In the Matter of

Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions

GN Docket No. 12-268

COMMENTS

OF THE

COMPUTER & COMMUNICATIONS INDUSTRY ASSOCIATION

(CCIA)

Edward J. Black
Catherine R. Sloan
CCIA
900 17th Street, N.W., Suite 1100
Washington, D.C. 20006
Tel. (202) 783-0070
Facsimile (202) 783-0534
Email: EBlack@ccianet.org
CSloan@ccianet.org

Stephanie A. Joyce
Jonathan E. Canis
Arent Fox LLP
1717 K Street, N.W.
Washington, D.C. 20036
Tel. (202) 857-6000
Facsimile (202) 857-6395
Email: Stephanie.Joyce@arentfox.com
Jonathan.Canis@arentfox.com

Counsel to CCIA

Dated: January 25, 2013
EXECUTIVE SUMMARY

The Commission should adopt its proposal to establish guard bands within the band plan for re-acquired 600 MHz spectrum, and to permit unlicensed use of those guard bands. Congress expressly authorized the Commission to take these actions. The proven value of unlicensed spectrum, particularly for Wi-Fi and Bluetooth applications, provides the Commission ample evidence to support a decision not to send the entire block of TV spectrum to auction.

In addition, permitting the proposed guard bands for unlicensed use should, as the Commission proposes, be made on both a nationwide and a non-interference basis. Here, the Commission’s rules for TV white spaces provide a useful construct. White space devices are authorized on an unlicensed basis nationwide, and the Commission developed technical rules for minimizing interference that seem easily adopted for the 600 MHz band. In addition, the treatment of devices in the white spaces rules – unlicensed use on a non-interference basis – should serve as the model for allowing use of the proposed 6+ MHz guard bands in re-acquired 600 MHz spectrum.

The Commission’s proposed band plan for the re-acquired spectrum, in both its licensed and unlicensed portions, obviates the need to disturb entities that employ Channel 37 (608-614 MHz) for radio astronomy and medical telemetry. Given the estimated value of the 5 MHz blocks that the Commission proposes to auction, the Commission is likely to re-acquire a great deal of 600 MHz spectrum within the reverse incentive auction, such that relocating these existing users would be an unnecessary burden for all concerned.
TABLE OF CONTENTS

EXECUTIVE SUMMARY ................................................................................................................................. i

BACKGROUND: CCIA.................................................................................................................................. 1

I. THE COMMISSION SHOULD ADOPT ITS PROPOSAL TO PERMIT UNLICENSED USE OF THE PROPOSED GUARD BANDS .......................................................... 2
   A. The Spectrum Act Gives the Commission Broad Authority in Assigning Wireless Spectrum ............................................................................................................. 2
   B. The Commission’s Proposal to Designate Guard Bands for Unlicensed Use Has Sound Support ....................................................................................... 5

II. EXISTING TECHNOLOGIES USING TV BROADCAST SPECTRUM SHOULD REMAIN IN THEIR PRESENT STATUS .......................................................... 11
   A. The Commission Should Allow the Continued Operation of White Space Devices in Unused Broadcast Channels ............................................................. 11
   B. The Commission Should Protect Licensed Class A Facilities and Need Not Disturb Licensees in Channel 37 Spectrum at This Time ........................................ 12

III. THE COMMISSION SHOULD PERMIT UNLICENSED USE OF RE-ACQUIRED SPECTRUM UNTIL THE NEW LICENSEES HAVE MET APPLICABLE CONSTRUCTION BENCHMARKS .................................................................................. 13

CONCLUSION.................................................................................................................................................. 14
The Computer & Communications Industry Association (“CCIA”), through counsel and pursuant to the Commission’s Order, submits these Comments in response to the Notice of Proposed Rulemaking released in this docket on October 2, 2012 (“NPRM”). CCIA focuses these Comments on supporting the Commission’s proposal that the band plan for re-acquired 600 MHz spectrum should include 6+ MHz guard bands for unlicensed use on a non-interfering basis. This proposal is well within the Commission’s authority under the Spectrum Act and is a necessary step for fostering innovative services that continue to drive the engine of our recovering economy.

