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

In the Matter of	)	
	)	
Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands	)	WT Docket No. 12-70
	)	
Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz	)	ET Docket No. 10-142
	)	
Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands	)	WT Docket No. 04-356

COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

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TABLE OF CONTENTS

Page

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	)	
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COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

I. INTRODUCTION AND SUMMARY

CTIA – The Wireless Association® ("CTIA")[1] respectfully submits these Comments in response to the Commission's Notice of Proposed Rulemaking and Notice of Inquiry ("*AWS-4 Notice*") proposing service, technical, assignment, and licensing rules for spectrum between 2000-2020 MHz and 2180-2200 MHz (the "AWS-4 spectrum" or "2 GHz MSS band").[2] In the *AWS-4 Notice*, the Commission stated its intention to "create a solid and lasting foundation" for the provision of mobile broadband service in AWS-4 spectrum.[3] CTIA has played an active role

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[1] CTIA is the international association of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service ("CMRS") providers and manufacturers, including cellular, Advanced Wireless Service, 700 MHz, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

[2] *Service Rules for Advanced Wireless Service in the 2000-2002 MHz and 2180-2200 MHz Bands*, Notice of Proposed Rulemaking and Notice of Inquiry, FCC 12-32 (2012) ("*AWS-4 Notice*").

[3] *Id.* at ¶ 2.

in Commission proceedings aimed at facilitating terrestrial broadband use of this spectrum, and is pleased to offer further comment on how the Commission can best "provide for flexible use of this spectrum, [] encourage innovation and investment in broadband, and . . . provide a stable regulatory environment in which broadband deployment could develop."[4] CTIA commends the Commission for its efforts to enhance the value of this spectrum for mobile broadband use, and looks forward to the entry of DISH Network into the mobile broadband ecosystem. While CTIA eagerly anticipates the infusion of additional spectrum and competition, these comments also explore some of the attendant issues that are raised by the Commission's Notice, the recent adoption of spectrum legislation, and the Commission's stated desire to make the most efficient use of allocated spectrum resources. Thus, CTIA encourages the Commission to move quickly to examine issues concerning interference, efficient use of spectrum, build-out requirements, and the public interest considerations associated with increased terrestrial rights.

As an initial matter, CTIA applauds the Commission for opening this proceeding. As has been repeatedly stressed for nearly three years, there is an urgent need for additional spectrum to accommodate mobile broadband services, demand for which is increasing at an exponential rate. The National Broadband Plan set forth an aggressive timetable for deploying new spectrum, and the 2 GHz spectrum will play an important role in realizing the Commission's objectives and the wireless industry's needs. By addressing increased terrestrial use of the 2 GHz spectrum in a rulemaking, rather than in a waiver proceeding, the Commission will enable a thorough and holistic examination of this spectrum and its role in meeting the Commission's policy objectives.

While CTIA supports mobile use of this spectrum, the Commission must be mindful of potential harmful interference that could result between terrestrial mobile services in the AWS-4

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[4] *Id.* at ¶ 1.

band and the downlink use of neighboring PCS operations, due to the proximity of the proposed uplink in the AWS-4 band. CTIA opposes any operations, band plan, or service rules that would result in interference to adjacent commercial mobile wireless networks. It is critical that the Commission thoroughly examine the technical implications of its proposals and not adopt any rule that would result in harmful interference to either incumbent networks or to future networks on spectrum scheduled to be auctioned and licensed by the Commission pursuant to the Middle Class Tax Relief and Job Creation Act of 2012.

CTIA encourages the Commission to explore the proposals raised in the Notice of Inquiry portion of the *AWS-4 Notice*, as well as by industry commenters, to determine whether an alternative band plan may lead to more efficient spectrum use. An alternative band plan, such as that proposed by the Commission, may have the potential to address interference issues. Moreover, by obviating the need to create large guard bands, an alternative band plan may enable more spectrum to be put to productive use.

