this Memorandum will facilitate a more robust exchange of data based on the actual operating characteristics of federal systems that must remain in the band for technical reasons and the spectral-efficiency enhancements of LTE, in order to determine appropriate operating parameters to assess realistically the feasibility of LTE systems sharing the 1755-1780 MHz band. In light of the Spectrum Act requirement that NTIA prioritize relocation over sharing, it is particularly critical that sharing studies be based on the most realistic assumptions possible—ones that recognize the advanced features of LTE—so as to maximize the ability of commercial providers to meet consumer demand while protecting federal incumbents’ mission capabilities.<sup>22</sup>

The Commission seeks comment on auctioning a “right to negotiate” with federal incumbents in the 1755-1780 MHz band.<sup>23</sup> A “right to negotiate” with federal users who are not required to relocate by a certain date, or even share with realistic mitigation techniques that

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<sup>20</sup> See, e.g., Fed. Commc’ns Comm’n, Experimental Special Temporary Authorization for T-Mobile License LLC (Aug. 13, 2012), *available at* <https://apps.fcc.gov/els/GetAtt.html?id=128554>.

<sup>21</sup> See Presidential Memorandum, The White House, *Expanding America's Leadership in Wireless Innovation*, at Sec. 2(c) (June 14, 2013), *available at* <http://www.whitehouse.gov/the-press-office/2013/06/14/presidential-memorandum-expanding-americas-leadership-wireless-innovatio>.

<sup>22</sup> See, e.g., Commerce Spectrum Mgmt. Advisory Comm., *Working Group 5: 1755-1850 MHz Airborne Operations*, Final Report, at 2 (Sept. 16, 2013) (noting that industry believes that the baseline assumptions for sharing analysis undertaken to date were not realistic.) (“Final WG 5 Report”).

<sup>23</sup> See Statement of Commissioner Rosenworcel.

support commercial operation, will not meet the Commission's goals,<sup>24</sup> including funding FirstNet and NG911. The uncertainty inherent in negotiating with a party who has little to no incentive to move, or for whom spectrum relocation or sharing negotiations distract from core missions without a countervailing profit motive, will depress proceeds and delay commercial access to badly-needed broadband spectrum. Rather, the auction should be for clearly-defined rights in clearly-defined licensing areas, with express and specific transition deadlines, system by system, location by location.<sup>25</sup> Given that the Department of Defense has three times in the last dozen years stated it can move systems out of the sub-band, including a statement in March 2012 that such relocation or sharing could be accomplished within five years, an auction in 2014 for access beginning in 2017 is feasible. The history of the AWS-1 auction and subsequent relocation shows that it may take several years to clear, even where relocation is mandatory. The industry is aware of this history and can respond accordingly in an auction.<sup>26</sup> Consumer demand argues for a paired auction with clear rights.

The most acute need for additional mobile broadband capacity is on the downlink—the link from the base station to user devices. In the 3GPP Band Class 10 plan for LTE, the uplink

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<sup>24</sup> See Fed. Comm'n's Comm'n, *Connecting America: The National Broadband Plan*, at 84 (March 2010) (“The FCC should make 500 megahertz newly available for broadband use within the next 10 years, of which 300 megahertz between 225 MHz and 3.7 GHz should be made newly available for mobile use within five years.”), available at <http://download.broadband.gov/plan/national-broadband-plan.pdf>.

<sup>25</sup> To the extent the specific location or operating parameters of some federal systems cannot be made publicly available, such information could be disclosed to trusted agents employed by potential bidders. CSMAC's Working Group 5 Final Report notes that information sharing will commence with 12 industry selected individuals in accordance with Nondisclosure Agreements that DoD has signed and industry is finalizing. See Final WG 5 Report at 2. 4G Americas hopes these information sharing agreements will be useful precedents for all auction participants as auction rules are finalized.

