THE 600 MHZ INCENTIVE AUCTION: A TENSION OF LAW AND PUBLIC POLICY

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INTRODUCTION

In 1934 Congress chose to subject the nation's wireless spectrum to government oversight and regulation as a scarce public resource and, simultaneously, delegated its authority to regulate the nation's wireless spectrum to the FCC under the Communications Act of 1934.[1] Accordingly, the wireless renaissance we take for granted today has evolved in no small part under the guidance, direction, and regulation of the Federal Communications Commission.

[1] For the purposes of this paper, I will primarily examine a section of the Middle Class Tax Relief and Job Creation Act of 2012 known as the "Spectrum Act." *See Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, §§ 6401-6414, 125 Stat. 156 (2012) (Spectrum Act) (hereafter referred to as "the Act" or "Spectrum Act of 2012"). However, the FCC is also subject to other Acts of Congress including, but not limited to, the Communications Act of 1934, Telecommunications Act of 1996, and the Administrative Procedure Act of 1946. *Telecommunications Act of 1996*, 47 U.S.C.A. § 609 (1996) (updating the Communications Act of 1934 as amended by the Telecommunications Act of 1996); *Administrative Procedure Act*, 5 U.S.C. §§ 551-559, 701-706 (1946).

For nearly sixty years after the passage of the Communications Act of 1934, the FCC primarily regulated wireless spectrum under a command-and-control approach that allocated and assigned frequencies to limited categories of spectrum users for specific government-defined uses.[2] However, recognizing that the command-and-control approach often hinders innovation and creates spectrum inefficiency, in 1993 Congress instructed the FCC to embrace today's familiar form of spectrum auctions in order to further the principles of flexibility and market forces.[3]

In 2010, the FCC asked Congress to provide the agency with the authority to conduct the first ever "incentive auction" as outlined within the agency's National Broadband Plan proposal.[4] According to the FCC, this innovative twist to the familiar spectrum auction will accelerate the efficient use of spectrum and promote innovation.[5] Congress granted the FCC's request by passing the Spectrum Act of 2012 which permits one incentive auction of the 600 MHz spectrum, subject to numerous legislative restrictions and obligations.[6] Consequently, the FCC promulgated a Notice of Proposed Rulemaking on October 2, 2012, in which the FCC sought comment from the public on its proposed rulemaking for the 600 MHz incentive auction currently scheduled for

[2] Until 1993, the FCC primarily utilized comparative hearings and lotteries to assign spectrum licenses rather than spectrum auctions. *FCC Report to Congress on Spectrum Auctions*, WT Docket No. 97-150 at p. 6-7 (September 20, 1997).

[3] As part of the Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 6002, 107 Stat. 312, 387-392 (the "1993 Budget Act"), Congress added Section 309(j) to the Communications Act of 1934, as amended (the "Communications Act"), authorizing the Federal Communications Commission (the "FCC" or "Commission") to award licenses for rights to use the radio spectrum through competitive bidding.

[4] *See Federal Communications Commission, Connecting America: The National Broadband Plan* at 88-91 (2010).

[5] *Id.*

[6] *See Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, §§ 6401-6414, 125 Stat. 156 (2012) (Spectrum Act).

2014.[7] One of the primary purposes of the proposed rulemaking is to ensure that, when conducting the 600 MHz incentive auction, the FCC fully complies with all of its statutory mandates.[8]

In passing the Spectrum Act of 2012, Congress fundamentally changed the spectrum auction model currently implemented by the FCC by creating the so-called "incentive auction" model which includes a "forward" and "reverse" auction coupled with a "repacking" process.[9] Congress's incentive auction creates a unique opportunity for the 600 MHz auction to accomplish numerous policy goals; simultaneously, the incentive auction creates numerous tensions between matters of law and policy that the FCC must harmonize when implementing the incentive auction in 2014.

This paper critically examines three distinct tensions found within the Spectrum Act of 2012: 1) encouraging free market forces vs. imposing spectrum aggregation limits, 2) creating small guard bands vs. creating large guard bands for unlicensed use, and 3) ensuring reverse auction licensee confidentiality vs. imposing reverse auction licensee confidentiality.[10] In order to effectively understand these three tensions, the paper first examines and explains the FCC's Proposed Rulemaking for the 600 MHz spectrum auction in layman's terms within the context of the current wireless environment, discusses the FCC's interpretation of the Spectrum Act of 2012, and discusses the various perspectives of wireless carrier stakeholders. The paper then analyzes the three tensions of spectrum aggregation limits, guard bands, and licensee confidentiality

[7] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 (proposed Nov. 21, 2012).

[8] *Id.*

[9] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, §§ 6401-6414, 125 Stat. 156 (2012) (Spectrum Act).

[10] *Id.*

within the context of the express language of the Spectrum Act of 2012. Finally, this paper makes recommendations that harmonize these tensions in accordance with text of the Spectrum Act of 2012, Congressional intent, and arguments of public policy.

I. THE FCC NOTICE OF PROPOSED RULEMAKING

The FCC Notice of Proposed Rulemaking for the 600 MHz Auction is a lengthy document of 205 pages.[11] Within its proposed rulemaking the FCC explains the purpose, mechanics, and challenges presented by this new type of incentive spectrum auction.[12] Furthermore, the FCC states its interpretation on various portions of the Spectrum Act of 2012 and asks for public comment on those interpretations.[13]

A. A Brief History

Broadcast television licensees currently occupy large portions of the 600 MHz spectrum that the incentive auction seeks to reapportion.[14] Historically, in return for obtaining these free public licenses from the FCC, television broadcasters have provided valuable informational, educational, and entertainment programming services to the public free of charge.[15] This is especially important in rural areas where access to cable is limited; this is also especially important for lower income families, although.[16] However, the vast majority of U.S. households

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[11] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 (proposed Nov. 21, 2012).