CTIA also believes that the Commission should investigate the public interest considerations associated with granting increased terrestrial rights to incumbents in this band. In past proceedings, numerous commenters have encouraged the Commission to consider various alternatives that would enable terrestrial use of this spectrum, such as incentive auctions or leasing proposals.

Finally, the Commission should reject its proposed construction requirements as they are unprecedented in their impact on licensees and the public, and do not serve the public interest.

CTIA and its members look forward to continued active engagement with the Commission on issues related to 2 GHz spectrum, and CTIA is enthusiastic about the great potential this spectrum has to facilitate the continued benefits of mobile broadband.

II. CTIA COMMENDS THE COMMISSION FOR UNDERTAKING THIS IMPORTANT PROCEEDING TO UNLEASH ADDITIONAL SPECTRUM FOR MOBILE BROADBAND SERVICES.

CTIA commends the Commission's initiation of this proceeding and its efforts to unleash additional spectrum for mobile broadband services. As the Commission noted in the *AWS-4 Notice*, the "rapid adoption of smartphones and tablet computers, combined with deployment of high-speed 3G and 4G technologies, is driving more intensive use of America's mobile networks,"[5] creating an urgent need for additional spectrum. In fact, the spectrum crunch that CTIA first identified nearly three years ago is a bigger concern than ever, and the AWS-4 spectrum can play an important role in addressing this looming crisis.

The benefits of continued wireless broadband innovation and deployment are clear. Chairman Genachowski recently observed that "[w]hether it is GDP, the apps economy or job creation, it is clear that wireless innovation and investment has helped lead us out of economic crisis and into recovery over the past three years."[6] Today, the mobile apps economy alone supports nearly 500,000 jobs, while wireless contributes about $150 billion annually to the U.S. GDP.[7] Wireless broadband has also greatly enhanced education, public safety, and health care. In short, "[m]obile broadband is changing the world for the better."[8]

While the benefits of mobile broadband are clear and innumerable, it is also evident that widespread mobile broadband adoption is placing a strain on wireless networks. Numerous statistical analyses and projections demonstrate the ever-escalating mobile traffic load and

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[5] *Id.* at ¶ 10.

[6] FCC Chairman Julius Genachowski, Prepared Remarks to International CTIA Wireless 2012 at 2 (May 8, 2012) ("Genachowski 2012 CTIA Remarks"), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-313945A1.pdf.

[7] *Id.* at 3.

[8] *Id.*

spectrum shortage. In 2011, global mobile data traffic more than doubled for the fourth year in a row, and 2011's mobile data traffic was eight times the size of the entire global Internet in 2000.[9] Notably, in 2011, a 4G connection generated 28 times more traffic on average than a non-4G connection,[10] an ominous statistic in light of the various 4G deployments in progress by carriers throughout the country and the rapid 4G adoption by these carriers' customers. There are now more active mobile devices than people in the United States,[11] and Cisco projects that by the end of this year, the number of mobile-connected devices will exceed the number of people on earth.[12] Based on projections of mobile data growth, the FCC has forecast that a spectrum deficit approaching 300 MHz is likely by 2014.[13] It is therefore essential that additional spectrum be identified and allocated for mobile broadband.

The recent launch of Apple's new iPad serves as a real-world example of the challenges that come hand and hand with increased mobile broadband usage. For the first time, the iPad was able to connect to carriers' LTE networks, and the new iPad also features a high definition screen that its predecessor did not have. As a result, this device is increasingly used to stream mobile video, consuming mobile data at a greater rate.[14] Indeed, Verizon estimates that

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[9] Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2011-2016 at 1 (Feb. 14, 2012), *available at* http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.pdf ("2012 Cisco Report").

[10] *Id.* at 2.

[11] Genachowski 2012 CTIA Remarks at 2.

[12] 2012 Cisco Report at 3.

[13] FCC Staff Technical Paper, *Mobile Broadband: The Benefits of Additional Spectrum* at 26 (Oct. 2010) ("October 2010 Technical Paper").