<sup>26</sup> See, e.g., Final WG 4 Report at 11 (“Experience gained from AWS-1 coordination was used as a starting point for discussion. The membership provided other input related to their experiences establishing coordination processes.”).

band is 1.7 GHz. Moreover, in the U.S., because the upper 1780-1850 MHz band is situated between the PCS and AWS uplink bands, it is more suitable for uplink. It can be more efficiently used for uplink without losing spectrum to guard bands. Without a downlink pair available, uplink spectrum at 1780-1850 MHz is of limited value. Because 1755-1780 MHz is more valuable as a pair to downlink spectrum available at 2155-2180 MHz, it is highly advantageous to auction 1755-1780 MHz paired with 2155-2180 MHz. If the Commission waits to auction the 1755-1780 MHz band until some distant time in the future when the federal incumbents have nothing more pressing than completing relocation plans or sharing arrangements, but auctions 2155-2180 MHz next year, the 1755-1780 MHz band will lose substantial value to the industry. Reduced proceeds will threaten sufficient funding of FirstNet and NG911 upgrades, let alone keep industry from meeting consumer demand or allaying the national security threat of a substantial federal deficit.<sup>27</sup>

For the same reasons, 4G Americas discourages the Commission from creating a mere “overlay” license at 1755 -1780 MHz.<sup>28</sup> Consumer demand exceeds the access offered in an “overlay” license, and such limited rights would likely depress auction proceeds.

The Commission requested comment on ways to encourage the federal agencies to develop their transition plans.<sup>29</sup> To meet the Commission’s auction timeframe of a September 2014 auction, as stated in its March 20, 2013 letter, the agencies would have to submit transition

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<sup>27</sup> See, e.g., Jeanne Sahadi, *Why debt is a threat to national security*, CNN Money (Oct. 22, 2012), <http://money.cnn.com/2012/10/22/news/economy/national-security-debt/index.html>.

<sup>28</sup> See NPRM at 11,513 ¶ 76, 11,540 ¶ 161.

<sup>29</sup> See *id.* at 11,513 ¶75 n. 199 (“NTIA must make the transition plans, with the exception of classified or other sensitive information, publicly available on its website no later than 120 days before the auction start date.”).

plans to NTIA by January 2014.<sup>30</sup> 4G Americas commends NTIA for requesting federal agencies to submit pre-submission information relative to their transition plans by August 16, 2013.<sup>31</sup> Likewise, 4G Americas supports the White House Office of Management and Budget (“OMB”) reimbursing federal agencies for the planning required to develop a transition plan in order to facilitate a near-term auction and more timely commercial access. 4G Americas thanks the Department of Defense for the work it has undertaken to date on its transition plan and hopes that 4G Americas’ member companies’ trusted agents can work closely with DoD and other agencies to conclude realistic, specific, and aggressive transition plans by January 2014, consistent with the President’s June Memorandum.<sup>32</sup> While 4G Americas does not endorse all aspects of DoD’s plan,<sup>33</sup> it is a quantum step in the right direction. DoD’s estimated cost of \$3.5

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<sup>30</sup> See Letter from Julius Genachowski, Chairman, Fed. Commc’ns Comm’n, to Lawrence E. Strickling, Assistant Secretary for Communications and Information, Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce (March 20, 2013), *available at* [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db0321/DOC-319708A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0321/DOC-319708A1.pdf); see also Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce, to Julius Genachowski, Chairman, Fed. Commc’ns Comm’n (April 19, 2013), *available at* [http://www.ntia.doc.gov/files/ntia/publications/ntia\\_letter\\_to\\_fcc\\_chair\\_re\\_1695\\_and\\_1755\\_auction\\_20130419.pdf](http://www.ntia.doc.gov/files/ntia/publications/ntia_letter_to_fcc_chair_re_1695_and_1755_auction_20130419.pdf).

<sup>31</sup> See Memorandum from Lawrence E. Strickling, Assistant Sec. for Commc’ns and Info., Nat’l Telecomm. & Info. Admin., U.S. Dep’t of Commerce, to Fed. Agencies and Dep’ts, *Transition Planning for the 1755-1780 MHz Band* (Aug. 1, 2013).

<sup>32</sup> 4G Americas echoes the CSMAC recommendation to the FCC, DoD and NTIA that they establish a formal coordination process between DoD and commercial wireless service providers to assist with spectrum sharing issues on localized basis. See Commerce Spectrum Mgmt. Advisory Comm., *Working Group 3: 1755-1850 MHz Satellite Control and Electronic Warfare*, Final Report, at 3 (July 19, 2013).