For the same reason, CCIA supports the Commission’s proposal that white space devices may continue to be used on spectrum that is not repurposed in accordance with the existing rules. In fact, CCIA proposes that the Commission’s rules governing white spaces should be the model for addressing any interference issues that may arise in the forthcoming guard bands.

**BACKGROUND: CCIA**

CCIA is a nonprofit membership organization of a wide range of companies in the computer, Internet, information technology, and telecommunications industries. Created over three decades ago, CCIA promotes open markets, open systems, open networks, and full, fair, and open competition.

CCIA’s member companies vary widely in size and operate both domestically and globally. Members include computer and communications companies, Internet platforms, equipment manufacturers, software developers, service providers, resellers, integrators, and

---

financial service companies. Together CCIA’s members employ almost one million workers and generate nearly $250 billion in annual revenue.

CCIA is an advocate in many areas of policy and legislation, domestically and internationally, and is at the leading edge of policy making. CCIA has developed, defined, and advocated policy on a wide range of issues from telecommunications to intellectual property, from privacy protection to broadband access, from competition policy to government procurement, and from trade and export controls to e-commerce.

I. THE COMMISSION SHOULD ADOPT ITS PROPOSAL TO PERMIT UNLICENSED USE OF THE PROPOSED GUARD BANDS

The Commission proposes a band plan for re-acquired 600 MHz that includes “guard bands in which there are no high powered operations.” More specifically, it proposes twin guards bands of 6 MHz each, and to add to them any “remainder spectrum”, up to 4 MHz, “in any given market.” This guard band spectrum would be allocated for unlicensed use, “ideally on a nationwide basis.” CCIA strongly supports these proposals.

A. The Spectrum Act Gives the Commission Broad Authority in Assigning Wireless Spectrum

The Spectrum Act authorizes the Commission, for the first time, to re-acquire spectrum in the 600 MHz band from television broadcasters and auction that spectrum for commercial use. Section 6407 of the Spectrum Act states that nothing in it “shall be construed to prevent the Commission from using relinquished or other spectrum to implement band plans

---

4 NPRM ¶ 152.
5 Id. ¶ 234. “Remainder spectrum” is capped at 4 MHz, because “TV broadcast stations operate on 6 megahertz wide channels and the downlink and uplink 600 MHz bands will each be organized into 5 megahertz blocks.” Id.
6 NPRM ¶ 227; see also id. ¶¶ 230-32.
7 See generally Spectrum Act §§ 6401-6405.
with guard bands.\textsuperscript{8} That preservation of authority is bounded only as to size: Section 6407 also states that the guard bands “shall be no larger than is technically reasonable to prevent harmful interference between licensed services outside the guard band.”\textsuperscript{9}

CCIA is not aware that the phrase “technically reasonable” appears in any other legislation governing the public networks or radio spectrum.\textsuperscript{10} On its face, however, the phrase invokes the Commission’s expert discretion by requiring action that is “reasonable”, the pursuit of which routinely is granted considerable deference. It bears emphasis that Congress did not choose the phrase “technically necessary” in Section 6407, but rather it established a standard that calls on the Commission’s expert discretion.\textsuperscript{11}

Of course, as a general matter, the Commission retains broad discretion when adopting plans and rules for radio spectrum.\textsuperscript{12} The FCC “is empowered by the Communications Act to foster innovative methods of exploiting the radio spectrum,” and as such “functions as a policymaker and, inevitably, a seer – roles in which it will be accorded the greatest deference by a reviewing court.”\textsuperscript{13} Stated differently, courts will “presume the validity of the Commission’s

\textsuperscript{8} Spectrum Act § 6407(a).

\textsuperscript{9} Id. § 6407(b).

\textsuperscript{10} Compare 47 U.S.C. § 331(a) (FCC must allocate at least one VHF station per state “if technically feasible”).

\textsuperscript{11} Canons of construction are no more than rules of thumb that help courts determine the meaning of legislation, and in interpreting a statute a court should always turn first to one, cardinal canon before all others. We have stated time and again that courts must presume that a legislature says in a statute what it means and means in a statute what it says there.


\textsuperscript{12} E.g., \textit{M2Z Networks, Inc. v. FCC}, 558 F.3d 554, 563-564 (D.C. Cir. 2009).