[14] Anton Troianovski, Video Speed Trap Lurks in New iPad, Wall Street Journal (Mar. 22, 2012), *available at* http://online.wsj.com/article/SB10001424052702303812904577293882009811556.html ("For the next hour, Mr. Park watched concert videos and other clips and browsed social-media sites.

streaming video over an LTE connection uses double the amount of data as the same video over a 3G connection.[15] And as more people make use of high-bandwidth applications and features, the result will be strain on 4G networks.[16] U.S. mobile networks now run at 80 percent of capacity, compared to the global average of 65 percent.[17] Without more spectrum, mobile Internet demand is projected to overwhelm capacity within two years.[18]

The AWS-4 spectrum identified by the Commission could play an important role in the Commission's objective to unleash 300 megahertz of spectrum for mobile broadband by 2015, as other bands identified by the Commission have either become unavailable or cannot be deployed for several years.[19] For example, the Lower 700 MHz D Block has been reallocated to Public Safety,[20] there is considerable regulatory uncertainty surrounding the Wireless Communications Service spectrum, and the International Bureau has proposed to vacate its conditional waiver to

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On Tuesday, five days after getting the new iPad, he found he was already two-thirds of the way through his monthly allotment of 3 gigabytes of wireless data.").

[15] *Id.*

[16] Tom Simonite, The New iPad Could Clog 4G Networks, Technology Review (Mar. 13, 2012), *available at* http://www.technologyreview.com/computing/39896/.

[17] David W. Sosa, Ph.D. and Marc Van Audenrode, Ph.D., *Private Sector Investment and Employment Impacts of Reassigning Spectrum to Mobile Broadband in the United States* at 1 (August 2011), *available at* http://www.mobilefuture.org/page/-/spectrum-impact-study.pdf.

[18] October 2010 Technical Paper at 26.

[19] In the National Broadband Plan, the Commission identified 300 MHz of spectrum that it endeavored to allocate for mobile broadband by 2015. This spectrum consisted of 20 MHz of Wireless Communications Service ("WCS") spectrum, 60 MHz of AWS-3/AWS-3 spectrum, the 10 MHz D Block, 90 MHz of MSS spectrum, and 120 MHz of broadcast television spectrum. Federal Communications Commission, *Connecting America: The National Broadband Plan* at 84 (2010).

[20] *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156, § 6101 (2012).

LightSquared that would have permitted mobile broadband use of the MSS L-Band.[21] As such, it is crucial that the Commission undertake a holistic yet thorough review of this spectrum to craft service rules that will best promote its broadband policy objectives.

CTIA has been an active participant in the Commission's proceedings regarding the AWS-4 spectrum and continues to believe that the characteristics of the band make it ideal for mobile broadband, a sentiment that has been shared by many other members of the wireless industry. In past proceedings, numerous parties have noted that spectrum bands below 3 GHz are the most desirable for mobile broadband because of their propagation characteristics,[22] and that large contiguous blocks of spectrum best enable next-generation network standards.[23] Further, commenters have highlighted that international harmonization of spectrum will lower

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[21] *International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver*, Public Notice, IB Docket No. 11-109 (Feb. 15, 2012).

[22] *Federal Operations in the 1755-1850 MHz Band: The Potential for Accommodating Third Generation Mobile Systems*, Interim Report, U.S. Department of Commerce at 7 (rel. Nov. 15, 2000) ("NTIA Interim Report"), *available at* http://www.ntia.doc.gov/osmhome/reports/imt2000/imt2000.pdf (explaining that the physical processes governing the propagation of radio waves in the frequency range below 3 GHz let them be efficiently transmitted and received by small user devices and give them the ability to support high data rates, making them ideal for mobile telecommunications uses). *See also, e.g.*, Comments – NBP Public Notice # 6 of T-Mobile USA Inc., GN Docket No. 09-51, at 16 (Oct. 23, 2009) ("T-Mobile NBP PN #6 Comments") ("The identified spectrum also should reside below 3.7 GHz to ensure that it can be used economically to deliver mobile broadband services."); Comments of Motorola, Inc., GN Docket No. 09-51, at 10 (Oct. 23, 2009) ("Motorola NBP PN #6 Comments") (stating that "Motorola believes that mobile operations are best suited in bands below 4 GHz").

