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Via Electronic Filing

July 8, 2011

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth St., S.W.
Washington, DC 20554

Re: Written Ex Parte Communication – ET Docket No. 10-123

Dear Ms. Dortch:

Attached please find the comments of the Consumer Electronics Association ("CEA") filed today in response to the Public Notice in ET Docket No. 10-142, WT Docket Nos. 04-356, 07-195.[1] The attached comments are also relevant to the March 8, 2011 Public Notice in this docket[2] and are being submitted to become part of the record.

Pursuant to Section 1.1206 of the Commission's rules,[3] this letter is being electronically filed with your office. Please let the undersigned know if you have any questions regarding this filing.

Respectfully submitted,

/s/ Julie M. Kearney

Julie M. Kearney
Vice President, Regulatory Affairs

Attachment

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[1] FCC Public Notice, *Spectrum Task Force Invites Technical Input On Approaches To Maximize Broadband Use Of Fixed/Mobile Spectrum Allocations In The 2 GHz Range*, ET Docket No. 10-142, WT Docket Nos. 04-356, 07-195, DA 11-929 (May 20, 2011).

[2] FCC Public Notice, *Spectrum Task Force Requests Information on Frequency Bands Identified By NTIA as Potential Broadband Spectrum*, ET Docket No. 10-123, DA 11-444 (Mar. 8, 2011).

[3] 47 C.F.R. § 1.1206.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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
Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band	)	WT Docket No. 07-195

To: The Spectrum Task Force

COMMENTS OF THE
CONSUMER ELECTRONICS ASSOCIATION

The Consumer Electronics Association ("CEA") hereby responds to the Public Notice[1] issued by the Commission's Spectrum Task Force seeking input on approaches to encourage the growth of terrestrial mobile broadband services.

I. INTRODUCTION

The FCC's mission and the National Broadband Plan share the core goals of maximizing the potential of commercially allocated spectrum and addressing the challenges associated with meeting the surging demand for wireless broadband services. Wireless broadband triggers innovation that will fuel the economy. As CEA's President and CEO Gary Shapiro recently

[1] FCC Public Notice, *Spectrum Task Force Invites Technical Input On Approaches To Maximize Broadband Use Of Fixed/Mobile Spectrum Allocations In The 2 GHz Range*, ET Docket No. 10-142, WT Docket Nos. 04-356, 07-195, DA 11-929 (May 20, 2011). The original comment deadline of June 17, 2011 was extended to July 8, 2011. FCC Public Notice, *Spectrum Task Force Extends Period For Filing Comments And Reply Comments For Technical Input On Approaches To Maximize Broadband Use Of Fixed/Mobile Spectrum Allocations In The 2GHz Range*, ET Docket No. 10-142, WT Docket Nos. 04-356, 07-195, DA 11-1046 (June 10, 2011).

noted, "[s]pectrum is the lifeblood of innovation. As more and more smartphones are held in more and more of our hands, new industries, not even dreamed of a decade ago, are now vibrant and leading us forward. From app downloads to online videos to Twitter to Facebook, we all rely on ubiquitous wireless connections."[2] The exponential increase in demand for and use of wireless broadband services that is expected to continue unabated has resulted in a widely acknowledged looming spectrum crunch.

The FCC and the Administration must continue their diligent efforts to evaluate all commercial and federal government spectrum allocations, to promote flexible use of spectrum based on market forces and demand, and if appropriate, to reallocate additional spectrum for licensed or unlicensed wireless broadband services.[3] In particular, the FCC should continue to evaluate the 2 GHz MSS band and other allocations in order to identify bands where additional flexibility may be appropriate. Similarly, the Administration should evaluate all existing federal allocations and, where appropriate, reallocate spectrum for wireless broadband and other services. NTIA should prioritize the evaluation of the bands that it and industry have already identified – *e.g.,* 1755-1850 MHz. NTIA also should take steps to improve the relocation process to ensure the timely relocation of any federal agency systems operating on spectrum that is reallocated to commercial use.

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[2] Gary Shapiro, President and CEO, CEA, *CE Week Welcome Keynote*, New York, NY, at 3 (June 23, 2011), *available at* http://www.ce.org/PDF/ShapiroSpeechforCEWeek.pdf ("Shapiro Keynote").