[12] *Id.*

[13] *Id.*

[14] *Id.* at 6.

[15] *Id.*

[16] Letter from 57 members of the U.S. House of Representatives to Mignon Clyburn, Acting Chair of the FCC (November 16, 2013) *available at* https://www.nab.org/documents/newsRoom/pressRelease.asp?id=3182 (urging the FCC to protect over-the-air television in rural American during the incentive auction); David Tice, *Confessions of a Cord Cutter Skeptic Revisited*, GfK (Nov. 16, 2013), http://blog.gfk.com/blog/2013/06/17/confessions-of-a-cord-cutter-skeptic-revisited/ (study from

do not rely upon over-the-air television for their primary source of information.[17] Inversely, since the advent of the modern smartphone in 2007, the cellular wireless industry has experienced tremendous growth resulting in unprecedented levels of wireless data usage.[18] In order to meet the data needs of their customers, national wireless carriers such as AT&T, Verizon Wireless, Sprint, and T-Mobile and regional wireless carriers such as C Spire, U.S. Cellular, ATN, nTelos and Cincinnati Bell require access to ever-increasing amounts of spectrum.[19] [20]

The 600 MHz spectrum, currently occupied by broadcast television licensees, is uniquely positioned to offer wireless carriers the ability to alleviate spectrum constraints while simultaneously increasing coverage and building penetration.[21] If the 700 MHs auction is any

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the *Home Technology Monitor* stating that 22.4 million U.S. households, 19.3% of TV homes, report broadcast-only reception and that 30% of households with an annual income below $30,000 rely solely on OTA television).

[17] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 7 (proposed Nov. 21, 2012).

[18] *Id.* at 190-91.

[19] The "spectrum crunch" as some have called it poses substantial future challenges to the wireless industry, but recent advances in LTE spectrum usage and other technologies have generally ameliorated the immediate need of wireless carriers for more spectrum; the fact that unlimited plans are offered by some wireless carriers suggests that the spectrum crunch may not be as dire as some in the wireless industry have opined. *See What Happened to the Spectrum Crunch*, http://www.fiercewireless.com/story/what-happened-spectrum-crunch/2012-09-28 (last visited Nov. 16, 2013); *see also The Sprint Unlimited Guarantee*, http://newsroom.sprint.com/news-releases/sprint-launches-unlimited-guarantee-and-new-unlimited-my-way-plan.htm (last visited Nov. 16, 2013); *see also T-Mobile's Unlimited Plans & Throttling Policy*, http://prepaid-phones.t-mobile.com/prepaid-plans (last visited Nov. 16, 2013).

[20] Both the Legislative and Executive branches recognize that freeing up the 600 MHz spectrum is just one piece of the spectrum crunch puzzle. *See House Hearing, 112th Congress - Avoiding The Spectrum Crunch: Growing The Wireless Economy Through Innovation* (April 18, 2012), http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg74057/content-detail.html; *Presidential Memorandum: Unleashing the Wireless Broadband Revolution* (June 28, 2010), http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution.

[21] For the sake of simplicity, generally, lower frequency spectrum such as that in the 600 MHz range provides greater building penetration and travels further than higher frequency spectrum above the 1 GHz range. *See* John Blevins, *Death of the Revolution: The Legal War on*

indication, depending upon the amount of spectrum available on a regional and nationwide basis, the 600 MHz auction will raise well in excess of $13,400,000,000 dollars in revenue.[22] However, this raises a basic economic question: can the FCC financially motivate current licensees to willingly give up their valuable 600 MHz "beachfront property" licenses?[23] This is where the FCC's 600 MHz incentive auction comes into play.

B. FCC Proposed Rulemaking and Auction Procedures

The FCC's central goals for the incentive auction are "[T]o repurpose the maximum amount of UHF band spectrum for flexible licensed and unlicensed use in order to unleash investment and innovation, benefit consumers, drive economic growth, and enhance U.S. global competitiveness, while at the same time preserving a healthy, diverse broadcast television

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Competitive Broadband Technologies, 12 Yale J. L. & Tech. 85, 94-95 (2009-2010). In rural areas, lower frequency spectrum enables wireless carriers to cover vast geographic areas with relatively few towers; covering rural areas is cost-prohibitive to carriers that solely utilize higher frequency spectrum. *See* Susan P. Crawford, *The Radio and the Internet*, 23 Berkeley Tech. L.J. 933, 934 (2008).

[22] Results from the 700 MHz Spectrum Auction of 2007 strongly indicate that the market is more than willing to pay a premium for lower frequency spectrum. *See* Federal Communications Commission, *Auction 73 700 MHz Band*, http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=73 (stating that the FCC's 700 MHz Spectrum Auction raised $18,957,582,150 in net bids); *see also* Robert J. Shapiro, Douglas Holtz-Eakin, and Coleman Bazelon, *The Economic Implications of Restricting Spectrum Purchases in the Incentive Auctions*, WT Docket No. 12-269 (Apr. 30, 2013), http://apps.fcc.gov/ecfs/document/view?id=7022309583 (stating that, even under the extreme scenario of banning AT&T and Verizon from participating in the incentive auction, revenues for would still be $19,000,000,000); *see also* Philip Haile, Maya Meidan, and Jonathan Orszag, *The Impact on Federal Revenues from Limiting Participation in the FCC 600 MHz Spectrum Auction*, GN Docket No. 12-268 (October 30, 2013), http://qzprod.files.wordpress.com/2013/10/fcc-budget-study.pdf (implicitly stating that, at a minimum, the incentive auction stands to raise $13,400,000,000 in revenue).

