Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions	)	GN Docket No. 12-268
	)	
	)	

COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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EXECUTIVE SUMMARY

As the Commission well knows, the nation's spectrum crunch is increasingly having an adverse impact on American consumers and businesses. The FCC's active efforts to implement the Spectrum Act, and thereby bring new spectrum to the market rapidly, are essential to maintaining American economic competitiveness. Through incentive auctions and repacking of the broadcast television band, the Commission has an unparalleled opportunity to repurpose a substantial amount of prime spectrum for mobile broadband services. But the statute affords the agency only a few key tools with which to work: repurposing government spectrum; affording more flexible use of commercial frequencies; and conducting incentive auctions. And with respect to the latter, the FCC has just one opportunity to use an incentive auction in the broadcast band – prime spectrum for wireless broadband uses. To ensure a successful auction, the agency must make decisions designed to: (1) maximize the amount of spectrum available for licensed mobile service; (2) encourage the greatest possible number of broadcast participants in the reverse auction; and (3) allow for the participation of all possible bidders in the forward auction.

The Spectrum Act is predicated on Congress' expectation that the world's first-ever incentive auction will maximize the amount of spectrum available for licensed uses. The Commission should adopt approaches to TV station repacking and guard-band size and usage with that ultimate objective in mind. With respect to repacking, the FCC should look to its DTV transition experience but also recognize that Section 6403(b)(2) affords the agency greater flexibility to achieve a more complex goal than was the case with DTV. Rather than requiring the FCC to "replicate" existing broadcast TV signals within a smaller TV band, lawmakers now have directed the Commission to "reasonably" protect the signals of TV licensees who wish to continue broadcasting. The agency should use this expanded authority to facilitate the most efficient repacking possible – and do so within the most expeditious time frame possible. With respect to guard bands, the Commission first must strive to maximize the amount of repurposed spectrum for licensed uses. Although lawmakers have afforded the FCC some discretion in the size and use of guard bands, that discretion is limited by the plain language of the statute: The agency may establish guard bands in its 600 MHz band plan provided that they are "no larger than is technically reasonable to prevent harmful interference between licensed services outside the guard bands."

Furthermore, while unlicensed uses in the TV "white spaces" can and should continue, the Commission should keep an open mind about the possibility of licensing any new guard bands. Licensing the guard band would simplify the challenges faced by broadcasters and primary mobile service providers that might suffer interference from users operating in the guard band. With a guard band licensee accountable for operations in the guard band (rather than a myriad of unlicensed users), primary users will be positioned to quickly resolve any interference problems that may occur.

Turning to the specifics of the incentive auction design, a necessary first step will be to design reverse auction rules that are as simple and attractive as possible. To be "simple" in a meaningful way, the regulations must be fair, transparent and readily understandable; to be "attractive," they must establish opening prices high enough to operate as real incentives. The *Notice*'s proposal for a "descending clock" approach to the reverse auction design – with initial

prices set by the FCC – has merit as long as opening prices attract many TV station bidders in locales where spectrum is most at a premium. This option, if executed well, should be the simplest mechanism for broadcasters because it would require less investment of time and resources on their part. The Commission should strive to fully clear as many stations in the largest markets as possible, but it would be worthwhile to at least explore additional options for broadcasters who wish to remain in the industry while also monetizing some part of their licensed spectrum's value. But in evaluating options beyond those expressly recognized by the statute – channel sharing and voluntary moves from a UHF to VHF channel – the FCC should assess whether the implementing rules can be kept relatively simple and transparent. An overly complex, multi-layered decision tree may be intimidating for some broadcasters, particularly those with limited resources to invest in educating themselves about the reverse auction process.

Attracting broadcaster participation in the reverse auction is just half the story. Meeting the Commission's goal of "encourag[ing] widespread participation in the reverse auction by broadcast television licenses" is necessarily related to the revenues via the forward auction. Robust competition among bidders for the newly available frequencies is the only source of funding available to encourage TV licensees to exit the business, cover repacking and administrative costs, and contribute to the build-out of the nationwide public safety network. An auction design that would limit bidder eligibility in the forward auction and/or reduces revenue may lead to an unsatisfactory outcome that fails the requirements of the Spectrum Act and, more fundamentally, fails American consumers as well. The FCC, therefore, should adopt the *Notice*'s proposal for an open eligibility standard for the forward auction. The agency also must take care to not deter potential participants at any stage of the forward auction. Implementing rules that inject post-auction uncertainty, such as a mandate that could require winning bidders to divest some spectrum, is likely to put downward pressure on the size of potential bids and could even retard participation. Both outcomes would threaten the success of the first-ever incentive auction – which in turn might cast a pall over the potential use of incentive auctions to repurpose spectrum in the future.

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COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

The Telecommunications Industry Association ("TIA") hereby responds to the *Notice of Proposed Rulemaking* ("*Notice*")[1] soliciting comment on the Commission's plan for using an incentive auction to repurpose television broadcast spectrum for mobile broadband offerings consistent with the Middle Class Tax Relief and Job Creation Act of 2012 ("Spectrum Act").[2] As the leading trade association for manufacturers and suppliers of high-tech communications equipment, TIA has long been an advocate for using incentive auctions to meet the growing demand for spectrum capable of supporting broadband services.[3] The spectrum crunch is increasingly having an adverse impact on American consumers and businesses, and the Commission's plans to bring new spectrum to the market rapidly are an important part of

[1] Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, *Notice of Proposed Rulemaking*, 27 FCC Rcd 12357 (2012) ("*Notice*"). TIA represents approximately 600 member companies that manufacture or supply the products and services used in global communications across all technology ("ICT") platforms. For more than 80 years, TIA has worked to expand access to information and communications technologies, including broadband, mobile wireless, cable, satellite, and unified communications networks.

