

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

In the Matter of)	
)	
Spectrum Task Force Invites Technical Input on)	ET Docket No. 10-142
Approaches to Maximize Broadband Use of)	
Fixed/Mobile Spectrum Allocations in the 2 GHz))	WT Docket No. 04-356
Range)	
)	WT Docket No. 07-195

REPLY COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

CTIA – The Wireless Association® (“CTIA”) hereby submits these reply comments in response to the Commission’s Public Notice inviting technical input on approaches to encourage the growth of terrestrial mobile broadband services in the 2 GHz spectrum range.¹ The opening comments in this proceed demonstrate the priority the wireless industry has placed on identifying additional spectrum for mobile broadband and its commitment to thorough examination of various configurations for spectrum deployment. Further, opening comments show the widespread support for use of 2 GHz spectrum for mobile broadband. While numerous parties have advocated in favor of broadband deployment in the bands targeted in the Public Notice, CTIA believes that the Commission should support, and factor in its analysis, NTIA’s efforts to reallocate the 1755-1850 MHz band for mobile broadband. If this spectrum were made available, the Commission would have even more options for possible pairings and band plans. In particular, CTIA continues to believe that the Commission should prioritize the pairing of the 2155-2180 MHz spectrum with spectrum at 1755-1780 MHz. Finally, CTIA notes that commenters in this proceeding have proposed several alternative band plans to the three

¹ *Spectrum Task Force Invites Technical Input on Approaches to Maximize Broadband Use of Fixed/Mobile Spectrum Allocations in the 2 GHz Range*, Public Notice, ET Docket No. 10-142, WT Docket Nos. 04-356 and 07-195 (May 20, 2011) (“Public Notice”).

highlighted in the Public Notice, illustrating the need for further discussion of the best possible uses of this spectrum.

I. COMMENTERS AGREE THAT THERE IS A NEED FOR ADDITIONAL MOBILE BROADBAND SPECTRUM AND THAT 2 GHZ SPECTRUM SHOULD BE EXPLORED FOR MOBILE BROADBAND

Mobile communications – and mobile broadband in particular – are critical elements of our Nation’s economy and are central to American life. As President Obama has observed, “America’s future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum. . . .”² It is for this reason that CTIA has lead efforts to make additional spectrum available for mobile broadband services. The 2 GHz spectrum identified in the Public Notice holds particular promise for mobile broadband, and CTIA applauds the measures taken both by the Commission and by NTIA to examine new spectrum bands for mobile broadband services. As Chairman Genachowski has observed, “[e]very day we delay freeing up new spectrum is a day with real costs to consumers, our economy, our global competitiveness, and our future.”³

Commenters in this proceeding agree that the 2 GHz spectrum identified by the Commission possesses characteristics that make it ideal for mobile broadband services. For example, Ericsson noted that the 2 GHz band’s proximity to licensed AWS-1 spectrum is “[a]n important feature” of this spectrum and that extending this band “has the potential to address

² The White House, Presidential Memorandum: Unleashing the Wireless Broadband Revolution (June 28, 2010) (“Presidential Memorandum”), 75 Fed. Reg. 38387 (July 1, 2010), <http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution>.

³ Julius Genachowski, Chairman, Federal Communications Commission, Remarks on Spectrum at The White House (April 6, 2011), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-305593A1.pdf.

expeditiously a significant part of the nation’s mobile broadband needs.”⁴ Sprint explains that: “[t]he spectrum is located near existing PCS and Advanced Wireless Services (“AWS”) allocations that are already being used by numerous wireless carriers, and compatible handsets likely could be produced relatively quickly to support innovative wireless services.”⁵ Similarly, AT&T found that “placing new mobile broadband services in spectrum bands directly adjacent to existing mobile services can create efficiencies in developing infrastructure equipment and consumer devices that will speed deployment and adoption of new services.”⁶

Participants also have highlighted the importance of international harmonization of 2 GHz spectrum, with T-Mobile noting that “use of the 2 GHz MSS band for terrestrial services would be consistent with international spectrum allocations, as the 2 GHz MSS band is identified as an International Mobile Telecommunications (“IMT-2000”) terrestrial band in the Table of Frequency Allocations.”⁷ Verizon Wireless also observes that this international harmonization “will help to drive greater economies of scale, reduce the risk of harmful interference, and promote more rapid deployment of mobile broadband networks and services.”⁸ Other commenters also stressed the international harmonization benefits of allocating wireless

⁴ Comments of Ericsson, ET Docket No. 10-142, at 3 (July 8, 2011) (“Ericsson Comments”).