[23] *Mobile Broadband Spectrum Demand*; Comments of 3G Americas—NBP Public Notice #6, GN Docket No. 09-51, at 8 (Oct. 23, 2009) ("[S]pectrum allocated for commercial mobile broadband should be as contiguous as possible. Current allocations are primarily based on 5 and 10 MHz blocks. Such allocations may have been appropriate for second, and even third, generation data services, but they are not sufficient to support advanced data services. Wider bandwidth allocations are better suited for future, data-intensive wireless broadband services.").

equipment costs and facilitate innovation.[24] Finally, participants stressed the importance of allocating spectrum that is adjacent to current spectrum allocations to the extent possible.[25]

The 2 GHz MSS spectrum shares all of these characteristics and its use for mobile broadband has the widespread support of the wireless industry. Ericsson has observed 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 expeditiously a significant part of the nation's mobile broadband needs."[26] 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."[27] And allocations in large, contiguous blocks "make radio implementations tractable and ensure that a majority of customers can be covered with practical

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[24] T-Mobile NBP PN #6 Comments at 16 ("The spectrum identified should be in blocks that are largely contiguous and globally harmonized to the extent possible, in order to permit greater efficiencies in the production of mobile devices and equipment, with corresponding savings for U.S. mobile users."); Motorola NBP PN #6 Comments at 10 ("When possible, harmonization with global allocations should be a goal to drive equipment costs downward and to facilitate roaming on a regional and global basis. Harmonization will help drive investment in technologies and services and will result in lower costs due to economies of scale in the global market.").

[25] Reply Comments of CTIA – The Wireless Association® on NBP Public Notice #6, Spectrum For Broadband, GN Docket No. 09-41, at 10 (Nov. 13, 2009).

[26] Comments of Ericsson, ET Docket No. 10-142, at 3 (July 8, 2011) ("Ericsson 2 GHz Comments").

[27] Comments of AT&T Inc., ET Docket No. 10-142, at 4 (July 8, 2011) ("AT&T 2 GHz Comments"). *See also* Comments of T-Mobile USA, Inc., ET Docket No. 10-142, at 7-8 (July 8, 2011) ("T-Mobile 2 GHz 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."); Comments of Sprint Nextel Corporation, ET Docket No. 10-142, at 3 (July 8, 2011) ("Sprint Nextel 2 GHz Comments") (noting that the proximity of 2 GHz spectrum to AWS and PCS spectrum means that "compatible handsets likely could be produced relatively quickly to support innovative wireless services").

deployments."[28] Further, "LTE and other 4G standards require large contiguous spectrum bands to achieve increased throughput speed and maximize spectral efficiency."[29]

For the reasons above, CTIA applauds the Commission for undertaking the instant proceeding, and encourages it to expeditiously review the record and examine approaches that lead to efficient use of all bands under consideration. In the instant rulemaking, the Commission should pay particular attention to how the policies adopted for this 40 MHz of spectrum will impact the ability to provide mobile broadband in neighboring spectrum blocks and to make the most efficient use of spectrum potentially available for mobile broadband use.

CTIA also commends the Commission for initiating a rulemaking on terrestrial use of the 2 GHz MSS band, rather than exploring these issues in the context of a waiver. In the recent proceeding regarding DISH Network's requested waiver of Ancillary Terrestrial Component ("ATC") rules, CTIA stressed that a rulemaking was necessary to explore the full range of technical and policy issues implicated by terrestrial use of the 2 GHz MSS band.[30] As AT&T observed in the Commission's 2 GHz Public Notice proceeding, by considering individual spectrum blocks without regard to the broader issues raised, the Commission would risk "sacrificing significant public interest benefits in the interest of expediency."[31] Conversely, by issuing the *AWS-4 Notice*, the Commission is promoting the development of a complete, informed record on these matters. CTIA and its members look forward to further active participation in this proceeding and evaluation of these important issues.