[2] *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, §§ 6402, 6403, 6407, 126 Stat. 156, 224-30, 231-32 (2012) ("Spectrum Act").

[3] *See, e.g.* Letter from Grant E. Seiffert to Hon. Fred Upton, *et al.* (dated Dec. 11, 2012), *available at* http://www.tiaonline.org/sites/default/files/pages/TIA%20Letter%20to%20House%20EC%2012-11-12.pdf; TIA Press Release, *TIA Hails Congress for Coming to Agreement on Spectrum Incentive Auction Authority and Creating a Public Safety Network* (rel. Feb. 17, 2012), http://www.tiaonline.org/news-media/press-releases/tia-hails-congress-action-spectrum-and-public-safety-network; TIA Press Release, *Telecommunications Industry Association Applauds FCC Action on Incentive Auctions* (rel. Sept. 7, 2012), http://www.tiaonline.org/news-media/press-releases/telecommunications-industry-association-applauds-fcc-action-incentive.

maintaining American economic competitiveness. Through incentive auctions and repacking of the broadcast television band, the Commission has an unparalleled opportunity to repurpose a substantial amount of prime spectrum for mobile broadband services. As such, TIA submits these comments to assist the FCC in crafting incentive auction rules that will maximize the deployment of 600 MHz band advanced broadband services, consistent with the dictates of the Spectrum Act.

I. INTRODUCTION AND SUMMARY

There can be no serious dispute about the nation's pressing need for additional spectrum capable of supporting mobile broadband.[4] By any metric, America's use of mobile connectivity is growing exponentially. This increased demand for capacity-intensive mobile broadband is perhaps best illustrated by the rapid growth of smartphone adoption – nearly half of all wireless phones sold in 2011 were smartphones, a share that is expected to increase to more than two-thirds by 2015.[5] Spending on data services will overtake that on voice services this year, and by 2015, spending on data services is expected to be 89 percent greater than spending on voice services.[6] The potential impact on wireless ICT infrastructure and manufacturing, in turn, should be positive and strong – with all the implications which that impact carries for U.S. jobs and the nation's global competitiveness.

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[4] *See, e.g.*, *Notice*, 27 FCC Rcd at 12358 ¶ 1 ("[U]sage of our wireless networks is skyrocketing, dramatically increasing demands on both licensed and unlicensed spectrum – the invisible infrastructure on which all wireless networks depend. Our country faces a major challenge to ensure that the speed, capacity, and accessibility of our wireless networks keeps pace with these demands in the years ahead, so the networks can support the critical economic, public safety, health care, and other activities that increasingly rely on them. Meeting this challenge is essential to continuing U.S. leadership in technological innovation, growing our economy, and maintaining our global competitiveness.").

[5] *See* 2012 TIA Market Review & Forecast, at 4-2 ("TIA Market Review").

[6] *See* TIA Market Review at 1-42.

It is clear that the skyrocketing demand for capacity is straining the available wireless spectrum's capacity in many parts of the country. Every Commissioner has recognized this troubling situation.[7] In Chairman Genachowski's recent words, "[t]he sobering fact is that based on today's projections and today's technologies, demand threatens to outpace the supply of spectrum available for mobile broadband in the coming years."[8]

Addressing this spectrum shortfall will yield benefits well beyond the obvious and important one of satisfying consumer demand. Devoting more spectrum to digital mobile uses also will help to propel new investment in critical wireless network infrastructure, which in turn should lead to thousands of new jobs as well as improved mobile broadband service for Americans. History can be a useful guide here: Spectrum reallocations to mobile services that occurred from 1994 to 2000 led to a 250 percent increase in investment and a 300 percent increase in jobs in the mobile market.[9] A 2010 Commission staff technical paper estimated that

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[7] *See, e.g.*, Robert M. McDowell, Commissioner, Federal Communications Commission, Remarks before TIA 2012: Inside the Network, Dallas, TX, *A Spectrum Policy to Promote American Economic Growth*, at 5 (June 7, 2012) ("[M]ore powerful 4G networks, sophisticated devices and complex mobile applications are taxing spectrum availability."); Mignon Clyburn, Commissioner, Federal Communications Commission, Prepared Remarks at 2nd Annual Americas Spectrum Management Conference, Washington, D.C., at 2 (Oct. 23, 2012) ("The sobering fact is that based on today's projections and technologies, the demand for spectrum threatens to outpace supply, sooner rather than later. This issue is particularly acute in the United States, where networks are running at the highest utilization rate of anywhere in the world."); Jessica Rosenworcel, Commissioner, Federal Communications Commission, Remarks on *Silicon Flatirons: The Next Ten Years of Spectrum Policy*, Washington, D.C., at 2 (Nov. 13, 2012) ("Rosenworcel Remarks") ("In the simplest terms, the demand for our airwaves is going up and the supply of unencumbered spectrum is going down"); Ajit Pai, Commissioner, Federal Communications Commission, Remarks at CTIA's Mobilecon, San Diego, CA, at 3 (Oct. 10, 2012) ("Pai Remarks") (Making more spectrum available "isn't a matter of convenience. It's a necessity. With smartphones sending 32 times as much data traffic as a basic phone, and tablets 121 times as much, we cannot live off the last decade's spectrum gains for much longer.").