\textsuperscript{13} \textit{Telocator Network of America v. FCC}, 691 F.2d 525, 538 (D.C. Cir. 1982).
action and will not intervene unless the Commission failed to consider relevant factors or made a
manifest error in judgment.”14

This presumption attaches particularly where the Commission must make a
“predictive judgment” about the impact its decisions may have on the development of the
communications marketplace.15 Such “predictive judgment” is necessary where, as here, the
Commission must “predict the effect and growth rate of technological newcomers on the
spectrum.”16 Spectrum policy notoriously involves “striking a balance”, both between competing
interests and between the old and the new.17

For example, although Section 309(j) of the Communications Act requires a
competitive auction where “mutually exclusive applications” are submitted for the same
spectrum,18 that provision also permits the Commission to resolve mutually exclusive
applications by other means, such as the application of “engineering solutions, negotiation,
threshold qualifications, [and] service qualifications.”19 If it is considered with the preservation
of the public interest in mind, that Commission’s decision will be affirmed so long as it “was
reasonable.”20

Several other spectrum-related matters are secured to the Commission’s
discretion and carry a high degree of deference, such as allocating additional spectrum for

14 Mobile Relay Associates v. FCC, 457 F.2d 1, 8 (D.C. Cir. 2006) (quoting Consumer Elecs.
Ass’n v. FCC, 347 F.3d 291, 300 (D.C. Cir. 2003)).
16 Teledesic LLC v. FCC, 275 F.3d 75, 84 (D.C. Cir. 2001).
17 Id.
19 Id. § 309(j)(6)(E).
20 M2Z Networks, 558 F.3d at 561-563.
wireless service,\textsuperscript{21} rebanding spectrum,\textsuperscript{22} expanding the service rules for mobile satellite service,\textsuperscript{23} relocating existing services to new spectrum,\textsuperscript{24} and determining whether dominant wireline firms should be permitted to compete for or receive wireless licenses.\textsuperscript{25}

For these reasons, the FCC can adopt its proposed guard bands simply by “articulat[ing] a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’”\textsuperscript{26} The Commission will have undeniable evidence of the economic power and social value of robust unlicensed spectrum in making that explanation.

\textbf{B. The Commission’s Proposal to Designate Guard Bands for Unlicensed Use Has Sound Support}

The Commission’s inclusion of guard bands in the 600 MHz band plan would fall well within its Spectrum Act authority, as would designating those guard bands for unlicensed use.\textsuperscript{27} As stated above, Section 6407 expressly permits the Commission to allocate guard bands in this spectrum to protect licensed services from harmful interference. It also expressly permits the Commission to “permit the use of such guard bands for unlicensed use.”\textsuperscript{28} Bound only by the

\begin{itemize}
  \item \textsuperscript{21} \textit{Telocator}, 691 F.2d at 537-39.
  \item \textsuperscript{22} \textit{Mobile Relay Associates}, 457 F.2d at 8-10.
  \item \textsuperscript{23} \textit{AMSC Subsidiary Corp. v. FCC}, 216 F.3d 1154, 1161 (D.C. Cir. 2000) (affirming FCC decision to permit additional earth terminals to accept MSS from a foreign-licensed satellite).
  \item \textsuperscript{24} \textit{Teledesic}, 275 F.3d at 84 (affirming FCC order for relocating terrestrial operators out of the 17.7-19.7 GHz band).
  \item \textsuperscript{25} \textit{Melcher}, 134 F.3d at 1151-52 (affirming three-year prohibition on LMDS licenses for ILECs).
  \item \textsuperscript{26} \textit{Teledesic}, 275 F.3d at 84 (quoting \textit{Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.}, 463 U.S. 29, 43 (1983)).
  \item \textsuperscript{27} NPRM ¶¶ 152, 234.
  \item \textsuperscript{28} Spectrum Act § 6407(c).
\end{itemize}
mandate to make “reasonable” decisions, the Commission is required only to give “reasoned consideration” to relevant factors, and “to identify the considerations it found persuasive.”