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[28] Ericsson 2 GHz Comments at 3.

[29] AT&T 2 GHz Comments at 3.

[30] Comments of CTIA – The Wireless Association®, IB Docket No. 11-149 at 4-13 (Oct. 17, 2011).

[31] AT&T 2 GHz Comments at 5.

III. THE COMMISSION MUST BE MINDFUL OF POTENTIAL HARMFUL INTERFERENCE BETWEEN THE 2 GHZ MSS SPECTRUM AND ADJACENT PCS OPERATIONS.

In the *AWS-4 Notice*, the Commission correctly observes that flexible use of 2 GHz spectrum must be balanced against the protection of operations in neighboring bands.[32] CTIA supports the Commission's effort in the *AWS-4 Notice* to gather information on how best to prevent interference between these neighboring services. The record developed in various proceedings surrounding this spectrum has demonstrated the real risk of interference to neighboring PCS licensees, and CTIA urges the Commission to be mindful of this potential harm as it develops regulations in this proceeding. Not only will the regulations adopted in this proceeding impact the viability of mobile broadband in the AWS-4 spectrum, but they could also have a major impact on existing services and on the potential for other neighboring spectrum blocks to be allocated for mobile broadband.

The risk of interference from the 2 GHz MSS band to adjacent blocks is well-documented in Commission proceedings. The lower MSS uplink band is directly adjacent to the H Block, is only 5 MHz from the PCS G Block licensed to Sprint Nextel, and only 10 MHz from the PCS C Block that has already been deployed for mobile broadband services. In earlier Commission proceedings, numerous parties, including 2 GHz MSS incumbent TerreStar,[33] highlighted the risky interference environment created by the close proximity of mobile broadband uplink and

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[32] *AWS-4 Notice* at ¶ 29.

[33] Comments of TerreStar Networks, Inc., ET Docket No. 10-142, at 4-5 (July 8, 2011) ("TerreStar 2 GHz Comments") ("The juxtaposition of uplink and downlink bands in adjacent spectrum creates unique interference issues, including the risk of H-Block base station transmitters interfering with MSS satellite and ATC base stations. This risk of interference is well known to the Commission, and has been a matter of public record for more than six years. These issues should be taken into account when considering potential 2 GHz band plans.").

downlink operations.[34] CTIA encourages the Commission to carefully consider the comments on the record in this and related proceedings and not take action that would place adjacent PCS operations at the risk of harmful interference from AWS-4 services.

Further, CTIA notes that the Middle Class Tax Relief and Job Creation Act of 2012 directed the Commission to allocate and auction the H Block (1915-1920 MHz and 1995-2000 MHz) within three years, unless it determines that this spectrum "cannot be used without causing harmful interference to commercial mobile service licensees in the frequencies between 1930 megahertz and 1995 megahertz."[35] Thus, if the Commission endeavors to make this additional ten megahertz of spectrum available for mobile broadband services, it must take steps to demonstrate that the H Block and adjacent MSS spectrum will be allocated in a way that does not cause interference to adjacent PCS operations.

In this and related Commission proceedings, CTIA's members have undertaken considerable efforts to evaluate the potential interference environment among the various 2 GHz spectrum bands. CTIA urges the Commission to closely review the technical submissions in this proceeding to most appropriately address any interference risks in this band prior to its licensing for mobile broadband.

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[34] Verizon Wireless 2 GHz Comments at 6 ("Today, the 1930-1990 MHz PCS band is used extensively across the country for base station transmissions ('downlink'). Use of the 2000-2020 MHz portion of the repurposes MSS band for mobile transmissions ('uplink') would create a significant interference potential between these two systems."); T-Mobile 2 GHz Comments at 8 ("Finally, as T-Mobile has pointed out in the past, the Commission must avoid configuring downlink spectrum adjacent to uplink spectrum.").