⁵ Comments of Sprint Nextel Corporation, ET Docket No. 10-142, at 3 (July 8, 2011) (“Sprint Nextel Comments”).

⁶ Comments of AT&T Inc., ET Docket No. 10-142, at 4 (July 8, 2011) (“AT&T Comments”). *See also* Comments of T-Mobile USA, Inc., ET Docket No. 10-142, at 7-8 (July 8, 2011) (“T-Mobile Comments”) (“Second, the creation of an additional AWS allocation immediately adjacent to the current AWS-1 allocation will allow for more immediate equipment development and deployment. Current technology can more easily be extended to adjacent bands than to bands with different uplink/downlink separations.”).

⁷ T-Mobile Comments at 4.

⁸ Comments of Verizon Wireless, ET Docket No. 10-142, at 2 (July 8, 2011) (“Verizon Wireless Comments”).

broadband spectrum in the 2 GHz band.⁹ International harmonization promotes the development of innovative equipment¹⁰ and facilitates international roaming.¹¹

The record also demonstrates that allocation of spectrum in the 2 GHz band enables the Commission to license spectrum in large, contiguous blocks, and that such allocation would be highly beneficial. Large, contiguous blocks “make radio implementations tractable and ensure that a majority of customers can be covered with practical deployments.”¹² Further, “LTE and other 4G standards require large contiguous spectrum bands to achieve increased throughput speed and maximize spectral efficiency.”¹³ CTIA agrees that the 2 GHz band holds particular promise in terms of making large blocks of spectrum available for innovative wireless services. As the Telecommunications Industry Association observed, “[a]vailability of use of wider bandwidth technology, pooling of resources, shorter time-to-market, lower deployment costs,

⁹ See AT&T Comments at 4; Ericsson Comments at 4; Verizon Wireless Comments at 2.

¹⁰ AT&T Comments at 4 (“When U.S. wireless providers use the same spectrum as the rest of the world, infrastructure vendors, device manufacturers, and applications developers can take advantage of economies of scale associated with making a single piece of equipment or application that can be used almost anywhere, rather than having to devote scarce resources to making separate devices and applications for the U.S. marketplace.”); Ericsson Comments at 4 (warning that if the Commission creates unique allocations for the United States, the result will be increased costs and slowed development and deployment); T-Mobile Comments at 9 (“Creating a domestic spectrum allocation that is consistent with international use will result in economies of scope and scale and create a more robust equipment market for the band.”).

¹¹ AT&T Comments at 4 (“International harmonization also promotes international mobile roaming, making it easier for U.S. consumers to use their mobile devices abroad, and making the U.S. a more attractive destination for foreign business and tourism.”); T-Mobile Comments at 9 (“Moreover, consistent international allocations will allow consumers to more easily take their wireless devices to other countries without compatibility impediments.”).

¹² Ericsson Comments at 3.

¹³ AT&T Comments at 3.

and accelerated standard development will make the business case for innovation and investment, ultimately benefiting the consumer.”¹⁴

Finally, the record demonstrates widespread support for incentive auctions as a means to allocate spectrum in the 2 GHz MSS band.¹⁵ CTIA has long been an advocate for incentive auctions and believe they represent a highly efficient and beneficial means of allocating new spectrum. As Verizon Wireless observed, incentive auctions “are an innovative approach to repurposing spectrum that might help to promote mobile broadband deployment in various spectrum bands.”¹⁶ And these auctions “are the best method for determining the market value of new terrestrial spectrum rights while also compensating incumbent licensees for a portion of the value of returned spectrum.”¹⁷ CTIA once again reiterates its support for the efforts taken by the Administration, the Commission, and Congress to enable incentive auctions and encourages the Commission to explore their use in the reallocation of 2 GHz spectrum.

II. THE COMMISSION SHOULD SUPPORT NTIA EFFORTS TO REALLOCATE FEDERAL SPECTRUM AND PRIORITIZE THE PAIRING OF THE 1755-1780 MHZ BAND WITH 2155-2180 MHZ BAND

While the Commission’s most recent Public Notice focuses on the 2 GHz MSS Band, the AWS-3 band, and the AWS H and J Blocks, there are several other spectrum bands under consideration by the Commission and NTIA that also are excellent candidates for mobile broadband use. In particular, NTIA is reviewing possible reallocation of the 1755-1850 MHz band which, if achieved, would open up numerous additional options for band plans at 2 GHz.

¹⁴ Comments of the Telecommunications Industry Association, ET Docket No. 10-142, at 4 (July 8, 2011) (“TIA Comments”).