[23] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 190-91 (proposed Nov. 21, 2012).

service."[24] Structurally, the FCC's incentive auction includes three major pieces: 1) a "reverse auction" in which broadcast television licensees submit bids to voluntarily relinquish spectrum usage rights in exchange for payments, 2) a reorganization or "repacking" of the broadcast television bands in order to free up a portion of the ultra high frequency (UHF) band for other uses, and 3) a "forward auction" of initial licenses for flexible use of the newly available spectrum.[25]

In the reverse auction, the FCC has proposed two bid collection procedures for licensee participants: 1) a single round sealed bid procedure in which bidders would specify, during a single round of bidding, the payment they would be willing to accept in exchange for relinquishing rights or 2) a multiple round, or dynamic procedure in which bidders would indicate their willingness to accept iteratively lower payments in exchange for relinquishing rights.[26] The FCC proposes using an assignment procedure, to be determined at a later date, in which various factors may be taken into account to determine which bids are accepted and which are rejected.[27]

In the repacking portion of the auction, the FCC must take the spectrum obtained from winning reverse auction bidders and reorganize it into usable bands for forward auction bidders to bid upon.[28] The FCC has proposed two alternative, algorithm-based assignment procedures to repackage the spectrum for wireless use.[29]

In the forward auction, the FCC has proposed two bid collection procedures: 1) a

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[24] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 5-6 (proposed Nov. 21, 2012).

[25] *Id.* at 3.

[26] *Id.* at 17.

[27] *Id.*

[28] *Id.* at 18-19.

[29] *Id.*

simultaneous multiple round ascending (SMR) auction or 2) an ascending clock auction.[30] In each proposal, a bidder would indicate the license or licenses it seeks in a series of ascending price rounds and would be required to satisfy an activity requirement to incentivize consistent bidding throughout the auction. Generally speaking, winning forward auction bidders will be those that place the highest bids on the available licenses.[31]

In essence, the incentive auction authorized by Congress in the Spectrum Act of 2012 "incentivizes" current broadcast television licensees to voluntarily give up their 600 MHz spectrum licenses in the reverse auction in exchange for monetary compensation raised in the forward auction. As an additional incentive, Congress has apportioned funds to assist broadcasters in transitioning from their current spectrum licenses to alternative shared spectrum.[32] The incentive auction "incentivizes" winning forward auction bidders by providing them with access to the newly relinquished and repackaged 600 MHz spectrum. According to Congress, any excess money raised by the FCC's incentive auction that is not utilized by the TV Broadcaster Relocation Fund must be utilized for the purpose of building a nationwide Public Safety Network and, after 2022, for general debt reduction.[33]

C. FCC Interpretation of Act

Understanding that Congress has imposed numerous responsibilities and obligations upon the FCC regarding the implementation of the incentive auction, the FCC seeks extensive comment from the public on its Notice of Proposed Rulemaking in order to ensure that the agency fully complies with these statutory mandates. The FCC's Notice of Proposed Rulemaking

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[30] *Id.* at 22-23.
[31] *Id.*
[32] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6403(d), 125 Stat. 156 (2012) (Spectrum Act).
[33] *Id.*

provides the public with a careful, reasoned, and well thought-out outline for the 600 MHz auction that generally complies with the agency's statutory mandates. However, recognizing that some areas of the 2012 Spectrum Act are not explicitly clear, the FCC especially seeks additional comments on proposed rules contemplated by the Act such as encouraging free market forces vs. imposing spectrum aggregation limits, creating small guard bands vs. creating large guard bands for unlicensed use, and ensuring reverse auction licensee confidentiality vs. imposing reverse auction licensee confidentiality.[34] Arguments for and against the FCC's proposed rules can be made in accordance with the express language of the Spectrum Act of 2012 and public policy considerations.

With respect to spectrum aggregation limits, the FCC has not publicly stated whether or not it will impose a strict one-third spectrum aggregation limit upon larger wireless carriers such as AT&T and Verizon in the 600 MHz auction. Presumably, the strict one-third aggregation limit currently contemplated by the FCC would prevent any forward auction participant from obtaining more than one-third of the 600 MHz spectrum available in any given market.[35] Even if the FCC declines to impose a strict spectrum aggregation limit, it may still impose something akin to T-Mobile's "Dynamic Market Rule" in order to avoid excessive concentration of spectrum licenses.[36] This proposed rule builds upon the strict one-third spectrum aggregation limit by allowing additional bidding, on licenses that fail to meet a minimum reserve requirement designated by the FCC, even by bidders that have already met their one-third spectrum

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[34] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 57-58, 91, and 128 (proposed Nov. 21, 2012).

[35] *Id.* at 128.

[36] Gregory Rosston and Andrzej Skrzypacz, *A Dynamic Market Rule for the Broadcast Incentive Auction: Ensuring Spectrum Limits Do Not Reduce Spectrum Clearance*, http://apps.fcc.gov/ecfs/document/view?id=7520934888 (July 2013).

aggregation limit.[37] In contrast to these two approaches, the FCC may yet decline to impose spectrum aggregation limits upon forward auction participants and instead impose additional requirements upon licensees that acquire 600 MHz spectrum above a certain threshold (i.e. requiring spectrum sharing through roaming and / or resale obligations, infrastructure sharing, or accelerated buildout requirements).[38]

To date, the FCC has received numerous documents from parties advocating both for and against aggregation limits. Typical arguments made by smaller carriers for spectrum aggregation limits include promoting competition, enhancing auction participation, enhancing revenues, and preventing larger carriers from obtaining a monopoly on lower frequency spectrum.[39] In contrast, typical arguments made by larger carriers for free market forces rather than spectrum aggregation limits include maximizing revenues, promoting efficient allocation of spectrum, reducing auction complexity, reducing manipulative bidding, and encouraging participation by broadcasters in the reverse auction.[40] The FCC seeks comment on the benefits and tradeoffs of any proposed spectrum aggregation limits.