[8] Julius Genachowski, Chairman, Federal Communications Commission, Prepared Remarks at University of Pennsylvania – Wharton, Philadelphia, PA, *Winning the Global Bandwidth Race: Opportunities and Challenges for Mobile Broadband*, at 3 (Oct. 4, 2012).

[9] *See* TIA, *Broadband Spectrum: The Engine for Innovation, Job Growth and Advancement of Social Priorities* (Mar. 2011), *available at* http://www.tiaonline.org/sites/default/files/pages/TIASpectrumWhitePaperFINAL.pdf.

the value created by releasing enough spectrum to meet demand is likely to exceed $100 billion, without even incorporating the "net social benefits" from making such spectrum available.[10] In short, the impact of additional spectrum availability on the U.S. economy, including on the ICT manufacturers represented by TIA, should not be underestimated.

Congress and the Commission have recognized that reallocating a portion of the television broadcast spectrum for broadband use would represent a material step towards meeting the substantial challenges America faces in addressing the spectrum crunch.[11] Policymakers have only a few key tools with which to work on the problem: repurposing government spectrum, affording more flexible use of commercial frequencies, and conducting incentive auctions. And with respect to the latter, the FCC has just one opportunity to use an incentive auction in the broadcast band.[12] A well-designed broadcast incentive auction and repacking plan will unleash significant investment. A flawed approach to the auction, on the other hand, would frustrate wireless providers' ability to meet growing demand, raise consumer prices, slow investment in information and communications technology, and jeopardize the United States'

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[10] FCC Staff Technical Paper, *Mobile Broadband: The Benefits of Additional Spectrum*, at 26 (Oct. 2010), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-302324A1.pdf.

[11] *See, e.g.*, Federal Communications Commission, *Connecting America: The National Broadband Plan* at 88-93 (2010) ("National Broadband Plan"); *Legislative Hearing to Address Spectrum and Public Safety Issues Before the H. Comm. on Energy and Commerce, Subcomm. On Communications and Technology* (July 15, 2011) (Statement of Rep. Greg Walden (R-OR)) ("We want to ensure that the scarce and valuable spectrum the public owns is put to its best and highest use…."); *Hearing on "Keeping the New Broadband Spectrum Law on Track" Before the H. Comm. on Energy and Commerce, Subcomm. On Communications and Technology* (Dec. 12, 2012) (Statement of Rep. Henry Waxman (D-CA)) (The Spectrum Act "provided new authority to the Federal Communications Commission to conduct incentive auctions with the purpose of alleviating the spectrum crunch fueled by ever growing demands for mobile broadband services…."); Rosenworcel Remarks at 4 (noting that broadcast incentive auctions "are on the horizon" and are a step to reach President Obama's 500 megahertz benchmark for new wireless broadband use); Pai Remarks at 3-4 (citing broadcast incentive auctions as part of a "three-step plan for getting … back on track" to reach the National Broadband Plan's 300 and 500 megahertz goals).

[12] *See* Spectrum Act § 6403(e).

leadership in the global wireless marketplace. It also may cast a cloud over the future usefulness of incentive auctions to repurpose other spectrum.

To enhance the potential for success, the Commission's approach to implementing the broadcast incentive auction should be guided by these three fundamental principles:

- ***Fealty to the Spectrum Act.*** The Spectrum Act is a product of careful congressional negotiation and bipartisan compromise. Accordingly, the Commission should be faithful to both the language and the intent of its provisions.

- ***Maximizing Repurposed Spectrum and Fairness to Broadcasters.*** The Commission should maximize the amount and utility of the spectrum repurposed for licensed commercial mobile services, while assuring that the remaining broadcasters are treated in a fundamentally fair manner.

- ***Maximizing Participation.*** Particularly because Congress has afforded the Commission with only one chance to conduct this incentive auction,[13] the Commission must assure a successful auction, which in turn requires assuring maximum participation by broadcasters and forward auction participants.

The discussion below suggests how the Commission might best apply these principles to the rulemaking choices now before it.

II. THE AUCTION DESIGN SHOULD BE AIMED AT MAXIMIZING THE SPECTRUM AVAILABLE FOR LICENSED MOBILE SERVICES

While some doubt whether the Commission will be able to craft an incentive auction regime that results in freeing the 120 MHz of spectrum for mobile broadband services initially envisioned by the National Broadband Plan, Congress clearly intends that the amount of spectrum to be auctioned for mobile broadband use be maximized to meet the spectrum crunch and achieve other important policy objectives.[14] To maximize the amount of television

[13] *See id.*

[14] As an initial matter, the Spectrum Act requires that the forward auction of recovered broadcast spectrum generate enough proceeds to pay successful bidders in the reverse auction, cover administrative costs, and cover relocation costs. *See id.* § 6403(c)(2). The statute also allocates additional funds recovered from the auction to the build-out of the public safety broadband network, state and local first responders, public safety research, deficit reduction, and next-generation 9-1-1 implementation – goals

broadcast spectrum freed for auction, the Commission should adopt an approach to TV station repacking and guard-band size and usage in a manner consistent with congressional goals.