[3] *Id.* at 1-2 ("Many of the new products and services coming to market in consumer electronics require wireless broadband, mak[ing] the 'spectrum crunch' the most critical technology public policy issue today. Demand for wireless broadband services [has] nearly exhausted available spectrum, creating a crisis that can only be served by allocating additional spectrum for broadband. In other words, we can't make more of it; we must make sure we are allocating spectrum holdings in accordance with market demand and our economic priorities.").

II. ADDITIONAL SPECTRUM IS URGENTLY NEEDED TO FUEL THE CONTINUED GROWTH OF MOBILE BROADBAND

The Administration and the Commission have recognized the urgent need to introduce additional spectrum resources to meet the ever-increasing demand for wireless broadband services. President Obama has stated:

> America's future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum. The world is going wireless, and we must not fall behind . . . . Expanded wireless broadband access will trigger the creation of innovative new businesses, provide cost-effective connections in rural areas, increase productivity, improve public safety, and allow for the development of mobile telemedicine, telework, distance learning, and other new applications that will transform Americans' lives . . . . This new era in global technology leadership will only happen if there is adequate spectrum available to support the forthcoming myriad of wireless devices, networks, and applications that can drive the new economy.[4]

As Chairman Genachowski has similarly explained, "the explosive demand for wireless innovation is testing the limits of a fundamental resource: spectrum. It is the oxygen of the wireless world – fueling every aspect of our mobile broadband ecosystem."[5]

There is no debate that a spectrum crunch exists. As Chairman Genachowski has stated, "'[t]he math that drives the spectrum crunch is aggregate demand from all consumers in the U.S. compared to aggregate supply of spectrum.' . . . 'We have to free up new spectrum for mobile broadband in order to close the gap between aggregate demand and aggregate supply.'"[6] Study after study supports this conclusion, as discussed in more detail below.

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[4] Presidential Documents, Memorandum on Unleashing the Wireless Broadband Revolution, 75 Fed. Reg. 38387, 38387 (July 1, 2010) ("Obama Wireless Broadband Memo").

[5] Julius Genachowski, FCC Chairman, *Spectrum: Oxygen of Wireless World*, The Hill (Sept. 24, 2009), http://thehill.com/special-reports/technology-september-2009/60265-spectrum-oxygen-of-wireless-world.

[6] Jasmin Melvin, *FCC Head Says Mergers Can't Solve Spectrum Crunch*, MSNBC.com (Apr. 13, 2011), http://www.msnbc.msn.com/id/42566661/ns/technology_and_science-wireless/t/fcc-head-says-mergers-cant-solve-spectrum-crunch/ (quoting Chairman Genachowski during an interview at the NAB Show). *See also* FCC Chairman Julius Genachowski, Prepared Remarks at

A. The Insatiable Demand for Mobile Broadband is Being Driven by the Rapid Adoption of Increasingly Advanced Mobile Devices As Well As the Rapid Expansion of the Mobile Internet

The combination of new mobile devices that consume ever more bandwidth and the increasing penetration of such devices is quickly multiplying the demand for mobile broadband capacity. Consumers' experiences with wireline networks with much higher capacities set expectations, resulting in users increasingly expecting the same performance over mobile networks as they receive over wireline networks.[7] This conclusion is supported by the rapidly increasing data usage seen across all mobile device categories. "For instance, Rysavy Research projects smartphone data consumption increasing from about 0.3 GB per month to almost 10 times this amount within 5 years."[8] In addition, demand for mobile broadband capacity is accelerating based on "the arrival of new device categories, such as tablets, which are being

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NAB Show 2011, Las Vegas, NV, at 5 (Apr. 12, 2011) ("[The] growing [mobile broadband] demand is not going away. The result is a spectrum crunch. No matter what happens in the marketplace, the only thing that can address the growing overall demand for mobile is increasing the *overall* supply of spectrum and the efficiency of its use."). Chairman Genachowski also delivered similar messages regarding the need for more spectrum at CTIA Wireless 2011 and the 2011 International Consumer Electronics Show. *See* Prepared Remarks of Chairman Julius Genachowski, FCC, CTIA Wireless 2011, Orlando, FL, at 5-6 (Mar. 22, 2011); Prepared Remarks of Chairman Julius Genachowski, FCC, 2011 International Consumer Electronics Show, Las Vegas, NV, at 3-4 (Jan. 7, 2011).