Unlike spectrum aggregation limits, the FCC has publicly committed to permitting the unlicensed use of proposed guard bands within the 600 MHz spectrum as long as such secondary

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[37] *Id.*

[38] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 128 (proposed Nov. 21, 2012).

[39] Robert J. Shapiro, Douglas Holtz-Eakin, and Coleman Bazelon, *The Economic Implications of Restricting Spectrum Purchases in the Incentive Auctions,* WT Docket No. 12-269 (Apr. 30, 2013), http://apps.fcc.gov/ecfs/document/view?id=7022309583.

[40] Philip Haile, Maya Meidan, and Jonathan Orszag, *The Impact on Federal Revenues from Limiting Participation in the FCC 600 MHz Spectrum Auction,* GN Docket No. 12-268 (October 30, 2013), http://qzprod.files.wordpress.com/2013/10/fcc-budget-study.pdf.

use does not cause interference between cellular carriers and broadcasters.[41] According to the Spectrum Act of 2012, the FCC must determine the proper size of these guard bands.[42] Currently, the FCC proposes creating 6 megahertz guard bands that add an additional 0 to 4 megahertz of "remainder" spectrum in any given market for unlicensed use (i.e. providing 6-10 MHz of spectrum for unlicensed use in any given market).[43] TV broadcast stations currently operate within the 600 MHz spectrum on 6 megahertz wide channels but, once reclaimed under the FCC's current plan, the 600 MHz spectrum will be organized into 5 megahertz blocks for use by cellular carriers.[44] As a result, in any given market, (0 – 4) + (6) megahertz of spectrum will remain for the FCC to allocate for unlicensed guard band use.[45] The FCC seeks comment on the benefits and tradeoffs of other proposed guard band plans that may more efficiently utilize excess spectrum.

[41] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 5 (proposed Nov. 21, 2012).

[42] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6407(b), 125 Stat. 156 (2012) (Spectrum Act).

[43] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 57-58 (proposed Nov. 21, 2012).

[44] Most cellular carriers operate wireless networks that utilize 5 megahertz blocks for voice and data services, although using smaller amounts of spectrum is technologically feasible. Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 47 (proposed Nov. 21, 2012). Long Term Evolution (LTE), the dominant network standard utilized by wireless carriers in the United States and around the world, technically supports channel sizes of 1.4, 3, 5, 10, 15, and 20 megahertz. *Id.*

[45] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 57-58, 64, and 83-84 (proposed Nov. 21, 2012).

Finally, the FCC has publicly committed to ensuring the confidentiality of licensee information held by the FCC.[46] The current question posed by the FCC is whether or not the obligation to protect confidential Commission-held data should be extended to applicants in the reverse auction.[47] In other words, should broadcasters be allowed to publicly disclose their participation in the reverse auction? The FCC seeks comment on the benefits and tradeoffs of extending the obligation to protect licensee confidentiality to licensees themselves.

D. Public Perspectives on Proposed Rulemaking

To date, numerous parties have submitted comments in response to the FCC's proposed rulemaking. Wireless carriers have paid special importance to and commented on potential spectrum aggregation limits and the FCC's guard band proposal.

Unsurprisingly, large and well-capitalized wireless carriers such as AT&T and Verizon Wireless urge the FCC not to impose spectrum aggregation limits. AT&T and Verizon believe that a spectrum aggregation limit will deprive the auction of needed revenue, unnecessarily inhibit and discourage competition and participation in the auction, complicate the auction itself, and cause purchased spectrum to be put to inefficient use. Inversely, smaller national carriers such as Sprint and T-Mobile and regional wireless carriers believe that, if the FCC does not impose a spectrum aggregation limit, larger carriers such as AT&T and Verizon will purchase the vast majority of the spectrum and effectively shut the smaller carriers out of the 600 MHz band. The smaller carriers cite data showing that AT&T and Verizon hold in excess of 100 MHz of lower-band spectrum in the top 100 markets while the smaller national carriers and regional

[46] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 90-91 (proposed Nov. 21, 2012).

[47] *Id.*

carriers hold approximately 20 MHz combined.[48] The larger carriers counter that T-Mobile and Sprint declined to substantively participate in the 700 MHz auction and, as such, failed to receive the benefits.[49] Each of the carriers has filed documents with the FCC in support of their positions. AT&T has filed a document written by two economics professors stating that any restriction of the larger carriers could "almost certainly doom the auction."[50] T-Mobile has filed a document proposing a "Dynamic Market Rule," a sliding spectrum screen that combines spectrum aggregation with free market principles.[51]

Perhaps more surprisingly, Verizon and T-Mobile have submitted a joint proposal to the FCC regarding the guard band plan and interoperability.[52] Within their proposal, the two carriers have agreed to the following principles: 1) maximizing the amount of paired spectrum available for mobile broadband, 2) allowing for the cost-effective and timely development of network equipment and end-user devices, 3) facilitating a single 3GPP band class to provide

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[48] Joint Ex Parte Notice filed by T-Mobile, Sprint, Dish, U.S. Cellular, C Spire, CCA, Cellular One, and Bluegrass Cellular, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions* ((Nov. 14, 2013) http://apps.fcc.gov/ecfs/document/view?id=7520957728; T-Mobile Ex Parte Notice, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, (Feb. 1, 2013), http://apps.fcc.gov/ecfs/document/view?id=7022116150 and http://apps.fcc.gov/ecfs/document/view?id=7022116151.

