

Office of Engineering and Technology's website, PEAs can be larger than entire states.⁶² Large bodies of water or mountains can separate portions of a single PEA. In many cases cities well over 100 miles apart are located in the same PEA. . For example:

- Bangor, ME and Caribou, ME are over 145 miles apart – and in the same PEA.
- Hartford, CT and Manhattan, NY are nearly 100 miles apart – and in the same PEA.
- Monterey, CA is 84 miles south of San Francisco and Petaluma, CA is 33 miles north of San Francisco – and yet all are in the same PEA.

The requirement to prohibit WSDs throughout a PEA simply because a licensee has commenced service in a portion of it [i.e. "anywhere"] would unnecessarily restrict opportunistic access to unused spectrum in instances where there is clearly no chance of harmful interference *even if* the TV Bands Database malfunctioned. Indeed, allowing WSDs to continue using the repurposed 600 MHz spectrum post-auction – based on a rationale of spectrum efficiency and the ability of the TV Bands Database to protect licensees from interference – but then making the protection zone the size of a PEA is at best arbitrary overkill. It also creates a moral hazard, since licensed carriers will have a strong incentive to throw up a base station or two, whether in the most profitable downtown area or at the edge of the PEA, and by doing so pull the plug on Wireless Internet Service Providers (WISPs) and any other opportunistic public access to the vacant spectrum.

OTI and PK strongly believe that the proposal in the *NPRM* strikes the right balance between simplicity for the parties and not denying access to unlicensed devices located far beyond the licensee's actual service area. There may be no standardized licensing area that comes close to replicating what the TV Bands Database can do given very straightforward data points that are readily available to licensed carriers that, before they deploy, have carefully planned out the coverage areas and link budgets of each and every base station and cell site. In

⁶² "FCC Areas," Office of Engineering and Technology, available at <http://transition.fcc.gov/oet/info/maps/areas/>.

certain states even Cellular Market Areas can extend hundreds of miles beyond a single urban area where a carrier may initially provide service. Any standard geographic unit would be arbitrary, since it would not take into account the location of the carrier's base station within the area – and therefore is inferior to the protection zone that carrier itself can determine under the Commission's well-balanced proposal.

Large portions of 600 MHz band spectrum will remain unused in large portions of the country for many years following the incentive auctions – and, if the experience is similar to past auctions, many rural and small town areas may not be built out even at the end of the initial 10-year license term. The policy proposed by the Commission is especially critical in rural and small market areas more likely to be underserved – since they are typically the last to be built out. There is no reason to wait many years and even possibly until after a drawn-out Part 27 re-licensing process to permit non-interfering use of fallow spectrum.

The Commission's proposal and rationale here is also consistent with the rules adopted to encourage more efficient spectrum use in the 2.5 GHz band. Under Section 27.55(a)(4) of the Commission's rules, licensees in the 2.5 GHz band may exceed the signal strength at the border of their licensed areas without consent where the neighboring licensee is not providing service. When the neighboring licensee commences service, the user is required to comply with the applicable power and emissions limits at the boundary and can exceed these limits if the licensee consents. In adopting the approach, the Commission recognized "the importance of ensuring the ubiquitous availability of broadband services."⁶³ The same rationale applies here, although with

⁶³ 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, WT Docket No. 03-66, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 14165, ¶¶ 109 (2004).

even less potential risk for any licensee since the TV Bands Database provides automatic exclusion of the unlicensed devices at any time that the licensee chooses to commence service.

B. Spectrum Licenses Do Not Confer 'Exclusive' Rights on Any User and the Commission Has the Authority at Any Time to Condition Licenses with Obligations to Facilitate Full and Efficient Use

CTIA argues that the use-it-or-share-it requirement proposed by the Commission "is wholly inconsistent with the 'exclusive license' provided to bidders in the incentive auction and impermissibly elevates the rights of unlicensed services."⁶⁴ Qualcomm likewise argues that "licensees will have purchased exclusive spectrum rights via an auction to use all of the spectrum within service area [and] without having to share those rights with unlicensed users."⁶⁵