[7] Rysavy Research, LLC., *The Spectrum Imperative: Mobile Broadband Spectrum and its Impacts for U.S. Consumers and the Economy An Engineering Analysis*, at 11 (March 16, 2011) ("Rysavy Report"), *attached to Ex Parte* Letter from Jonathan Spalter, Chairman, & Allison Remsen, Executive Director, Mobile Future, to Marlene H. Dortch, Secretary, FCC, ET Docket Nos. 10-235, 10-142, 10-123 (Apr. 5, 2011); *see also* Shapiro Keynote at 4 ("Once we [were] dependent on a wired connection to our computer. But Cisco forecasts that by 2015, traffic from wireless devices will exceed traffic from wired devices. This proves we often don't know who, what, when, where and how innovation comes to us – it just does, and it is incumbent upon us all that we have a forward-looking policy environment that centers on fostering that innovation.").

[8] Rysavy Report at 11. *See also* Shapiro Keynote at 2 ("Smartphones consume 24 times as much data as traditional cell phones, while tablets can use as much as 122 times the data. From 2007 to 2010, AT&T said its wireless data traffic skyrocketed 8,000%. Some industry analysts forecast that a 40-fold increase in that amount could materialize in coming years.").

enthusiastically embraced by consumers – 10.3 million tablets sold already with sales expected to exceed laptops by 2015."[9]

The rapid increase in mobile broadband traffic is enabled and driven by a variety of factors, including "faster networks, more network-enabled devices, increasing computing speeds that enable more complex data-consuming applications, gaming, larger displays, and higher screen resolution."[10] For example, "[a]ssuming typical advanced video encoding and full-screen video, going from the iPhone 3 to iPhone 4 quadruples the video data consumption rate."[11]

The demand for mobile broadband is being further driven and compounded by the rapid increase in machine-to-machine ("M2M") mobile broadband traffic. Cisco forecasts that M2M traffic will increase 40-fold between 2010 and 2015, from 7.4 petabytes per month in 2010 to 296 petabytes per month in 2015.[12] This is due in substantial part to the increased incorporation of the hardware and software necessary for mobile broadband connectivity in system components including those of smart meters, surveillance, inventory management, and fleet management, to name just a few examples.[13] As mobile data networks become ubiquitous, bandwidth-intensive M2M connections will become more prevalent. Traditional appliances and devices, such as home appliances, vehicles, energy meters, and vending machines – which

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[9] Rysavy Report at 15.

[10] *Id.* at 12.

[11] *Id.*

[12] Cisco Systems, Inc., *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2010–2015*, at 15 (Feb. 1, 2011), http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.pdf ("Cisco Mobile Data Forecast").

[13] *Id.* at 14.

traditionally have not been connected directly to mobile broadband networks – are now connecting directly to these networks.[14]

B. It is Imperative that Spectrum is Available to Meet the Continuing Increased Demand for Wireless Broadband

The FCC's October 2010 report examined projected growth in wireless traffic demand, relying on work conducted by three respected industry sources: Cisco Systems, Coda Research, and the Yankee Group.[15] Based on the average of these three sources, the report projected significant "growth in mobile data traffic from 2009 levels – by a factor of five by 2011, more than 20 times by 2013, and reaching 35 times 2009 levels by 2014."[16] Notably, "[i]n all three forecasts, the trend remains upward in 2014, implying continued growth beyond the forecast period."[17] In a more recent forecast, Cisco estimates that "[o]verall [global] mobile data traffic is expected to grow to 6.3 exabytes per month by 2015, a 26-fold increase over 2010."[18]

As explained in the National Broadband Plan, "[i]f the U.S. does not address [the spectrum shortage] promptly, scarcity of mobile broadband could mean higher prices, poor service quality, an inability for the U.S. to compete internationally, depressed demand and, ultimately, a drag on innovation."[19] The Administration similarly concluded that "[t]his new era in global technology leadership will only happen if there is adequate spectrum available to

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[14] *Id.*

[15] FCC Staff OBI Technical Paper No. 6, *Mobile Broadband: The Benefits of Additional Spectrum*, at 9 (Oct. 2010).