[49] AT&T Ex Parte Notice, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, (Oct. 29, 2013), http://apps.fcc.gov/ecfs/document/view?id=7520953217; Verizon Ex Parte Notice, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, (Sep. 27, 2013), http://apps.fcc.gov/ecfs/document/view?id=7520945782.

[50] Philip Haile, Maya Meidan, and Jonathan Orszag, *The Impact on Federal Revenues from Limiting Participation in the FCC 600 MHz Spectrum Auction*, GN Docket No. 12-268 (October 30, 2013), http://qzprod.files.wordpress.com/2013/10/fcc-budget-study.pdf.

[51] Robert J. Shapiro, Douglas Holtz-Eakin, and Coleman Bazelon, *The Economic Implications of Restricting Spectrum Purchases in the Incentive Auctions*, WT Docket No. 12-269 (Apr. 30, 2013), http://apps.fcc.gov/ecfs/document/view?id=7022309583.

[52] Joint Ex Parte Notice filed by T-Mobile and Verizon, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, (Sep. 16, 2013), http://apps.fcc.gov/ecfs/document/view?id=7520943667.

interoperability across all paired blocks in the 600 MHz band, and 4) allocating for supplemental downlink use any unpaired spectrum not needed to protect 600 MHz broadband operations against interference.[53]

To date, comments from the public have primarily focused on the public policy implications of the FCC's proposed incentive auction. However, it is not clear that these comments have adequately examined and addressed the legal authority and responsibility of the FCC's proposed rulemaking in light of the Spectrum Act of 2012 and other relevant statutory provisions. Part of the problem in conducting such an undertaking is that Congress delegated to the FCC tremendous authority and flexibility in conducting the incentive auction. Furthermore, much of the FCC's authority enables it to make decisions seemingly based solely upon public policy considerations. Inherently, conducting an analysis of the FCC's legal authority under the Spectrum Act of 2012 is a complicated endeavor. Numerous statutes govern the FCC including the 1934 Communications Act, the Telecommunications Act of 1996, the Spectrum Act of 2012, and the Administrative Procedure Act of 1946, and more. Each of these acts imposes duties and limitations upon the FCC, both expanding its power and restricting it simultaneously. However, the fact of the matter remains that the FCC must conduct the incentive auction in accordance with the express laws, and implicit will, of Congress. As such, determining whether the FCC's proposed rulemaking is in full compliance the laws of Congress requires a thorough analysis of the laws themselves. Although proposed rulemakings necessarily examines matters of public policy, the intent and letter of the law ultimately *must* guide any conclusion that the FCC reaches in creating rules for the Spectrum Auction of 2012.

[53] *Id.*

III. ENCOURAGING FREE MARKET FORCES VS. IMPOSING SPECTRUM AGGREGATION LIMITS

It is clear that the FCC maintains the authority, subject to other statutory obligations and restrictions, to implement spectrum aggregation limits for the 600 MHz incentive auction in accordance with the express language of the Act.[54] It is additionally clear that Congress intended for the FCC to contemplate avoiding an excessive concentration of licenses when creating rules for the 600 MHz auction in accordance with the Communications Act of 1934.[55] However, this raises the following question: *must* the FCC impose spectrum aggregation limits in accordance with the Act and the Communications Act of 1934?

According to 47 U.S.C. § 309(j)(3)(B) of the Communications Act of 1934, the FCC "shall seek to promote" the "objective" of "[P]romoting economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants . . ." According to § 6404(17)(b) of the Act, "Nothing in subparagraph (A) affects any authority the Commission has to adopt and enforce rules of general applicability, *including rules concerning spectrum aggregation* that promote competition." (emphasis added).

Clearly, neither the language of § 309(j)(3)(B) or § 6404(17)(b) *requires* the FCC to create a brightline rule prohibiting excessive concentration of licenses within a given market by a given wireless carrier. Otherwise, Congress would have written "must promote" or "shall promote" within either of these two provisions to indicate that the FCC *must* impose spectrum aggregation limits upon forward auction participants. Rather, the language of the Act at § 6404(17)(b), when read in conjunction with § 309(j)(3)(B), indicates that the Congressional

[54] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6404(17)(b), 125 Stat. 156 (2012) (Spectrum Act).

[55] 47 U.S.C. § 309(j)(3)(B).

objective of prohibiting excessive concentration of licenses is merely one of many objectives that the FCC must *consider* when creating rules for the 600 MHz auction.[56] Furthermore, the phrase "shall seek to promote" implicitly suggests that Congress intended for the FCC to maintain discretion over whether or not to impose spectrum aggregation limits upon 600 MHz forward auction participants as the FCC seeks to promote the primary objective of promoting economic opportunity and competition.

Although the FCC has the statutory authority and discretion to implement spectrum aggregation limits, the FCC's authority is limited by the fact that it must balance any spectrum aggregation rule with the statutory requirement that the forward auction raise revenue that equals or exceeds costs associated with the incentive auction itself (i.e. (total incentive auction revenue) ≥ (the compensation required to pay reverse auction bidders) + (the FCC's cost of conducting the forward auction) + (the reimbursement costs necessary for reassigning and relocating broadcasters)).[57] In other words, the FCC *may not* impose spectrum aggregation limits that prevent the forward auction from raising sufficient funds to cover the cost of the incentive auction in its entirety, even though the FCC technically has the discretionary authority to do so. As a corollary, if imposing a spectrum aggregation is *likely* to prevent the FCC from raising sufficient funds to cover the auction's costs, the FCC may not implement such a rule.

Moreover, the FCC must examine any proposed spectrum aggregation limits within the context of the Public Safety Trust Fund which indicates that Congress intended for the incentive

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[56] 47 U.S.C. § 309(j)(3)(B) (stating that the FCC shall seek to promote objectives including the development and rapid deployment of new technologies to the public, promoting economic opportunity and competition by avoiding excessive concentration of licenses, recovering for the public a portion of the value of the public spectrum resources, promoting the efficient use of spectrum, purposes under 47 U.S.C. § 151, etc).