[35] *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156, § 6401(b)(4) (2012).

IV. THE COMMISSION SHOULD EXPLORE WHETHER THE PROPOSALS IN THE NOTICE OF INQUIRY WILL LEAD TO A MORE EFFICIENT ALLOCATION OF SPECTRUM RESOURCES.

Over the past two years, the Commission has invited comment on potential mobile broadband deployment in several other bands between 1675 MHz and 2.2 GHz.[36] In these proceedings, CTIA has encouraged the Commission to take a holistic approach to band planning that would take the issues raised by these different spectrum bands and their interrelation into account. Now, in the *Notice of Inquiry* in this proceeding, the Commission has sought comment on an alternative band plan which incorporates NTIA's proposal to reallocate the 1695-1710 MHz band from Federal to commercial use. An alternative band plan, such as that proposed by the Commission, has the potential to address the interference issues raised above. Moreover, by obviating the need to create large guard bands, an alternative band plan may enable more spectrum to be put to productive use. CTIA encourages the Commission's examination of potential alternative band plans that could put this spectrum to its highest and best use.

In previous proceedings, and in the recent 2 GHz Public Notice proceeding in particular, numerous parties have noted the interplay of the various bands in the 2 GHz range, and how Commission action with respect to one block could have a significant impact on others. For this reason, CTIA agreed with AT&T's suggestion that the Commission "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

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[36] *See, e.g.*, *Office of Engineering and Technology Requests Information on Use of 1675-1710 MHz Band*, Public Notice, ET Docket No. 10-123 (June 4, 2010); *Spectrum Task Force Requests Information on Frequency Bands Identified by NTIA as Potential Broadband Spectrum*, Public Notice, ET Docket No. 10-123 (Mar. 8, 2011); *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).

spectrum for terrestrial mobile broadband services."[37] CTIA encourages the Commission to conduct this rulemaking with that approach in mind, focusing on an effort to harmonize all the potential mobile broadband spectrum in the 2 GHz range. Indeed, as part of the National Broadband Plan's spectrum objectives, the Commission has proposed the allocation and licensing of the H and J Blocks. As noted above, the H block was also identified for auction and license, subject to conditions, in the recently adopted spectrum legislation. Accordingly, these bands are cleared (subject to reimbursement) and identified for allocation and assignment.[38] A holistic evaluation of the 2 GHz spectrum will help the Commission most effectively address the various complexities inherent to multiple blocks of spectrum in this band.

In the 2 GHz Public Notice proceeding, numerous parties submitted alternative band plans for the 2 GHz spectrum that may lead to a more efficient use of spectrum resources. AT&T, Verizon Wireless, T-Mobile, Ericsson, and Sprint Nextel all proffered options that differed from the band plans put forth by the Commission, with AT&T, Verizon Wireless, and Ericsson submitting alternative band plans as part of their comments.[39] In that proceeding, AT&T found that another option would be an asymmetric pairing of the 1695-1710 MHz band with the 1995-2025 MHz band.[40] Verizon Wireless suggested that the uplink segment of the 2 GHz MSS band could be moved to reallocated spectrum above 1780 MHz.[41] While not

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[37] AT&T 2 GHz Comments at 4.

[38] *See Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands*, Notice of Proposed Rulemaking, 19 FCC Rcd 19263, ¶¶ 51-62 (2004).

[39] AT&T 2 GHz Comments at 5-7, Attachment A; Ericsson 2 GHz Comments at 3-4; Sprint Nextel 2 GHz Comments at 11-12; T-Mobile 2 GHz Comments at 11; Verizon Wireless 2 GHz Comments at 5.

[40] AT&T 2 GHz Comments at 7.