A. Plans for Repacking the Remaining Broadcast Stations Should Maximize the Freeing of Broadcast Spectrum for Auction Consistent with the Spectrum Act

While the Commission can and should draw on repacking lessons learned in the recent digital television ("DTV") transition, the Commission must approach its new repacking task with the understanding that the Spectrum Act affords the agency greater flexibility to achieve a more complex goal than was the case with DTV. Back then, Congress had mandated a "replication" of existing broadcast TV signals within a smaller TV band.[15] In contrast, the Spectrum Act today directs the Commission to "reasonably" protect the signals of TV licensees who wish to continue broadcasting, allowing the Commission greater flexibility to achieve the goal of maximizing the amount of spectrum available for repurposing to mobile broadband use via auction.[16]

This new balancing of policy goals is reflected in part in the statutory provision explicitly governing repacking. Section 6403(b)(2) directs the Commission to "make all *reasonable efforts* to preserve, as of the date of the enactment of this Act, the coverage area and population served

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that lawmakers have discussed specifically in connection with the incentive auction for the broadcast band. *See id.* §§ 6403(d)(4), 6413 (b); *see also Hearing on "Keeping the New Broadband Spectrum Law on Track" Before the H. Subcomm. on Commc'ns and Tech.*, 112th Cong. (Dec. 12, 2012) (statement of Rep. Greg Walden, Chairman, H. Subcomm. on Commc'ns and Tech.) ("[T]he revenue generated, which was used in part to help pay for the middle class tax cut and extension of unemployment benefits, will also be used to help pay for the interoperable public safety broadband network under FirstNet, to fund next generation 9-1-1 service and to invest in public safety research and development. A broadcast incentive auction that fails to raise the revenue needed for these projects … is a failure."); *Hearing on "Keeping the New Broadband Spectrum Law on Track" Before the H. Subcomm. On Commc'ns and Tech.*, 112th Cong. (Dec. 12, 2012) (statement of Rep. Fred Upton, Chairman, H. Comm. on Energy and Commerce) ("Designing a reverse auction that encourages television stations to relinquish spectrum, reorganizing the stations that choose to remain on air, and repackaging and selling the cleared spectrum in a way the generates $7 billion for First Responders certainly presents the agency with some challenges. To meet those complex challenges, the FCC should focus on maximizing the spectrum it clears and the revenue it generates.").

[15] *See, e.g.*, 47 U.S.C. § 336(f)(1)(D)(i) and (ii) (requiring FCC to assure "replication" of full-power TV service area and permitting "maximization" of such signals wherever technically feasible).

[16] *Compare id. with* Spectrum Act § 6403(b)(2).

of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69…."[17] As the *Notice* posits, the statute affords the Commission flexibility here that it lacked in the past. Thus, for example, the agency plainly need not precisely replicate every square foot of a station's pre-repacking footprint.[18] The *Notice* correctly identifies a variety of practical impediments to doing so.[19] Where it would facilitate repacking efficiency, reductions of up to 2 percent of a TV station's geographic coverage area would be *de minimis* and therefore should be deemed reasonable.[20] Similarly, Section 6403(b)(2) can and should be construed to support minor reductions in aggregate population served by a television station in order to resolve technical challenges involved in repacking.[21] Although TIA takes no position as to the three approaches proposed in the *Notice* for measuring compliance with the population coverage requirement, it does agree with the *Notice*'s conclusion that *de minimis* reductions of up to 0.5 percent should be permitted.[22] Moreover, the new regulations should encourage broadcasters to agree to further reductions in coverage area or population served in exchange for compensation – but only if these opportunities can be accomplished without introducing undue complexity that could deter broadcaster participation in the reverse auction.[23]

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[17] Spectrum Act § 6403(b)(2) (emphasis added).

[18] In contrast, the Commission during the DTV transition sought to allow TV broadcasters to maximize their signal coverage areas when possible. *See, e.g.*, Review of the Commission's Rules and Policies Affecting the Conversion To Digital Television, *Memorandum Opinion and Order*, 16 FCC Rcd 20594, 20599 ¶ 12 (2001).

[19] *See Notice*, 27 FCC Rcd at 12391 ¶ 100 ("We recognize that construction of a transmitting antenna that matches precisely the antenna pattern created by the software is impractical in some cases, and that the closest practical design might slightly extend a station's coverage contour (that is, the area within which the station is protected from interference) in some directions and decrease it in others.") (citation omitted).

[20] *Id.* at 12391 ¶ 101.

[21] *Id.* at 12392-96 ¶¶ 103-110.

[22] *Id.* at 12392 ¶ 103.

[23] *Id.* at 12396 ¶ 109.

The Commission also has authority to maximize through other means the amount of auctionable spectrum freed through repacking. Section 6403(b)(2) plainly empowers the FCC to limit repacking rights to those full-power and Class A TV facilities licensed as of the Spectrum Act's date of enactment, February 22, 2012 and, as proposed in the *Notice*, the Commission should require preservation only with regard to facilities that were licensed, or for which an application for license to cover authorized facilities already was on file with the Commission, as of that date.[24] And under its longstanding statutory authority to distinguish between primary and secondary uses,[25] the agency should rescind the licenses of non-Class A low-power TV stations or other secondary users where doing so facilitates efficient repacking.

Finally, as the *Notice* suggests, the FCC should adapt its successful DTV repacking procedural rules for the incentive auction repacking process.[26] As a general matter, this means establishing streamlined application processing procedures and, as possible, even shorter construction deadlines. The *Notice* correctly notes that the three-year period for building out typical broadcast construction permits is neither necessary nor desirable in this context.[27] Therefore, the FCC should establish appropriate reporting milestones for participating broadcasters to assure timely completion of the transition.