[57] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6403(c)(2)(B), 125 Stat. 156 (2012) (Spectrum Act).

auction to raise in excess of $29,850,000,000.[58] Specifically, the Act states that, "As amounts are deposited in the Public Safety Trust Fund, such amounts *shall be used to make* the following deposits or payments in the *following order of priority . . .*" [59] In order of priority, Congress's eight enumerated programs are: 1) repayment of the amount borrowed for the first responder network authority ($2,000,000,000), 2) state and local implementation of the Public Safety Trust Fund ($135,000,000), 3) buildout of the public safety network ($7,000,000,000), 4) public safety research ($100,000,000), 5) deficit reduction ($20,400,000,000), 6) 9-1-1, E9-1-1, and next generation 9-1-1 implementation grants ($115,000,000), 7) additional public safety research ($200,000,000), and 8) additional deficit reduction (any remaining funds).[60] By listing eight programs under § 6413(b) with specific monetary amounts, Congress indicated its intent that the incentive auction raise sufficient revenue to fund these programs. Accordingly, because Congress intended for the forward auction to raise an amount equal to or in excess of $29,850,000,000, the FCC should promulgate auction rules that encourage free market forces rather than impose spectrum aggregation limits in order to fully fund these programs.[61]

As a matter of public policy, spectrum aggregation limits are unnecessary for the following reasons: carriers such as Sprint have nationwide spectrum licenses below the 1 GHz frequency, carriers such as T-Mobile have substantial spectrum holdings above the 1 GHz

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[58] Previously within the Act, Congress stated that all incentive auction proceeds not used for the purpose of repaying reverse auction participants, above the $1,750,000,000 deposited into the TV Broadcaster Relocation Fund, shall be deposited into the Public Safety Trust Fund. *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6402(G)(iii)(I-II), 125 Stat. 156 (2012) (Spectrum Act). After the end of fiscal year 2022, any remaining proceeds within the Public Safety Trust Fund shall be dedicated for the sole purpose of deficit reduction. *Id.* at § 6402(G)(iii)(II)(bb).

[59] *Id.* at § 6413(b) (emphasis added).

[60] *Id.*

[61] Recognizing that Congress did not specifically state that the incentive auction *must* raise $29,850,000,000, this is a further example of the many objectives that the FCC must *consider* when creating rules for the 600 MHz auction.

frequency, and carriers such as AT&T and Verizon currently provide mandatory roaming agreements to smaller carriers for voice and data, on "commercially reasonable" terms and conditions, which permit smaller carriers to utilize AT&T's and Verizon's lower level spectrum.[62] [63]

Although smaller wireless carriers make seemingly compelling arguments for spectrum aggregation limits, their arguments lack merit. For example, T-Mobile and Sprint have urgently petitioned the FCC to create spectrum aggregation limits that prevent AT&T and Verizon from acquiring all or substantially all of the valuable 600 MHz spectrum. Their arguments posit that, because AT&T and Verizon are large and well-capitalized, smaller carriers like T-Mobile and Sprint cannot financially compete with the larger carriers. Additionally, their arguments posit that because AT&T and Verizon own substantially all of the spectrum commercially available below 1 GHz, it would be unfair for the FCC to permit AT&T Verizon to also obtain a majority of the low level 600 MHz spectrum. However, the picture painted by T-Mobile and Sprint oversimplifies the matter and understates the purchasing power available to them. T-Mobile and Sprint may be the smallest of the four national carriers in terms of subscriber base and annual revenue, but both carriers have substantial spectrum holdings and subscriber bases of their

[62] *See* http://www.fiercewireless.com/story/sprint-spark-combine-lte-800-mhz-19-ghz-and-25-ghz-will-offer-50-60-mbps-pe/2013-10-30 (last visited Nov. 16, 2013); http://www.fiercewireless.com/story/t-mobile-cmo-knocks-att-being-big-and-being-bad/2013-09-25 (last visited Nov. 16, 2013); http://www.fiercewireless.com/story/fcc-approves-mandatory-data-roaming-rules/2011-04-07 (last visited Nov. 16, 2013).

[63] Furthermore, just because a party has successfully purchased lower level spectrum in a previous FCC spectrum auction, this does not preclude a successful bidder from reselling spectrum to a willing buyer. http://www.fiercewireless.com/story/t-mobile-rules-out-h-block-auction-willing-buy-spectrum-private-party/2013-11-13.

own.[64] Of even greater significance, T-Mobile and Sprint are backed by well-capitalized parent companies that can financially compete with AT&T and Verizon for 600 MHz licenses.[65] If the FCC adopts spectrum aggregation limits for the 600 MHz incentive auction, in effect, such limits will only result in a transfer of licenses to T-Mobile and Sprint at a price lower than the actual market value.[66]

Additionally, the arguments made by T-Mobile and Sprint for spectrum aggregation limits are self-defeating. The more urgently and vigorously that the carriers argue that they *need* lower frequency spectrum, the *less likely* it is for them to decline to competitively bid with AT&T and Verizon. For example, necessity dictates that if T-Mobile and Sprint in fact need to obtain lower-level spectrum to compete with AT&T and Verizon in the long-term, in the short-term, they will obtain the capital necessary (or create a bidding consortium) to outbid AT&T and Verizon for 600 MHz licenses. Otherwise, their need for lower level spectrum is not credible. As such, it is reasonable to conclude that free market forces are sufficient to preclude the need for the FCC to impose strict spectrum aggregation limits.