[16] *Id.*

[17] *Id.*

[18] Cisco Mobile Data Forecast at 5.

[19] *Connecting America: The National Broadband Plan* at 77 (Mar. 16, 2010) ("National Broadband Plan").

support the forthcoming myriad of wireless devices, networks, and applications that can drive the new economy."[20]

III. THE COMMISSION AND ADMINISTRATION ALIKE MUST CONTINUE TO EXAMINE CURRENT ALLOCATIONS TO ENSURE THE MOST EFFICIENT USE OF SPECTRUM RESOURCES

The Administration and the Commission have recognized the need to promote spectrum use that is responsive to consumer-driven marketplace forces, is efficient, and does not interfere with the provision of important services. President Obama stated in his June 28, 2010 Presidential Memorandum: "[W]e can use our American ingenuity to wring abundance from scarcity, by finding ways to use spectrum more efficiently. We can also unlock the value of otherwise underutilized spectrum and open new avenues for spectrum users to derive value through the development of advanced, situation-aware spectrum-sharing technologies."[21] In that Memorandum, the President directed the Secretary of Commerce, working through NTIA, to collaborate with the FCC to make 500 MHz of federal and nonfederal spectrum available for wireless broadband over the next ten years.[22] In a similar fashion, the FCC's National Broadband Plan recommended that 500 MHz of spectrum be made available for mobile broadband over the next ten years to "meet growing demand for wireless broadband services, and to ensure that America keeps pace with the global wireless revolution."[23]

CEA fully supports these goals, and the Administration's and Commission's efforts to achieve them. Specifically, CEA applauds the Commission's addition of a co-primary mobile allocation to the MSS 2 GHz band, and supports the use of incentive auctions as a valuable tool

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[20] Obama Wireless Broadband Memo, 75 Fed. Reg. at 38387.

[21] *Id.*

[22] *Id.* at 38388.

[23] National Broadband Plan at 84.

in moving toward more flexible spectrum use. The Commission should continue to evaluate existing commercial spectrum allocations, including in the MSS 2 GHz band, in order to identify methods by which to increase flexibility and efficiency.

Similarly, the Administration should continue to examine federal spectrum to identify bands that may be, where appropriate, reallocated for commercial mobile broadband use. CEA supports the Administration's current efforts, through NTIA, to identify and evaluate federal spectrum bands for potential reallocation to wireless broadband use[24] as well as the Administration's efforts to create the necessary incentives for the agencies to relinquish their underutilized spectrum.[25] In particular, CEA supports NTIA's identification of the 1755-1850 MHz spectrum band as a priority band for evaluation[26] as well as NTIA's continued examination of other federal spectrum bands to determine whether use of new technologies by federal systems, sharing, or reallocation could promote more efficient use. To meet the urgent need for broadband spectrum, NTIA should complete its evaluation of federal spectrum use as quickly as possible, and should continue to work toward completing its evaluation of the 1755-1850 MHz band in the September 2011 timeframe.[27]

In addition to reallocation, NTIA should promote the efficient use of spectrum by encouraging federal users to share spectrum. CEA applauds NTIA's use of tools such as

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[24] *See, e.g.*, U.S. Dept. of Commerce, *First Interim Progress Report on the Ten-Year Plan and Timetable*, at 2 (Apr. 2011), *available at* http://www.ntia.doc.gov/reports/2011/First_Interim_Progress_Report_04012011.pdf ("NTIA First Interim Progress Report").

[25] *See, e.g.*, *Relocation of Federal Systems in the 1710–1755 MHz Frequency Band: Review of the Initial Implementation of the Commercial Spectrum Enhancement Act*, Notice of Inquiry, NTIA Docket No. 0906231085–91085–01, 74 Fed. Reg. 32131, 32136 (July 7, 2009).