As the Commission explains, guard bands are necessary in any spectrum to serve as a buffer between adjacent services unless the services can be harmonized. Here the Commission has drawn its proposed band plan such that only two guard bands – at most – are needed. It has harmonized the upper 600 MHz block and lower 700 MHz block by designating them both for terrestrial uplink services, and thus no guard band is needed. In addition, there is no guard band needed between Channel 37 (608-614 MHz) and the lower 600 MHz block, which it designates for downlink services, because the in-band and out-of-band emissions in the lower 600 MHz spectrum are very unlikely to interfere with any radio astronomy or medical telemetry services that may be operating in Channel 37. This configuration has enabled the FCC to limit the number of guard bands to one or two, located at the lower edges of the 600 MHz uplink and downlink service spectrum where the services in the adjacent television channels operate at a much higher power and may cause harmful interference with the new 600 MHz devices. The Commission plainly has taken and will take great caution in ensuring that

---

29 Spectrum Act § 6407(a) (“guard bands shall be no larger than is technically reasonable”).
30 Teledesic, 275 F.3d at 84.
31 Melcher, 134 F.3d at 1152 (quoting National Ass’n of Reg’y Util. Comm’rs v. FCC, 737 F.2d 1095, 1140 (D.C. Cir. 1984)).
32 NPRM ¶¶ 154, 156-58.
33 “Because both bands are designed for terrestrial uplink systems, the new 600 MHz block and the lower 700 A blocks are harmonized. … Therefore, we are not proposing a guard band between the 600 MHz uplink spectrum and the lower 700 MHz spectrum.” Id. ¶ 155.
34 Id. ¶ 154.
35 Id. ¶¶ 156, 158.
guard bands will not be designated superfluously.

The Commission’s technical analysis in the NPRM more than satisfies Congress’s instruction that any designated guard bands must be “technically reasonable”. And its well articulated explanation for the proposed band plan certainly provides the “reasoned consideration” that courts expect when reviewing the FCC’s spectrum policies and rules.

In addition, evidence demonstrates that the U.S. economy needs the substantial, uniform, and nationwide allocation of spectrum for unlicensed use. One need only look to our experience with Wi-Fi to prove out this conclusion. As of 2009, Wi-Fi technologies provided $12.6 billion in value annually, and were projected to provide $240 to $555 billion in value by 2024. The Commission recognized the value of Wi-Fi, and of unlicensed spectrum generally, in the National Broadband Plan, Recommendation 5.11: “The FCC within the next 10 years, should free up a new, contiguous nationwide band for unlicensed use.”

Though it acknowledged that unlicensed use of spectrum “comes with a trade-off” in terms of operating “on a sufferance basis” with regard to interference, the Commission emphasized that “developers have found ways to provide for a wide variety of devices … that serve consumers,” including

---

36 NPRM ¶ 155; see also id. ¶¶ 199-214 (addressed in Section II.B infra).
37 Spectrum Act, § 6407(b).
38 Teledesic, 275 F.3d at 84; see also M2Z Networks, 558 F.3d at 561-563; Mobile Relay Associates, 457 F.2d at 8.
40 This commitment to unlicensed spectrum stands separate and apart from the Commission’s pledge to adopt the white spaces rules. National Broadband Plan, Recommendation 5.12.
“Bluetooth headsets” and “the increasingly important deployment of Wi-Fi access points.”\textsuperscript{41} Wi-Fi certainly is not the only valuable public application in unlicensed spectrum, but undeniably it has been the most prolific one.

In addition, the Commission’s new white spaces rules have enabled significant progress in the use of broadcast spectrum, and not only in the commercial setting. As Rep. Anna Eshoo, D-Cal., and Rep. Darrell Issa, R-Cal., summarized for the Chairman in their December 11, 2012, letter, a coalition of more than 500 institutions of higher education, collectively called the Advanced Internet Regions University (“AIR.U”), announced that they will use white spaces to bolster broadband access on campuses that now have limited service. White spaces also has spurred broadband in rural areas, the congressmen wrote, with Nottoway County, Virginia, the first FCC-certified white spaces deployment, using that unlicensed spectrum to provide broadband connectivity to more than 1,500 small businesses.