¹⁵ Comments of the Consumer Electronics Association, ET Docket No. 10-142, at 7-8 (July 8, 2011) (“CEA Comments”). *See also* AT&T Comments at 7-8; Ericsson Comments at 2; T-Mobile Comments at 11-12; TIA Comments at 6-7; Verizon Wireless Comments at 2

¹⁶ Verizon Wireless Comments at 2.

¹⁷ AT&T Comments at 8.

The substantial support in this proceeding for reallocation of the 1755-1850 MHz band demonstrates that the Commission should focus its attention on this spectrum and support NTIA's efforts to reallocate it. As explained more fully in CTIA's initial comments, CTIA and its members strongly favor pairing of the 1755 to 1780 MHz band with spectrum from the 2155 to 2180 MHz band and believe that the Commission should focus on this outcome.¹⁸

NTIA selected the 1755-1850 MHz band as the highest priority block in its examination of candidate bands that could be repurposed for mobile broadband services. It did so for several reasons, including "the nature of current Federal agency use of the spectrum, the likelihood of successfully repurposing within ten years, the international harmonization with mobile operations, the existence of mature wireless equipment, and the spectrum's advantageous propagation characteristics for mobile operations."¹⁹ CTIA has previously supported the allocation of the 1755-1850 MHz band for mobile broadband and urged the prioritization of this spectrum. Indeed, and as noted by NTIA, this spectrum shares the same positive characteristics as the spectrum highlighted by the Commission in this proceeding.

CTIA agrees with T-Mobile that "[i]f some or all of the 1755-1850 MHz band is made available for commercial wireless broadband, that spectrum must also be considered in the Commission's assessment of the 2 GHz MSS spectrum."²⁰ As noted above, there is widespread support for pairing the 1755-1780 MHz band with the AWS-2 upper J Block and the AWS-3

¹⁸ CTIA Comments at 8-10.

¹⁹ National Telecommunications and Information Administration, *First Interim Progress Report on the Ten-Year Plan and Timetable* at 4 (April 2011) ("*NTIA Interim Progress Report*"), available at http://www.ntia.doc.gov/reports/2011/First_Interim_Progress_Report_04012011.pdf.

²⁰ T-Mobile Comments at 2.

band.²¹ However, there are other beneficial pairings that could result from reallocation of the 1755-1780 MHz band. For example, AT&T and Verizon Wireless have highlighted the possibility of pairing the 1780-1800 MHz band with the 2180-2200 MHz portion of the 2 GHz MSS band.²²

The Commission, NTIA, and participants in this proceeding all agree that the 1755-1780 MHz band possesses characteristics that give it tremendous promise for mobile broadband deployment.²³ Comments in this proceeding also demonstrate that the reallocation of this band will result in numerous additional options for band plans and spectrum pairings. As such, CTIA urges the Commission to support NTIA's efforts to reallocate this band for mobile broadband services and agrees with T-Mobile that "[i]t is premature for the Commission to set a course for [2 GHz] spectrum until there is a clearer picture as to the ultimate disposition of the entire 1755-1850 MHz band."²⁴

III. THE WIRELESS INDUSTRY CONTINUES TO INVESTIGATE AND ANALYZE THE MOST EFFICIENT COMBINATION OF 2 GHZ SPECTRUM

In the Public Notice, the Commission sought specific comment on three proposed band plans involving the 2 GHz MSS spectrum, the AWS H and J Blocks, and the AWS-3 band. In its opening Comments, CTIA encouraged the Commission to undertake a holistic evaluation of the 2 GHz spectrum band, including an evaluation of bands not reflected in the three plans proffered

²¹ AT&T Comments at 5; Ericsson Comments at 6-7; Sprint Nextel Comments at 10; T-Mobile Comments at 6; Verizon Wireless Comments at 4-5.

²² AT&T Comments at 6; Verizon Wireless Comments at 5.

²³ See, e.g., Federal Communications Commission, *Connecting America: The National Broadband Plan* at 86-87 (2010) ("Consequently, pairing the AWS-3 band with spectrum from the 1755-1780 MHz band has the potential to bring benefits of a global equipment ecosystem to this band."); *NTIA Interim Progress Report* at 4; AT&T Comments at 5; Ericsson Comments at 6-7; T-Mobile Comments at 6-9; Verizon Wireless Comments at 4-5.

²⁴ T-Mobile Comments at 11.

by the Commission. Commenters have offered particular feedback on the three proposed band plans, with some having submitted potential band plans of their own. As CTIA noted in its opening Comments, the wireless industry is actively studying spectrum for possible mobile broadband deployment, with the goal of optimizing all potential spectrum from 1.6 to 2.3 GHz.