[41] Verizon Wireless 2 GHz Comments at 6.

advocating for a specific band plan, Sprint Nextel noted possible alternatives 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.[42] CTIA is therefore pleased that the Commission has initiated this proceeding, as in this rulemaking the Commission will be able to "take into account the synergies that exist with other spectrum bands, including those currently being considered for future reallocation."[43]

In the Notice of Inquiry portion of the *AWS-4 Notice*, the Commission has sought comment on its proposed "2 GHz Extension Band Concept," which would involve downlink operations at 2180-2200 MHz paired with uplink operations at 1695-1710 MHz, as well as a 1995-2025 MHz downlink-only band.[44] CTIA encourages the Commission to carefully consider whether either the Notice of Inquiry's 2 GHz Extension Band Concept or those band plans of the industry commenters in the 2 GHz Public Notice proceeding would make the most efficient use of spectrum. An alternative band plan, such as that proposed by the Commission, has the potential to address the interference issues raised above. Moreover, by obviating the need to create large guard bands, an alternative band plan may enable more spectrum to be put to productive use. Furthermore some alternate plans may allow for a broader and a more likely integration of new spectrum into mobile devices and make more efficient use of the assignments. CTIA looks forward to reviewing and considering the wireless industry's contributions to the Notice of Inquiry and encourages the Commission to explore possible alternatives that could lead to more efficient allocation of spectrum.

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42 Sprint Nextel 2 GHz Comments at 11-12.

43 Verizon Wireless 2 GHz Comments at 2.

44 *AWS-4 Notice* at ¶¶ 137-140.

V. THE COMMISSION SHOULD INVESTIGATE THE PUBLIC INTEREST CONSIDERATIONS ASSOCIATED WITH GRANTING INCREASED TERRESTRIAL RIGHTS IN THIS BAND.

In the *AWS-4 Notice*, the Commission has proposed to assign all AWS-4 terrestrial licenses to the incumbent MSS licensee based on its prior analysis that "we cannot grant to a third party the right to use licensed MSS spectrum for terrestrial use without impacting the rights of existing satellite licensees."[45] The Commission also sought comment on other licensing approaches, such as the assignment of new initial terrestrial licenses via competitive bidding in addition to incumbent MSS licenses.[46] In previous proceedings, the Commission has sought comment on the use of incentive auctions, voluntary relinquishment of rights, and other approaches for bringing the 2 GHz MSS spectrum to market.[47] CTIA notes that the record developed in response to the Commission's *2010 MSS Flexibility NPRM and NOI* contained substantial support for the use of incentive auctions as a means of facilitating the transition of the 2 GHz (and other MSS bands) spectrum from satellite to terrestrial use.[48] CTIA encourages the

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[45] *Id.* at ¶ 69.

[46] *AWS-4 Notice* at ¶ 80.

[47] *Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Notice of Proposed Rulemaking and Notice of Inquiry, FCC 10-126 ¶¶ 28-29 (July 15, 2010).

[48] Comments of T-Mobile USA, Inc., ET Docket No. 10-142, at 9 (Sept. 15, 2010) ("Given the potential benefits of incentive auctions as an additional tool in the Commission's toolbox, the Commission should not delay in pursuing such option."); Comments of AT&T Inc., ET Docket No. 10-142, at 12 (Sept. 15, 2010) ("The potential value to be realized from an incentive auction of 2 GHz spectrum with full terrestrial rights is substantial."); Comments of Verizon Wireless, ET Docket No. 10-142, at 7-8 (Sept. 15, 2010) ("In particular, Verizon Wireless strongly supports the implementation of voluntary incentive auctions and encourages the Commission to work closely with Congress to adopt and implement legislation authorizing this type of auction."); Comments of the Telecommunications Industry Association, ET Docket No. 10-142, at 6 (Sept. 15, 2010) ("Providing the Commission with the authority to conduct voluntary incentive auctions in the MSS bands will create an option for current MSS licensees to make market-based decisions that will maximize the use of spectrum.").

Commission to weigh such public interest considerations at it develops policies and regulations in this proceeding.