Unlicensed spectrum is the nation’s most important public wireless communications “laboratory”. If the wireless industry has taught us anything in the last 15 years, it is that we never know what life-changing services and applications are coming next. Maintaining an environment of low barriers to entry and scalable experimentation is vitally important, as the Chairman and our Commissioners know. In his remarks to the House Telecom Subcommittee in December 2012, Commissioner McDowell cautioned against inhibiting the “technological improvements that will undoubtedly develop while the [Incentive Auctions] proceeding is underway[.].”\textsuperscript{42} And the Chairman, in reiterating the Commission’s commitment to

\textsuperscript{41} National Broadband Plan, Recommendation 5.11.

allocating re-acquired 600 MHz spectrum for unlicensed use, stated that, “Unlicensed spectrum has a powerful record of driving innovation, investment, and economic growth – hundreds of billions of dollars of value creation for our economy and consumers.”

Thus, the business case for allocating the proposed guard bands for unlicensed use is clear and unmistakable.

Finally, CCIA supports the Commission’s proposal to permit use of the guard bands on a nationwide basis. The Commission expanded unlicensed spectrum for certain technologies to a nationwide allocation within the TV White Spaces proceeding, and the same treatment should be employed in the proposed 600 MHz guard bands. The proven value of unlicensed spectrum as both an incubator for innovation and a driver of economic growth counsels against relegating these services only to areas that prospective licensees would eschew in an auction. Uniform, nationwide allocation is the proper way to support nascent technologies, like Wi-Fi once was, and to give innovators the best chance to make a meaningful addition to consumers’ choice of applications and technology. A nationwide guard band also will ensure that innovative services come not only to low-density, low-congestion U.S. markets, but to all areas and all cities, large and small, creating a coast-to-coast wireless innovation “laboratory” for the benefit of all U.S. consumers.

---


44 NPRM ¶ 227.

With regard to appropriate technical rules for unlicensed use of the guard bands, the Commission’s existing white spaces rules can act as a regulatory model.\(^\text{46}\) Rules governing Out-of-Band Emissions, power spectral density limits, and the like for white spaces devices seem perfectly suited for the guard bands given the similarity of spectrum to be used.

CCIA is aware that the Chairman recently has made a commitment to allocate up to 195 MHz of spectrum in the 5 GHz band for unlicensed Wi-Fi.\(^\text{47}\) In supporting the adoption of unlicensed guard bands for re-acquired 600 MHz spectrum, CCIA neither rejects nor discounts the Chairman’s commitment. It remains the case, however, that the 5 GHz band presently is used by both federal and private entities, and even the Commission recognizes that “the effort will require significant collaboration with other federal agencies.”\(^\text{48}\) Thus, CCIA views the proposed 600 MHz guard bands as a more immediate and certain step. But diversity of spectrum allocation must remain a key tenet of the Commission’s policy. At this point in the nation’s development of a wireless marketplace, it is simply a truism that different applications require different types of spectrum.

As CCIA previously reminded the Commission, “all spectrum is not created equal.”\(^\text{49}\) The Commission itself acknowledged, in the Spectrum Holdings proceeding, the very


\(^{48}\) *Id.*

different characteristics as between spectrum below and above 1 GHz. Lower frequency spectrum “allow[s] for better coverage across larger geographic areas and inside buildings,” thus filling a substantial need in the market for wireless connectivity indoors, outdoors, and next door. For this reason, spectrum below 1 GHz is and likely will remain more attractive for robust wireless broadband access. It should not be entrusted to just a few dominant carriers, and it should not be reserved only for licensed use via competitive auctions where the few carriers with deep pockets are likely to dominate.

II. EXISTING TECHNOLOGIES USING TV BROADCAST SPECTRUM SHOULD REMAIN IN THEIR PRESENT STATUS

Much of the NPRM raises questions as to how the Commission should treat technologies now operating within the 600 MHz band, on both licensed and unlicensed bases, within the new proposed band plan. CCIA suggests that the Commission stay the present course in each case, and borrow from its findings and rules that it reached in the closely similarly TV white spaces context.

A. The Commission Should Allow the Continued Operation of White Space Devices in Unused Broadcast Channels

The Commission proposes that it continue to permit white space devices to operate in channels that are repurposed but remain unused, and CCIA supports that proposal as well. Given the effort that was required to adopt rules for white spaces, entities that presently have deployed devices in unused channels should be permitted to continue operations until a post-auction licensee notifies the Commission that it is coming online.