Carriers and their suppliers never seem to tire in their effort to relitigate this well-settled issue. The Powell Commission confronted this question squarely in its order approving ultra-wideband (UWB) operations as an underlay on PCS and other licensed bands. The Commission's 2002 UWB Report & Order made it clear that incumbent licensees do not have the right to exclude other authorized users from emitting energy into their assigned bands, provided that there is an acceptably minimal risk of harmful interference.⁶⁶ In that proceeding, Sprint similarly "objected to the basic concept of UWB operation, stating that the Commission does not have a legal right to convert Sprint's licenses into non-exclusive licenses and to require Sprint PCS to share its spectrum with others, much less share it for free."⁶⁷ Sprint's argument was

⁶⁴ Comments of CTIA at 39.

⁶⁵ Comments of Qualcomm at 19-20.

⁶⁶ In Re Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, First Report and Order, 17 F.C.C. R. 10505 (2002) ("UWB First R&O"). See also In Re Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 18 F.C.C.R. 3857 (2003) (responding to several petitions for reconsideration and largely leaving the First Report and Order's decisions and reasoning in place).

⁶⁷ *Id.* ¶ 271. For an excellent summary of this issue in relation to the Commission's effort to balance auctioned but non-exclusive licensing rights with a desire to permit efficiency-enhancing, low-power

that it had "spent over \$3 billion for exclusive" spectrum rights, and that "Commission authorization of new users constitutes breach of contract and an unlawful modification of licenses for which the Government would be liable for damages."⁶⁸ The Commission firmly rejected Sprint's argument for "exclusive" use, stating:

[S]pectrum is not, and has never been, exclusive to Sprint or to any other licensee or user. While Sprint PCS has been provided some exclusivity in operating licensed PCS systems within specified geographic areas, Part 15 transmitters [such as personal computers and electric drills] currently are permitted to operate within the PCS and cellular frequency bands . . . [and] there are countless other devices that emit radio emissions within these bands.⁶⁹

The Commission concluded that "[o]ur analysis of the record . . . indicates that UWB devices can be permitted to operate without causing harmful interference if appropriate technical standards and operational restrictions are applied to their use."⁷⁰ Similarly, in this proceeding the Commission has correctly determined it is that the TV Bands Database system can ensure that once a licensee reports it will commence service, all WSDs will be denied permission to transmit within a distance that could conceivably cause harmful interference.

Of course, the Commission's authority to impose conditions on licensees in the public interest has deeper roots than the Communications Act truism that licenses confer no exhaustive or permanent rights. The Supreme Court and recent precedents have affirmed that Title III delegates "expansive powers" to the Commission, including a "comprehensive mandate to 'encourage the larger and more effective use of radio in the public interest.'"⁷¹ Section 303(b) of

UWB underlays, see Paul Margie, *Can You Hear Me Now? Getting Better Reception from the FCC's Spectrum Policy*, 2003 Stan. Tech. L. Rev. 5.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.* ¶ 18.

⁷¹ *CNBC v. United States*, 319 U.S. 190, 219 (1943) (quoting 47 U.S.C. § 303(g)); see also *Cellco Partnership*, 700 F.3d 534, 542 (D.C. Cir. 2012) (upholding the Commission's authority to require licensees to offer data roaming agreements on commercially reasonable terms and conditions).

the Act specifically gives the Commission wide-ranging authority to “[p]rescribe the nature of the service to be rendered” by a licensee.”⁷²

Reinforcing this authority, section 303(r) empowers the Commission to “[m]ake such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this chapter.”⁷³ And although the Commission’s authority to condition a license may be most clear where, as here, it is defining obligations on a newly-allocated band for the first time and prior to an auction, even after licenses are granted Section 316 of the Act authorizes “new conditions on existing licensees” “if in the judgment of the Commission such action will promote the public interest, convenience, and necessity.”⁷⁴ The outcome of the UWB proceeding was likewise premised on this basic principle.