[26] NTIA First Interim Progress Report at 4.

[27] *Id.*

testbeds, and the work of the Commerce Spectrum Management Advisory Committee, toward that end.[28]

The Administration also should take further measures to ensure timely reallocation of federal spectrum to commercial use, as well as timely and equitable relocation of federal users from that spectrum. As CEA has stated in comments filed with NTIA, a combination of obligations, incentives and penalties should be established to improve federal agency spectrum usage.[29] Specifically, federal agencies should be required to analyze their spectrum use and identify spectrum that could be reallocated for commercial use, incentives (*e.g.,* increased funding or other support) should be made available to agencies that identify spectrum for reallocation, and agencies should be required to relocate from reallocated spectrum within one year (with financial incentives available to agencies that relocate in less than one year, and penalties imposed on those that take longer than one year to relocate). In addition, agencies must be provided with adequate, dedicated personnel and funding to plan and execute the relocation. CEA notes that certain efforts are underway in both the Administration and Congress to improve agency assessment of spectrum use, and planning for relocation in the event spectrum is reallocated to commercial use.[30]

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[28] *See, e.g.*, *Spectrum Sharing Innovation Test-Bed Pilot Program*, Notice, Request for Comments, NTIA Docket No. 0811251523-81524-01, 73 Fed. Reg. 76002, 76002-03 (Dec. 15, 2008); Commerce Spectrum Management Advisory Committee, *Opportunities Relating to the Spectrum Sharing Test Bed*, at 5-7 (Dec. 6, 2007), *available at* http://www.ntia.doc.gov/advisory/spectrum/Test_Bed.pdf.

[29] Comments of CEA, *Relocation of Federal Systems in the 1710-1755 MHz Frequency Band: Review of the Initial Implementation of the Commercial Spectrum Enhancement Act*, NTIA Docket No. 0906231085-91085-01, at 3-4 (Aug. 20, 2009), *available at* http://www.ntia.doc.gov/comments/2009/CSEA/CSEAcomments_004.pdf.

[30] *See, e.g.*, NTIA, *NTIA Fact Sheet On Spectrum Plan And Timetable, Fast Track Evaluation*, at 2 (Nov. 15, 2010), http://www.ntia.doc.gov/reports/2010/SpectrumFactSheet_11152010.pdf ("[T]he Administration intends to propose improvements to the Commercial Spectrum Enhancement Act, particularly focusing on the need to provide agencies with the funding to plan

IV. CONCLUSION

CEA welcomes the opportunity to serve as a resource for the Commission as it seeks to encourage the growth of terrestrial mobile broadband services.

Respectfully submitted,

CONSUMER ELECTRONICS ASSOCIATION

By: /s/ Julie M. Kearney

Julie M. Kearney
Vice President, Regulatory Affairs

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for relocation and the need to provide agencies with greater flexibility in applying resources from the Spectrum Relocation Fund."); Public Safety Spectrum and Wireless Innovation Act, S.911, 112th Cong. §§ 514, 522, 524, 525 (2011) (expanding the definition of "relocation costs" and "sharing costs" to mean the "costs incurred by a Federal entity to plan for a potential auction or sharing of spectrum" as well as "costs of any modification or replacement equipment;" requiring development of new tools and metrics to measure efficiency of federal spectrum use; requiring examination of federal frequency assignment process; requiring measurement of economic opportunity costs of federal spectrum use and requiring agencies to compare such costs to those associated with sharing and relocation; requiring examination of efficiency of technologies used by federal agencies); Reforming Airwaves by Developing Incentives and Opportunistic Sharing (RADIOS) Act, S.455, 112th Cong. §§ 4, 5, 7 (2011) (adding a spectrum measurement and survey study, a spectrum analysis and utilization study, a study on interference sensing, and a sharing and reuse pilot program; expanding the reimbursable relocation expenses to include planning and additional equipment costs); *see also* Spectrum Relocation Improvement Act, S.522, 112th Cong. § 2 (2011) (conditioning payment of relocation expenses on an approved transition plan, including spectrum sharing to the extent possible, as well as on timely and successful relocation).