B. The Rules Governing the Size and Use of Guard Bands Must Be Consistent with Congressional Objectives

Although TIA does not advocate for any specific band plan proposal at this time, it urges the Commission to approach the task of developing a plan in light of the guiding principles

[24] *Id.* at 12390 ¶ 98.

[25] 47 U.S.C. §§ 303, 306.

[26] *Notice*, 27 FCC Rcd at 12391 ¶ 101.

[27] *Id.* at 12464 ¶ 332.

outlined above.[28] With respect to guard bands generally, the FCC should first strive to maximize the amount of repurposed spectrum for licensed uses. This goal also comports with congressional intent; while lawmakers have afforded the Commission some discretion in the size and use of guard bands, that discretion has limits.

The language and design of the Spectrum Act makes this point apparent: There is *only* one exception to the statute's general directive requiring use of a forward auction to license spectrum freed as a result of the reverse auction and repacking process.[29] That lone exception permits the Commission to implement guard bands in developing its 600 MHz band plan provided that they are "no larger than is technically reasonable to prevent harmful interference between licensed services outside the guard bands."[30] The provision also states that the FCC "may permit use of such guard bands for unlicensed use."[31]

This plain language evinces a careful compromise among members of Congress that the FCC must respect.[32] As such, the Commission cannot, as proposed in the *Notice*, expand the

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[28] *See supra* Section I.

[29] Spectrum Act § 6403(c)(1)(a).

[30] *See id.* at § 6407(a), (b).

[31] *Id.* at § 6407(c).

[32] The Commission is bound to discern legislative intent from the plain language of the statute. *See, e.g.*, *Connecticut Nat'l Bank v. Germain*, 503 U.S. 249, 253-54 (1992) ("[I]n interpreting a statute a court should always turn to one cardinal canon before all others…[C]ourts must presume that a legislature says in a statute what it means and means in a statute what it says there."); *see also* 2A *Norman J. Singer, Sutherland Statutory Construction* § 46:01 (6th ed. 2000). With respect to Section 6407(b), because the Spectrum Act contains no definition of the term "technically reasonable," the Commission should look to the common understanding of the term to require that guard bands be "not excessive or extreme" in size. AMERICAN HERITAGE DICTIONARY, 2d College Edition, at 1031 (1991) (definition of "reasonable").

This interpretation of the statutory text comports with the history of its adoption. The version of the legislation initially passed by the House did not include the mandate to minimize the guard bands to only the "technically reasonable" size needed to prevent "harmful interference…." *See generally* Middle Class Tax Relief Act and Job Creation Act of 2011, H.R. 3630 (as engrossed in House on Dec. 13, 2011), at Title IV- Jumpstarting Opportunity with Broadband Spectrum Act of 2011. Instead, that version required the Commission to auction all reclaimed spectrum without any mention of guard bands. *See id.* § 4104(a)(1). The language restricting the size of the guard bands was added by the Conference Committee

guard band beyond that necessary to provide interference protection as an expedient to providing for unlicensed use of any "remainder" spectrum (spectrum in a given market that does not neatly fit into 5 MHz channels).[33] To the contrary, Congress has dictated that all spectrum other than the bare minimum required for interference protection be licensed via auction, and Congress made no exception for any "remainder" spectrum. "Remainder" spectrum, like all reclaimed spectrum save for guard bands minimally sized to avoid interference, must be auctioned.

In contrast to the issue of guard band size, the Spectrum Act affords the Commission flexibility in regulating guard bands to assure that they pose no harmful interference to users of the adjacent spectrum. The *Notice* is predisposed towards allowing use of the guard bands on an unlicensed basis using the TV white spaces database-driven approach as a regulatory model.[34] While TIA supports the Commission's proposal to continue to allow TV white space devices within the repacked broadcast band on an unlicensed basis,[35] the agency should maintain an open mind regarding the possibility of licensing the guard bands to help manage interference issues involving adjacent broadcasters and 600 MHz broadband users.

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in lieu of the requirement to auction all of the reclaimed spectrum. Accordingly, the Commission should give meaning to the provision by ensuring that the guard bands are indeed "no larger than is technically reasonable to prevent harmful interference" between the licensed services abutting them. Spectrum Act § 6407(b); *see also* Majority Committee Staff, Committee on Energy and Commerce, U.S. House of Representatives, *Memorandum*: *Hearing on Keeping the New Broadband Spectrum Law on Track*, at 4 (Dec. 10, 2012) ("Majority Staff Hearing Memo") ("[I]f 6 MHz would suffice, as the item suggests, 'rounding up' to 10 MHz would violate the statute. Enlarging the guard bands for any reason other than mitigating interference, such as facilitating unlicensed use, would conflict with section 6407(b).").

[33] *See Notice*, 27 FCC Rcd at 12419-20 ¶¶ 175-76. A memorandum from the House Energy & Commerce majority staff notes that "[a]rtificially expanding the guard bands would … violate the statute". Majority Staff Hearing Memo at 4.

[34] *See Notice*, 27 FCC Rcd at 12435 ¶ 233. Indeed, if the Commission employs an unlicensed regime, the Spectrum Act dictates that usage be regulated by "a database or subsequent methodology as determined by the Commission." Spectrum Act § 6407(d).

[35] *See Notice*, 27 FCC Rcd at 12435 ¶ 233.