Although it is impossible to predict at this point how much revenue the forward auction will raise, the FCC should not unduly restrain free market forces by imposing a strict one-third spectrum aggregation limit upon large and well-capitalized bidders. In effect, imposing such an aggregation limit upon larger wireless carriers such as AT&T and Verizon will reduce the

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[64] AT&T Ex Parte Notice, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, (Oct. 29, 2013), http://apps.fcc.gov/ecfs/document/view?id=7520953217.

[65] Sprint's parent company, Softbank, is one of the largest wireless carriers in Japan; T-Mobile's parent company, Deutsche Telecom, is one of the largest wireless carriers in Europe. *Id.*

[66] Sprint and T-Mobile are substantially more well-capitalized than smaller regional carriers. As such, spectrum aggregation limits primarily stand to benefit only themselves or Dish rather than their smaller regional carrier competitors.

maximum level of revenue possible for the forward auction. Similarly, imposing a "Dynamic Market Rule" or another similar rule is likely to chill bidding and to reduce auction revenue, but to a lesser extent than a strict one-third aggregation limit.

Conceding that spectrum aggregation limits do promote the legislative objective of avoiding excessive concentration of licenses, the FCC should instead choose to impose additional requirements upon licensees that acquire 600 MHz spectrum above the one-third threshold. Imposing roaming agreements, infrastructure sharing, and / or accelerated buildout requirements upon spectrum acquired by carriers above the one-third threshold will sufficiently mitigate potential problems associated with the excessive concentration of licenses.[67] At the same time, a policy that imposes additional requirements upon spectrum above the one-third limit will promote free market forces by ensuring competitive bidding among all parties, both large and small carriers alike. As a result, under this proposed scheme, the FCC will raise sufficient revenue to fund the 600 MHz incentive auction while simultaneously meeting its statutory obligation of seeking to promote economic opportunity and competition.

IV. CREATING SMALL GUARD BANDS VS. CREATING LARGE GUARD BANDS FOR UNLICENSED USE

It is clear that the FCC maintains the authority, subject to other statutory obligations and restrictions, to create guard bands for unlicensed use for the 600 MHz incentive auction in accordance with § 6407(a) and (c) of the Act.[68] It is additionally clear that Congress intended for

[67] For example, mandatory agreements permit smaller wireless carriers to access the lower frequency spectrum of larger carriers at reasonable prices.

[68] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6407(a), 125 Stat. 156 (2012) (Spectrum Act) (stating that, "Nothing in subparagraph (G) of section 309(j)(8) of the Communications Act of 1934, as added by section 6402, or in section 6403 shall be construed to prevent the Commission from using relinquished or other spectrum to implement band plans with guard bands."); § 6407(c) (stating that, "The Commission may permit the use of such guard bands for unlicensed use.").

the FCC to prioritize preventing harmful interference over promoting unlicensed use when creating guard bands for the 600 MHz spectrum under § 6407(b) and (e).[69] However, this raises the following question: how does the phrase "shall be no larger than is technically reasonable" under § 6407(b) of the Act *limit* the FCC's authority to create guard bands for unlicensed use? [70]

Seemingly, the phrase "technically reasonable" should be read in conjunction and limited by the phrase "to prevent [the] harmful interference" that follows.[71] Thus, a logical interpretation of "technically reasonable" is that the FCC must have a reasonable certainty that the technical specifications of the proposed guard band will prevent all harmful interference, but not all non-harmful interference, between the licensed services of television broadcasters and cellular carriers. Furthermore, in stating that such guard bands "*[S]hall be no larger* than is *technically reasonable* to prevent harmful interference," Congress has explicitly given priority to minimizing the size of the 600 MHz guard bands.[72] As such, the FCC's stated policy of "Repurposing the *maximum amount* of UHF band spectrum *for . . . unlicensed use* in order to unleash investment and innovation . . ." seemingly contradicts the will of Congress and the language of the Act which contemplates creating the smallest guard bands that are technically

[69] *Id.* at § 6407(b) (stating that, "Such guard bands *shall be no larger than is technically reasonable to prevent harmful interference* between licensed services outside the guard bands.) (emphasis added); *Id.* at § 6407(e) (stating that, "The Commission may not permit *any* use of a guard band that the Commission determines would cause harmful interference to licensed services.") (emphasis added).

[70] *Id.* at § 6407(b). The phrase "technically reasonable" does not *require* the FCC to create guard bands that prevent *all* interference between broadcasters and cellular carriers. Otherwise, Congress would have written "shall be no larger than is technically reasonable to prevent all interference" rather than "harmful interference" within the Act.

[71] "Harmful interference" refers to any interference that harms the licensed services utilized by television broadcasters and cellular carriers in the soon-to-be-created guard band space. *Id.*

[72] *Id.* at § 6407(b).

reasonable.[73] Accordingly, the FCC should only create guard bands that are the smallest size technically reasonable, as explicitly stated by Congress, to prevent harmful interference between television broadcasters and cellular carriers.[74]

Although utilizing the 600 MHz spectrum guard bands for unlicensed use presents exciting possibilities of growth and innovation similar to those realized with the advent of Wi-Fi, allocating spectrum for unlicensed use is merely a secondary priority of the incentive auction.[75] Because Congress indicated that the FCC *may* rather than *must* permit the use of guard bands for unlicensed use, the FCC should not give priority to unlicensed use over reclaiming the maximum level of spectrum possible for cellular carrier use.[76]

In order to implement Congress's instruction that the guard bands "shall be no larger than technically reasonable," the FCC should consider alternate band plans that more efficiently utilize the 600 MHz spectrum. For example, under one proposed plan, the FCC could reduce the proposed guard band from 6 to 5 MHz which would leave an additional 1 to 5 MHz of spectrum available for auction in any given market.[77] If every market has 5 MHz of spectrum leftover

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[73] Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 5-6 (proposed Nov. 21, 2012).