CTIA and Qualcomm, perhaps recognizing the Commission clearly has the general authority to permit non-harmful sharing of any licensed band, argues that the proposal is unlawful in this instance because the 2012 Spectrum Act only permits unlicensed use of the 600 MHz duplex gap and guard bands.⁷⁵ But although there is no language in the Spectrum Act that explicitly permits the Commission to allow continued and productive use of fallow spectrum post-auction⁷⁶ – neither is there any language that suggests the contrary. There is, however, language expressly stating that the Spectrum Act in no way diminishes the FCC’s pre-existing authority. The Spectrum Act confirms that nothing in Section 6404 “affects any authority the Commission has *to adopt and enforce rules of general applicability*”⁷⁷

⁷² 47 U.S.C. § 303(b). *See also Cellco Partnership v. FCC*, 700 F.3d at 542.

⁷³ 47 U.S.C. § 303(r). *See also Cellco Partnership v. FCC*, 700 F.3d at 542.

⁷⁴ 47 U.S.C. § 316.

⁷⁵ Comments of Qualcomm at 19.

⁷⁶ Comments of CTIA at 39 (“There is no language in the Spectrum Act that envisions or compels access to licensed 600 MHz spectrum by unlicensed white space devices.”).

⁷⁷ Spectrum Act § 6404.

The Congressional purpose underlying the Spectrum Act focused on authorizing an incentive auction that would shift low-band spectrum into the hands of mobile providers for licensed use – and nothing in the Commission’s proposal impedes unfettered licensed use of the 600 MHz band post-auction. A worst case is that potential licensees can factor in the modest reporting costs when they bid for 600 MHz licenses or purchase it on secondary markets. Although CTIA’s members would understandably rather not have any “burdensome” reporting requirements that serves to facilitate enhanced Wi-Fi and other low-cost connectivity that potentially competes with mobile carrier offerings, whether the “burden” of such a licensing condition is justified by the public interest benefit is squarely within the Commission discretion.

C. The Commission’s Proposed Reporting Obligations are Minimally Burdensome and Justified to Promote Spectrum Efficiency, Public Access and Innovation

CTIA writes that being “required to provide detailed information to TV bands database administrators... imposes impermissible burdens on 600 MHz licensees...”⁷⁸ They go on to state that “[b]ecause commercial wireless licensees are constantly modifying their base stations – including the frequencies used – to meet consumer demands, a wireless licensee would need to constantly update the TV bands databases to ensure that unlicensed devices would not harmfully interfere with their operations.”⁷⁹ Qualcomm complains that a requirement to update the TV Bands Databases is “particularly burdensome as mobile carriers are always modifying, densifying, extending, and upgrading their networks to meet consumer needs.”⁸⁰

⁷⁸ Comments of CTIA at 36-37; see also Comments of TIA at 16-17.

⁷⁹ Comments of CTIA at 38

⁸⁰ Comments of Qualcomm at 20. *See also* CTIA Comments at 38. TIA blithely opines that “CMRS licensees usually have the privilege (and often, the obligation) to provide service throughout their license area.” TIA Comments at 16. Even a cursory review of the Commission’s service-specific “substantial service” standards shows this statement to be a total fallacy. Licensees are generally required to meet population-based benchmarks that are most easily satisfied by building out in densely populated areas, creating a disincentive to serve rural areas.

In reality, the “burden” on licensees (to notify a TV Bands Database administrator) would be *de minimus* and not involve collecting any data the operator does not already have readily at hand for their own purposes. The reporting “burden” on licensed carriers is also minimal considering that they obviously have the required information readily at hand as part of their process of preparing link budgets, siting and deploying base stations, and determining when they can commence commercial service. And clearly the carriers know their own buildout and commercial rollout some period in advance.

Spectrum Bridge, a certified TV Bands Database administrator, explains that “a 600 MHz Licensee can use readily available GIS tools to generate a polygon, which would then be uploaded to the database as part of the registration process. This will allow the Licensee to incorporate whatever details are necessary, such as its licensed PEA boundary, without involving the database administrator in the specifics.”⁸¹ Mobile Future also endorses the Commission’s approach, provided that the TV Bands Database is accurate and accounts for carrier needs for protection “during the initial and testing phases of operations.”⁸²

The Commission’s proposal here – a reporting requirement enforced by an FCC-certified geolocation database system – is also consistent with the approach the Commission appears likely to adopt in the 3550-3650 MHz band. The new Citizens’ Broadband Radio Service would allow General Authorized Access (unlicensed or license-by-rule) to operate on vacant licensed spectrum in the band, on a very localized basis, until such time as Priority Access License (PAL)

⁸¹ Comments of Spectrum Bridge at 6.