<sup>33</sup> 4G Americas supports the industry roadmap for the 1755 MHz band. See Letter from Steve Sharkey, T-Mobile U.S., Inc., to Marlene H. Dortch, Secretary, Fed. Commc’ns Comm’n, WT Docket Nos. 10-123, 07-195 (filed Jun. 24, 2013), at Attachment, *Industry Roadmap to Assessing the 1755-1850 MHz Band*, *available at* <http://apps.fcc.gov/ecfs/document/view?id=7520924788>.

Billion for relocation and sharing appears reasonable and is in line with precedents.<sup>34</sup> Based on the history of proceeds from the 2007 auction of AWS-1 spectrum, when paired 1.7/2.1 GHz was auction with proceeds in excess of \$12 Billion, it is quite likely that proceeds from auctioning 1755-1780 MHz consistent with Band Class 10 will exceed federal incumbents' relocation or sharing costs, but this is particularly likely if the spectrum is paired in a single auction, enhancing its value substantially.

The value of paired, internationally-harmonized spectrum will likely ensure that proceeds exceed 110% of relocation and/or sharing costs, allowing the auction to proceed to licensing.

#### **IV. AWS-3 Service Rules**

4G Americas supports the Commission's proposal to allocate 1755-1780 MHz for uplink/mobile transmit use under technical rules similar to AWS-1 rules for 1710-1755 MHz. That use is consistent with the 3GPP Band Plan for Band Class 10. Likewise, 4G Americas supports downlink/base station use of 2155-2180 MHz, similar to the Commission's current rules for AWS-1 and AWS-4. The Commission's Notice raises the comparable benefits of exclusion zones and protection zones. Given the Spectrum Act's preference for relocation over sharing, a comparable preference should exist for protection zones over exclusion zones. To date, exclusion zones for federal systems in other bands suitable for wireless broadband, based on earlier generations of wireless technology, have tended to remove the majority of the U.S. population from expanded broadband access, inconsistent with the National Broadband Plan and

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<sup>34</sup> The Department of Defense's estimated costs of approximately \$3.5 Billion would be supplemented by other federal incumbents' costs. DoD's estimated relocation costs for clearing the AWS-1 band were much higher than actual costs.

the President's 2010 Memorandum. Protection zones that maximize commercial access more realistically, reflecting efficiency gains in LTE technology, are more consistent with the Commission's goals and the President's June 2013 directive to federal spectrum managers to work cooperatively with the industry, including with parties signing non-disclosure agreements.

As stated above, the Commission should not base the AWS-3 service rules on the final CSMAC Reports adopted August 2013, but should instead rely on a more realistic LTE modeling and interference analysis. The release of federal system technical characteristics to cleared "trusted agents" from CSMAC members will enable parties to better model and analyze real-world sharing effects and interference mitigation techniques in the 1755 MHz band between LTE and federal incumbent systems. A more realistic representation of the interference environment between federal and commercial operations in the 1755-1780 MHz band would likely result in more commercial access in shared protection zones, and where exclusion zones are required, result in smaller exclusion zones. Maximizing commercial access in protection zones and shrinking any necessary exclusion zones is consistent with the Spectrum Act's prioritization of relocation over sharing.

## **V. Conclusion**

Both the government and the private sector have been working for years to identify more spectrum for mobile broadband. During this long gestation, which has spanned entire decades, consumer demand for mobile broadband has grown sharply. To meet this demand, the Commission should adopt rules for a single auction, pairing in auction the 1755-1780 MHz and 2155-2180 MHz bands—consistent with 3GPP Band Class 10 plans for LTE. To meet the funding goals of the government and consumer demand, such a single, paired auction must

include a clear time table for federal systems to transition from or share the lower band. A “right to negotiate” will not meet the various Congressional and Commission policy goals for increasing the amount of valuable spectrum in the marketplace for mobile broadband. The AWS-3 rules should reflect—where federal systems will remain in and share the band with LTE—power limits and other mitigation techniques based on more realistic operating characteristics for LTE sharing than those reflected in the CSMAC Reports.

Respectfully submitted,



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