Adapting for the mobile broadband setting the approaches to protecting broadcasting from interference by TV white space devices would face significant challenges. The current TV white space regime, it must be remembered, has been crafted to provide protection to a largely static universe of users.[36] A guard band adjacent to the 600 MHz mobile broadband uplink spectrum will face a different challenge. For example, secondary guard-band users would need to protect primary mobile broadband devices from interference. At a minimum, further engineering analysis and testing would be necessary to determine the technical feasibility of that approach in the context of adjacent mobile communications services. Absent certainty that a database-driven regime will fully protect operations on the 600 MHz spectrum adjacent to the guard band, potential participants in the forward auction may limit the size of their bids or even refuse to participate altogether.[37] Moreover, if the Commission adopts an unlicensed approach which proves after the auction to have unanticipated technical flaws – a problem that the agency has encountered before[38] – the end result could be underutilized spectrum for the long term. At the very least, it likely would take years to rectify the problems after unlicensed devices have been deployed.

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[36] *See* Unlicensed Operation in the TV Broadcast Bands, *Second Report and Order and Memorandum Opinion and Order*, 23 FCC Rcd 16807, 16808-09 ¶ 1 (2008).

[37] The Commission has emphasized that certainty is of particular importance for the forward auction. *See Notice*, 27 FCC Rcd at 12401 ¶¶ 123, 125. In addition, licensing the blocks may also generate additional funding for the Nationwide Public Safety Broadband Network and/or deficit reduction through the auction of such spectrum.

[38] Unanticipated engineering challenges can arise despite the Commission's efforts to avoid them. *See, e.g.*, Federal Communications Commission, News Release, *Statement from FCC Spokesperson Tammy Sun on Letter from NTIA Addressing Harmful Interference Testing Conclusions Pertaining to LightSquared and Global Positioning Systems*, Feb. 14, 2012, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-312479A1.pdf; John Eggerton, *FCC Continues Working on DTV-Related Reception Issues*, BROADCASTING & CABLE (Aug. 17, 2009), *available at* http://www.broadcastingcable.com/article/327804-FCC_Continues_Working_On_DTV_Related_Reception_Issues.php.

Licensing the guard band would simplify the challenges faced by broadcasters and primary mobile service providers that might suffer interference from users operating in the guard band. With a guard band licensee accountable for operations in the guard band (rather than a myriad of unlicensed users), primary users will be positioned to rapidly resolve any interference problems that may occur.[39] Providing this additional security against interference may also encourage broadcasters and potential participants in the forward auction to participate in the process.[40]

This is not to say that all unlicensed uses of spectrum trigger the same level of concern. As noted above, TIA supports the continued availability of TV white spaces for unlicensed use now and in the future. Although fewer TV white spaces will be available after the post-auction repacking, those that remain will offer significant opportunities for new unlicensed uses. In addition, other spectrum, such as the 5350-5470 MHz band, holds tremendous promise for unlicensed use.[41] The Commission should not, however, reflexively adopt unlicensed use

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[39] In other circumstances where the Commission has established guard bands, the agency has licensed the guard band under service rules designed to avoid interference to adjacent primary services. *See* Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 14165 (2004); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Second Report and Order*, 15 FCC Rcd 5299 (2000).

[40] Licensing also should encourage additional cooperative efforts between the mobile service licensee and adjacent broadcasters to promote the most effective and efficient use of guard band spectrum. *See* Federal Communications Commission OSP Working Paper Series 43, *A Market-based Approach to Establishing Licensing Rules: Licensed Versus Unlicensed Use of Spectrum* (Feb. 2008).

[41] Section 6406 of the Spectrum Act requires the Commission to begin a proceeding by February 2013 to modify Part 15 rules to permit certain unlicensed devices to operate in the 5350-5470 MHz band. *See* Spectrum Act § 6406, 126 Stat. at 231. In addition, the Commission is considering permitting opportunistic use in the 3550-3650 MHz band in an ongoing proceeding. *See* Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band, *Notice of Proposed Rulemaking and Order*, FCC 12-148 (rel. Dec. 12, 2012). These efforts, in addition to the remaining TV white spaces, will provide substantial spectrum for unlicensed use.

policies here without fully analyzing the potential adverse consequences, particularly with only one opportunity to conduct a broadcast incentive auction.

III. THE FCC SHOULD ADOPT REVERSE AUCTION RULES THAT ARE AS SIMPLE AND ATTRACTIVE AS POSSIBLE IN ORDER TO ENCOURAGE THE GREATEST NUMBER OF BROADCAST PARTICIPANTS

If this first-ever incentive auction is to fulfill policymakers' hopes, it must begin by attracting a significant number of broadcasters intrigued by the prospect of monetizing some or all of their spectrum holdings. Attracting that interest likely hinges on two fundamental Commission decisions: (a) fashioning reverse auction rules that are "simple" in the sense of being fair, transparent, and readily understandable; and (b) setting opening prices high enough to operate as real incentives. The Spectrum Act allows the FCC only one chance to get the broadcast incentive right – which suggests that regulatory humility with respect to procedural rules and reasonable ambition with respect to opening prices may be the Commission's best strategies for this component of the rulemaking.