⁸² Comments of Mobile Future, ET Docket No. 14-165 and GN Docket No. 12-268 at 5 (Feb. 4, 2015) (“Comments of Mobile Future”) (“administrators should update the white spaces database when carriers begin operating on particular frequencies in particular PEAs to inform unlicensed operators that white spaces devices may no longer operate on that spectrum”).

holders notify the geolocation database administrator (in this case, the Spectrum Access System) the date on which they will commence operations.⁸³

OTI and PK have previously proposed a 30-day notification period during which a licensee can check and verify that the TV Bands Database has removed permission to use the licensee's frequency block within the protected contour of any service area. A substantial notification period benefits both licensees and unlicensed operators, since the former will have time to verify the band is clear and the latter (mainly fixed wireless operators, such as WISPs) may need time to reconfigure their networks to use alternative channels.

At the same time, OTI and PK recommend that the Commission accord licensees the ability to notify a TV Bands Database, even on short notice, about specific periods of time the licensee needs to operate prior to commencing regular, ongoing commercial operations.⁸⁴ If a licensee needs the band clear in a local area for testing or any other legitimate purpose, the Commission should permit the licensee to make a reservation in the TV Bands Database, just as licensed wireless microphone operators can do today, and immediately exclude opportunistic use at the places and times needed.⁸⁵

In sum, with clear ground rules and the TV Bands Database as an automatic enforcement mechanism, the operations of licensed carriers would not be impacted in the slightest. The licensees' "burden" (to notify a TV Bands Database administrator) would be *de minimus* and not involve collecting any data carriers do not already have readily at hand. The admonition in the 2012 report and recommendations of the President's Council of Advisors on Science and

⁸³ See *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, FCC 14-49 (rel. Apr. 23, 2014).

⁸⁴ See Comments of the Public Interest Spectrum Coalition, Docket No. 12-268, *et al.* (Jan. 25, 2013) ("Comments of PISC"), at 59-60.

⁸⁵ See Comments of PISC at 60. *Accord* Comments of Mobile Future at 5 ("Commission must adopt a definition of 'commences operations' that protects licensees from harmful interference during the initial and testing phases of operations").

Technology (PCAST) is as relevant for the 600 MHz band as it is for unused Federal spectrum, to wit: “The incongruity between concern about a ‘looming spectrum crisis’ and the reality that only a fraction of the Nation’s prime spectrum capacity is actually in use suggests the need for a new policy framework to unlock fallow bandwidth in all bands, as long as it can be done without compromising the missions of Federal users and ideally by improving spectrum availability for Federal users.”⁸⁶

IV. CONCLUSION

OTI and PK strongly commend and support the Commission’s efforts to ensure that at least three to four 6 MHz channels will be available for unlicensed WSDs in every market. The thoughtful proposals in the *NPRM*, taken together and with some modest improvements, hold true to the balanced policy adopted in last May’s *Incentive Auction R&O* and have the potential to facilitate a robust national market for low-band unlicensed innovation and consumer welfare. Our groups look forward to working with the Commission to complete these rules quickly so that both the incentive auction and further investment in unlicensed devices and deployments can proceed without undue delay.

Respectfully Submitted,

**Open Technology Institute at New America
Public Knowledge**

Harold Feld
Executive Vice President
Public Knowledge
1818 N Street, NW
Washington, DC 20036

/s/ Michael Calabrese
Michael Calabrese
Patrick Lucey
Wireless Future Project/
Open Technology Institute
1899 L Street, NW – 4th Floor
Washington, DC 20036

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⁸⁶ President’s Council of Advisors on Science and Technology, *Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth* (July 2012), at 16.