[74] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6407(b), 125 Stat. 156 (2012) (Spectrum Act).

[75] Even by virtue of its title, "unlicensed" use is secondary to "licensed" use.

[76] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6407(a), 125 Stat. 156 (2012) (Spectrum Act).

[77] The FCC's conclusory statement "The Commission has previously found 6 megahertz of spectrum is sufficient to protect digital television receivers against . . . transmitters . . ." is insufficient to support the FCC's current 6 megahertz guard band proposal. Notice of Proposed Rulemaking, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 77 Fed. Reg. 69933 at 57 (proposed Nov. 21, 2012). The FCC should make a new determination as to whether or not current television broadcast and cellular carrier technology sufficiently prevents harmful interference between licensed services. Since the FCC has not auctioned off large amounts of television broadcast spectrum to cellular carriers since the 700 MHz spectrum auction of 2008, it should make a new determination as to whether or not the

from the reverse auction, the FCC could then auction off one additional 5 MHz nationwide license. However, even if the FCC determines that a 6 MHz guard band is necessary to prevent harmful interference, at the very least, the FCC should create additional licenses for markets where 1.4, 3, or 5 MHz of remainder spectrum is available.[78] Although the wireless industry does not currently utilize 1.4 or 3 MHz spectrum bands in the U.S., LTE technology technically permits wireless carriers to roll out service on lower amounts of spectrum. Logically, carriers will increasingly turn to narrow bands of spectrum in the future as their data needs increase and as spectrum becomes more scarce. Furthermore, as technology advances, carriers will be able to roll out licensed services on narrower bands of spectrum at decreasing levels of cost. A guard band plan that minimizes the amount of guard band spectrum necessary while maximizing the amount of spectrum available for auction will ensure that the FCC complies with Congress's instruction that, "Such guard bands *shall be no larger than is technically reasonable* to prevent harmful interference between licensed services outside the guard bands." [79]

V. ENSURING REVERSE AUCTION LICENSEE CONFIDENTIALITY VS. IMPOSING REVERSE AUCTION LICENSEE CONFIDENTIALITY

It is clear that the FCC must, subject to other statutory obligations and restrictions, take "[A]ll reasonable steps necessary to protect the confidentiality of Commission-held data of a licensee participating in the reverse auction . . . including withholding the identity of such licensee until the reassignments and reallocations . . . become effective . . ." in accordance with

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technology of today, likely to be employed by broadcasters and cellular carriers after the 600 MHz auction, will prevent harmful interference between licensed services. If so, the FCC must create guard bands smaller than 6 megahertz because they are "no larger than technically reasonable."

[78] Any remainder spectrum, not utilized to create additional licenses, may then be allocated for unlicensed use.

[79] *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, § 6407(e), 125 Stat. 156 (2012) (Spectrum Act) (emphasis added).

the express language of § 6403(a)(3) of the Act.[80] However, this raises the following question: can the FCC extend the obligation to protect confidential Commission-held data to applicants in the reverse auction in accordance with the language of the Act?

The phrase "all reasonable steps necessary" should be read in conjunction with the phrase "Commission-held data."[81] It is clear that the plain language of the Act does not *require* the FCC to prohibit licensees from announcing their participating in the auction or from releasing their own identifying information to the public. Otherwise, Congress would have included language such as "Commission-held *and* applicant-held data" within the Act in order to indicate that the FCC *must* impose confidentiality requirements upon reverse auction participants. In fact, it does not appear from the plain language of the Act that Congress ever contemplated applying the confidentiality requirement to reverse auction participants.[82] Rather, the plain language of the Act only indicates that Congress intended the confidentiality limitation to apply to the FCC and "Commission-held data," not to reverse auction participants.

As a matter of public policy, prohibiting reverse auction participants from disclosing their own participation in the reverse auction serves no discernible purpose.[83] Regulation for the sake of regulation that imposes confidentiality obligations upon reverse auction participants will unnecessarily complicate auction administration by the FCC and reduce auction efficiency for auction participants. Reverse auction participants should not have to adopt burdensome confidentiality processes in order to avoid disclosing their own participation in the reverse auction unless they desire anonymity. Accordingly, because the Act does not specifically

[80] *Id.* at § 6403(a)(3).
[81] *Id.*
[82] *Id.* at § 6403.
[83] Nothing prevents the FCC from protecting the integrity of incentive auction by prohibiting auction participants from communicating with one another directly or indirectly regarding the substance of their bids or bidding strategies.

prohibit licensees from announcing their participating in the auction or from releasing their own identifying information to the public, the FCC should decline to apply the confidentiality limitation to reverse auction participants.

CONCLUSION

The FCC Notice of Proposed Rulemaking provides a substantive opportunity for stakeholders, private citizens, government entities, and the FCC to dialogue over how best to implement the Act in accordance with the express laws, and implicit will, of Congress. Although the 600 MHz Spectrum Auction of 2014 is a constant tension between law and public policy, I believe that the FCC can and will implement rules for the auction that are consistent with the explicit instruction of Congress. In areas where the Spectrum Act of 2012 lacks clarity, the FCC must now determine how best to implement the incentive auction in accordance with the priorities that Congress has clearly instructed the FCC to consider. It is my hope that the FCC will give serious thought to: 1) encouraging free market forces by declining to create spectrum aggregation limits, 2) creating small guard bands for unlicensed use, and 3) declining to extend confidentiality limitations to reverse auction participants. Ultimately, the intent and letter of the law of Congress *must* and *shall* guide the FCC in creating rules for the 600 MHz Spectrum Auction of 2014.