The *Notice*'s proposal for a "descending clock" approach to the reverse auction design – with initial prices set by the Commission[42] – has merit as long as opening prices attract many TV station bidders in locales where spectrum is most at a premium. This option, if executed well, should be the simplest mechanism for broadcasters because it would require less investment of time and resources on their part. The need to engage in station valuation assessments could be largely reduced, if not eliminated. Most TV licensees likely already have a fair notion of their station's worth as a going broadcast concern, which should simplify their task of determining whether the FCC's opening bid price is attractive enough to warrant exiting the business or accepting some reduction in capacity or signal coverage. The descending clock design also may

[42] *Notice*, 27 FCC Rcd at 12373 ¶ 39-40.

negate the need for broadcasters to engage the services of auction analysts or game-theory consultants – at least as long as the reverse auction procedures are transparent enough to engender broadcasters' trust in them.[43] These upfront cost issues may be quite important to the type of TV licensees that reportedly are interested in participating in the auction: those who own so-called "independent" stations not affiliated with a major broadcast network, religious stations, noncommercial educational stations, and Class A low-power stations.[44]

The Commission also should consider how to afford some additional options for broadcasters who wish to remain in the industry while also monetizing some part of their licensed spectrum's value. At a minimum, the FCC should adopt the proposal to implement the two options explicitly addressed in the Spectrum Act, channel sharing and voluntary moves from a UHF to VHF channel.[45] It also could be productive to offer TV licensees the opportunity to make bids in the alternative – *e.g.*, a broadcaster bids to share a channel at $X but to completely vacate its channel at $2X. In addition, the Commission should at least explore whether it is feasible to extend even more options for reducing their use of the airwaves. As the *Notice* suggests, compensating broadcasters for accepting additional interference or voluntarily agreeing to reduce either their protected service contours or population coverage may help to increase the amount of spectrum that can be repurposed.[46]

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[43] Although TIA takes no position on the metrics involved in setting the specific opening prices or determining lower prices in successive auction rounds, the Commission must ensure that broadcasters have access to this information on a timely basis.

[44] *See, e.g.*, Joe Flint, *FCC can auction spectrum, but will broadcasters sell?*, LOS ANGELES TIMES (Feb. 17, 2012), *available at* http://latimesblogs.latimes.com/entertainmentnewsbuzz/2012/02/broadcast-spectrum.html.

[45] Spectrum Act § 6403(a)(2); *Notice*, 27 FCC Rcd at 12385 ¶ 84.

[46] *Notice*, 27 FCC Rcd at 12386 ¶ 87.

But in evaluating options beyond those expressly recognized by the statute, the FCC should assess whether the rules needed to implement those additional choices can be kept relatively simple and transparent. An overly complex, multi-layered decision tree may be intimidating for some broadcasters, particularly those with limited resources to invest in educating themselves about the reverse auction process. The Commission must balance the value of pursuing all possible auction options against the possibility that a complicated auction may discourage some TV licensees from participating or, even if they do engage, from opting for less than a full exit from broadcasting.

The importance of attracting the participation of broadcasters in the largest markets cannot be overstated – fully clearing many stations from the TV band in top markets is essential to the success of the forward auction. Accordingly, the FCC's first goal for its reverse auction design should be to entice broadcasters to exit altogether. One means available for satisfying that goal is setting the initial price point for full relinquishment of a TV license that is notably higher than the alternatives (*e.g.*, accepting additional interference). As noted above, TIA takes no position on the specific prices to be offered to participating broadcasters.[47] Nevertheless, it would make little sense at a conceptual level to offer prices only slightly above the market valuation for the station as an ongoing broadcast enterprise. This does not necessarily mean that the initial prices should be at the per MHz-pop level that a wireless provider may have paid for comparable spectrum in past auctions.[48] The language of the Spectrum Act, however, does empower the Commission to "encourage" broadcaster participation,[49] which gives the agency

[47] *See supra* note 43.

[48] Among other things, the Commission plainly must cover other costs in the forward auction than broadcasters' winning bids in the reverse auction, including but not necessarily limited to the costs of broadcaster relocation in the repacking phase of this proceeding.

[49] Spectrum Act § 6402.

considerable flexibility in setting prices that would incentivize a large number of stations to seriously review their auction opportunities.[50] It may be useful to set opening bids for a descending clock auction at a level sufficient to prompt the boards of publicly traded broadcast licensees to fulfill fiduciary obligations by at least considering auction participation.

The Commission could augment these types of incentives by also adopting auction procedures that entitle winning broadcast bidders to receive their payments as quickly as possible.[51] Those licensees who wish to exit the business likely will wish to wind up their station operational affairs reasonably quickly. Expeditious payments to winning broadcast bidder also should help to expedite the partial clearance and repacking of the TV band.

IV. THE SUCCESS OF THE INCENTIVE AUCTION ULTIMATELY HINGES ON THE PARTICIPATION OF ALL POSSIBLE BIDDERS IN THE FORWARD AUCTION

Enticing broadcasters to enter the reverse auction is, of course, only the beginning. Meeting the Commission's goal of "encourag[ing] widespread participation in the reverse auction by broadcast television licenses"[52] is necessarily related to the revenues via the forward auction. Robust competition among bidders for the newly available frequencies is the only source of funding available to encourage TV licensees to exit the business, cover repacking and administrative costs, and contribute to the build-out of the nationwide public safety network. In contrast, an auction design that would limit bidder eligibility in the forward auction and/or reduce revenue may lead to an unsatisfactory outcome that fails the requirements of the

[50] The statute does not explicitly define the term "incentive," but the plain meaning of the word as a noun means "something that incites or tends to incite to action or greater effort, as a reward offered for increased productivity," *see* Dictionary.com entry *available at* http://dictionary.reference.com/browse/incentive, and as an adjective "inciting, as to action; stimulating; provocative." *Id.*

[51] *Notice*, 27 FCC Rcd at 12453 ¶ 287.