The initial comments in this proceeding demonstrate a range of proposals regarding a band plan at 2 GHz. Sprint Nextel, AT&T, Verizon Wireless, T-Mobile, and Ericsson have all made proposals that differ from the three band plans put forth by the Commission, with AT&T, Verizon Wireless, and Ericsson submitting alternative band plans as part of their comments.²⁵ For example, AT&T found that another option would be an asymmetric pairing of the 1695-1710 MHz band with the 1995-2025 MHz band.²⁶ Sprint Nextel proposed options such as reversing the uplinks and downlinks in the existing 2 GHz MSS bands or designating the entire current 2 GHz MSS band as downlink only.²⁷ Verizon Wireless has suggested that the uplink segment of the 2 GHz MSS band could be moved to reallocated spectrum above 1780 MHz.²⁸ T-Mobile stated that it “may be desirable to reconfigure this [H Block and Lower J Block] spectrum to create a guard band between PCS and MSS operations.”²⁹ Ericsson also proposed that the Commission look into using the upper H Block as a guard band³⁰ and proposed an AWS-4 band at 1675-1710 MHz and 2075-2110 MHz.³¹ And, as stated above, numerous commenters have proposed pairings of 1755-1780 and 2155-2180 MHz spectrum, as well as a pairing of 1780-

²⁵ AT&T Comments at 5-7, Attachment A; Ericsson Comments at 3-4; Sprint Nextel Comments at 11-12; T-Mobile Comments at 11; Verizon Wireless Comments at 5.

²⁶ AT&T Comments at 7.

²⁷ Sprint Nextel Comments at 11-12.

²⁸ Verizon Wireless Comments at 6.

²⁹ T-Mobile Comments at 11.

³⁰ Ericsson Comments at 9.

³¹ Ericsson Comments at 4.

1800 MHz and 2180-2200 MHz spectrum. Both of these pairings would be foreclosed by adoption of any of the three band plans offered by the Commission.

Opening comments have also registered concern with elements of the three band plans in the Public Notice. For example, Sprint Nextel observed that all three band plans could result in harmful interference to its PCS G Block spectrum.³² AT&T and T-Mobile also noted concern that the three band plans (and the 60 MHz proposal in particular) could cause interference to Broadband PCS mobile devices.³³ In fact, AT&T cautioned that “[w]hile the proposed 50 and 60 MHz pairing plans may seem to be the easier solution today, they risk sacrificing significant public interest benefits in the interest of expediency.”³⁴ Ericsson, meanwhile, argued that the Commission’s three band plan concepts “give short shrift to the AWS-3 band” and that the Commission’s 60 MHz band plan concept would increase interference to PCS operations.³⁵

It is clear that the subject of 2 GHz band plans is under active discussion by the wireless industry, but the current lack of consensus shows that additional discussion and consideration of alternative approaches is warranted. As such, the best course for the Commission at this time would be to “engage in a holistic and comprehensive approach to band-planning in which the 2 GHz MSS frequencies would be addressed as part of a larger, coordinated band plan developed to make most efficient use of spectrum for terrestrial mobile broadband services.”³⁶ CTIA agrees that the Commission should “take into account the synergies that exist with other spectrum bands, including those currently being considered for future reallocation.”³⁷ CTIA will

³² Sprint Nextel Comments at 10-11.

³³ AT&T Comments at 5-6; T-Mobile Comments at 6-7.

³⁴ AT&T Comments at 5.

³⁵ Ericsson Comments at 5, 8-9.

³⁶ AT&T Comments at 4.

³⁷ Verizon Wireless Comments at 2.

continue to work with its members, the FCC, and NTIA to reach consensus on the most beneficial band plan for mobile broadband spectrum in the 1.6 to 2.3 GHz band.

IV. CONCLUSION

The widespread support for allocation of 2 GHz spectrum to mobile broadband demonstrates that the Commission and NTIA are correct to focus on spectrum in this range and to evaluate band plans that would make the best use of this spectrum. In addition, CTIA supports efforts to reallocate Federal spectrum between 1755 and 1850 MHz. CTIA continues to believe that the Commission should prioritize the pairing of the 2155-2180 MHz spectrum with spectrum at 1755-1780 MHz, and that the wireless ecosystem would be best served by a holistic examination of the various spectrum bands under evaluation by the Commission and NTIA. CTIA looks forward to such a comprehensive – and collaborative – process, which will result in the most effective, beneficial use of this spectrum.

Respectfully submitted,

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