For example, the Commission should consider whether a full forty megahertz allocation is necessary for MSS use. In that regard, CTIA notes that the predecessors-in-interest of TerreStar and DBSD have previously stated that twenty megahertz was sufficient to meet peak demand levels in 2005.[49] However, those projections made by the former incumbent 2 GHz MSS licensees for peak demand usage have not materialized, logically raising the question of whether twenty megahertz of spectrum is now needed for MSS in the 2 GHz band.[50] CTIA urges the Commission to carefully scrutinize the usage of 2 GHz MSS spectrum and consider closely the amount of spectrum required for MSS service in this band. Given the urgent need for spectrum by existing mobile broadband providers, CTIA encourages the Commission to carefully consider whether a full forty megahertz allocation is necessary for MSS use, or whether the MSS allocation should be limited to only a portion of the band, potentially freeing up additional spectrum resources.

VI. THE COMMISSION SHOULD REJECT ADOPTION OF UNPRECEDENTED PENALTIES FOR FAILURE TO MEET CONSTRUCTION REQUIREMENTS.

In the *AWS-4 Notice*, the Commission has proposed unprecedented penalties for failure to meet buildout requirements in connection with AWS-4 licenses.[51] CTIA is strongly opposed to these proposals as contrary to the public interest and unduly burdensome and potentially harmful not only to licensees but also to potential consumers of the new service.

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[49] *Use of Returned Spectrum in the 2 GHz Mobile Satellite Service Frequency Bands*, Order, 20 FCC Rcd 19696, ¶¶ 27, 34 (2005).

[50] *AWS-4 Notice* at ¶ 8 ("To date there remains little commercial use of this spectrum for MSS and none for terrestrial (ATC) service.").

[51] *Id.* at ¶¶ 90-98.

Specifically, the Commission has suggested that if an AWS-4 licensee fails to meet its interim buildout requirement with respect to a particular authorization, all of the licensee's AWS-4 license authorizations shall terminate automatically.[52] In addition, if an AWS-4 licensee fails to meet its final buildout requirement for any authorization, the Commission has proposed that its AWS-4 license for each license authorization area in which it fails to meet the buildout requirement shall terminate automatically.[53] These penalties are unprecedented for buildout commitments and strongly contravene the public interest.

The Commission has always recognized that there should be an appropriate process for determination of the ability of a licensee to meet its construction requirements.[54] Further, there are often circumstances outside the control of the licensee that inhibit its ability to meet all construction requirements. As such, the Commission has in the past appropriately balanced the need for performance requirements with the ability to provide flexibility to licensees to meet these requirements.[55] CTIA submits that there is no need in this instant case to depart from well-functioning precedent with respect to penalizing licensees for failing to meet construction requirements.

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[52] *Id.* at ¶ 94.

[53] *Id.*

[54] *See, e.g., Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, Report and Order, 18 FCC Rcd 25162, ¶ 75 (2003) ("Compared to a construction standard, Section 27.14(a)'s substantial service requirement will provide licensees greater flexibility to determine how best to implement their business plans based on criteria demonstrating actual service to end users. This requirement provides the flexibility required to accommodate the new and innovative services that we believe will be forthcoming in these bands.").

[55] To the extent that the Commission concludes that it should use competitive bidding to assign any AWS-4 licenses, it would be counter to its objectives if the proposed draconian buildout requirements discouraged potential licensees from bidding. Leaving entire license areas fallow is far worse than encouraging market-driven buildout even with some unserved areas.

VII. CONCLUSION

The spectrum at 2 GHz holds tremendous potential as a home for future innovative mobile broadband services. Because the 2 GHz spectrum environment is a complicated one, CTIA encourages the Commission to proceed carefully and to closely evaluate the technical and band plan submissions of participants in this proceeding to determine the allocation that best suits the public interest and makes the most efficient use of this additional mobile broadband spectrum. Finally, the Commission must reject its unduly burdensome proposed performance requirements. CTIA and its members look forward to continued participation in this proceeding and to the development of allocation and service rules that will further the innovation and investment that defines the wireless industry.

Respectfully submitted,

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