51 Id.
52 NPRM ¶ 233.
In this arrangement, those employing unlicensed white space spectrum would bear the onus of monitoring the license database for notices that a licensee of repurposed 600 MHz spectrum intends to commence service.

**B. The Commission Should Protect Licensed Class A Facilities and Need Not Disturb Licensees in Channel 37 Spectrum at This Time**

The Commission asks in the NPRM how it should treat Class A television stations and licensees in what was Channel 37 (608-614 MHz) during the spectrum re-packing and rebanding process. Specifically, with regard to Class A stations, the Commission proposes to protect Class A facilities that held construction permits as of February 22, 2012, and those that have not yet converted to digital TV, during post-auction station repacking. CCIA supports this proposal, both because it comports with the mandate to preserve existing broadcast coverage areas as well as preserving regulatory finality to entities that previously have relied on the Commission’s permission. As the Commission recognizes, these broadcast licensees have reasonably relied on the Commission’s September 2015 transition deadline. The import of the coming re-allocation of TV spectrum notwithstanding, there is no need to decide now, ab initio, that these licensees and permit holders will go unprotected.

With regard to existing services in the Channel 37 band (608-614 MHz), which include radio astronomy and medical telemetry, CCIA does not believe that the Commission

---

54 The Spectrum Act was enacted February 22, 2012, and requires 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 of each broadcast television licensee[.]” Spectrum Act § 6403(b)(2).
55 As the Commission notes, the deadline for Class A digital transition is not until September 1, 2015. NPRM ¶ 115.
56 Id. ¶¶ 114-115.
should begin relocating those services out of the 600 MHz band at this time. The relocation process is arduous and disruptive, and would be particularly out of step with the Commission’s recent commitment to aiding the provision of healthcare through use of broadband services. This step should not be considered until the reverse auction reveals how much of the 600 MHz band is available. CCIA believes that the amounts bid for re-acquired 600 MHz spectrum in the forward auction will more than compensate the broadcast licensees such that a great deal of spectrum will become available for re-allocation. For this reason, CCIA believes Channel 37 need not be disturbed unless future developments demonstrate a pressing need.

III. THE COMMISSION SHOULD PERMIT UNLICENSED USE OF RE-ACQUIRED SPECTRUM UNTIL THE NEW LICENSEES HAVE MET APPLICABLE CONSTRUCTION BENCHMARKS

The NPRM seeks comment on appropriate build-out and performance rules for licensees in the 600 MHz band. Consistent with its goal of maximizing the efficient use of spectrum, the Commission should consider adding re-acquired 600 MHz to the pool available for TV white spaces devices until the new licensees have built out facilities that are sufficient for satisfying the Commission’s forthcoming construction benchmarks. Due to the considerable time that the spectrum re-packing and forward auction will take, it could be years before the auction winners complete their network build-out, obtain the necessary equipment licenses, and commence service. Rather than allowing the re-acquired

57 See NPRM ¶ 199.
59 NPRM ¶¶ 394-407.
60 Id. ¶¶ 396-97.
spectrum lay fallow and unused, the Commission should temporarily permit unlicensed use of the spectrum until the new services have been licensed, and have met at least one construction benchmark. This temporary use can be coordinated through a geolocation database. Reliance on such a database would ensure that all primary operations are adequately protected and that the frequencies are removed from unlicensed service once the auction winners have demonstrated that they soon can commence operations.

CONCLUSION

For all these reasons, the Commission should adopt its proposal to establish one or two guard bands in the band plan for re-acquired 600 MHz spectrum, and allocate them for unlicensed use on a nationwide basis.

Dated: January 25, 2013

Respectfully submitted,

By: s/ Stephanie A. Joyce
   Stephanie A. Joyce
   Jonathan E. Canis
   Arent Fox LLP
   1717 K Street, N.W.
   Washington, D.C. 20036
   Tel. (202) 857-6000
   Facsimile (202) 857-6395
   Email: Stephanie.Joyce@arentfox.com
   Jonathan.Canis@arentfox.com

Counsel to CCIA

Edward J. Black
Catherine R. Sloan
CCIA
900 17th Street, N.W., Suite 1100
Washington, D.C. 20006
Tel. (202) 783-0070
Facsimile (202) 783-0534
Email: EBlack@ccianet.org
CSloan@ccianet.org