[52] *Id.* at 12453 ¶ 288.

Spectrum Act[53] – and, more fundamentally, fails American consumers as well. The Commission therefore should adopt the *Notice*'s proposal for an open eligibility standard for the forward auction.[54]

A successful forward auction also depends on rules that provide clarity and certainty, as the *Notice* correctly recognizes.[55] In particular, the Commission must take care to not deter potential participants at any stage of the forward auction as the agency seeks to fulfill the pro-competitive mandates of Section 309(j)(3)(B) of the Communications Act and Section 6404 of the Spectrum Act.[56] Implementing rules that inject post-auction uncertainty, such as a mandate that could require winning bidders to divest some spectrum, is likely to put downward pressure on the size of potential bids and could even retard participation. Both outcomes would threaten the success of the first-ever incentive auction – which in turn might cast a pall over the potential use of incentive auctions to repurpose spectrum in the future.

To help ensure a positive outcome, the Commission should introduce additional certainty for potential bidders in the forward auction. In particular, the FCC should provide for the earliest possible repacking and reclaiming of broadcast spectrum after the auction concludes. Wireless service providers are actively seeking sources of additional spectrum to deploy next generation

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[53] *See id*. at 12451 ¶ 275 ("The Spectrum Act requires that the forward auction must yield proceeds greater than the sum of the following: (1) the total amount of compensation that the Commission must pay successful bidders in the reverse auction under section 6403(a)(1); (2) the cost of administering the broadcast television spectrum incentive auction, an amount which the Commission is required to retain under section 6403(c)(2)(C) and 47 U.S.C. § 309(j)(8)(B); and (3) the estimated amount of the relocation cost reimbursements that the Commission is required to pay to broadcast television licensees and MVPDs under section 6403(b)(4)(A). In addition, section 6413 anticipates that proceeds from the forward auction will be available for distribution into the Public Safety Trust Fund.") (citations omitted).

[54] *Id.* at 12483 ¶ 381.

[55] *See, e.g., id.* at 12401 ¶ 123 ("[T]he band plan must provide as much information and certainty as possible, to enable interested wireless providers to make informed business decisions about whether, and how, to bid for and use 600 MHz spectrum"); *id.* at 12484 ¶ 384 ("[I]t is of particular importance to have certainty for bidders in this auction.").

[56] *Id.*; 47 U.S.C. § 309(j)(3)(B); Spectrum Act § 6404.

networks and handle consumer demand.[57] Establishing rules that make the repurposed spectrum available to the winning bidder reasonably quickly following the auction will help potential bidders to make well-informed business judgments about their auction participation.

The FCC also should adopt its proposal to largely base the forward auction technical rules on those used in auctioning the lower 700 MHz band.[58] TIA specifically supports the Commission's proposals regarding OOBE limits,[59] the power and field strength limits adjusted for 600 MHz operations[60] and other Part 27 general rules.[61] Potential bidders are familiar with these regulations, which will "permit[ ] more flexible use of [the] spectrum, while at the same time protect[ ] adjacent spectrum users from interference."[62] They have proven successful in promoting rapid deployment of services in other bands, and in the absence of any compelling reason to the contrary, they should be carried over to the 600 MHz mobile broadband band.

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[57] *See, e.g.*, Applications of Cellco Partnership d/b/a Verizon Wireless and SpectrumCo LLC and Cox TMI, LLC For Consent to Assign AWS-1 Licenses, *Memorandum Opinion and Order and Declaratory Ruling*, 27 FCC Rcd 10698 (2012); Applications of AT&T Mobility Spectrum LLC, New Cingular Wireless PCS, LLC, Comcast Corporation, Horizon Wi-Com, LLC, NextWave Wireless, Inc., and San Diego Gas & Electric, *Memorandum Opinion and Order*, FCC 12-156 (rel. Dec. 18, 2012); SoftBank and Sprint File Amendment to Their Previously Filed Applications to Reflect Sprint's Proposed Acquisition of De Facto Control of Clearwire, DA 12-2090 (rel. Dec. 27, 2012); Deutsche Telekom AG, T-Mobile USA, Inc. and MetroPCS Communications, Inc. Seek FCC Consent to the Transfer of Control of PCS Licenses and AWS-1 Licenses and Leases, One 700 License, and International 214 Authorizations held by MetroPCS Communications, Inc. and by T-Mobile USA, Inc. to Deutsche Telekom AG, *Public Notice*, 27 FCC Rcd 13407 (2012).

[58] *See Notice*, 27 FCC Rcd at 12423-24 ¶ 185.

[59] *See id.* at 12424-25 ¶¶ 186-191.

[60] *See id.* at 12425-26 ¶¶ 192-194.

[61] *See id.* at 12426-27 ¶¶ 195-198.

[62] *Id.* at 12424 ¶ 185.

V. CONCLUSION

The baseline policy choices that the Commission must make here – including decisions concerning efficient repacking, structure of the 600 MHz band, incentives to be offered to interested TV broadcasters in the reverse auction, and open eligibility standards for bidders in the forward auction – will determine the degree to which the world's first-ever incentive auction succeeds. TIA urges the Commission to adopt rules and policies that encourage the largest possible number of participants on both sides of the auction, and looks forward to assisting the agency in the coming weeks and months with the implementation of the Spectrum Act.

Respectfully submitted,

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