
FROM THIRD CLASS CITIZEN TO FIRST AMONG EQUALS: RETHINKING THE PLACE OF UNLICENSED SPECTRUM IN THE FCC HIERARCHY

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I. INTRODUCTION

The last ten years has seen an explosion in uses of wireless technologies. This, in turn, has driven a demand for “more” spectrum to support these uses. A recent spectrum license auction by the Federal Communications Commission (“Commission” or “FCC”), which regulates all civilian uses of wireless technologies in the United States, generated almost \$14 billion.¹ The FCC’s most recent report on the wireless industry found that all uses of licensed wireless services, from mobile telephone use to fixed wireless data services, continued to grow at an astounding rate.²

At the same time, a multibillion dollar industry has grown in the use of “unlicensed” spectrum.³ Part 15 of the Commission’s rules permits manufacture of wireless devices for any use at very low powers on designated

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¹ News Release, Fed. Comm’ns Comm’n., FCC’s Advanced Wireless Services (AWS) Spectrum Auction Concludes (Sept. 18, 2006), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-267467A1.pdf

² *In re* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Eleventh Report*, FCC 06-142, ¶ 5 (Sept. 29, 2006), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-142A1.pdf.

³ The term “unlicensed” is a misnomer that has created serious confusion in the regulatory treatment of these devices. *See* Thomas W. Hazlett, *Spectrum Tragedies*, 22 YALE J. REG. 242, 246 (2005). The term will, however, continue to appear throughout this article because it has been so widely adopted in this use that attempting to substitute a more appropriate term proves both cumbersome and confusing.

bands.⁴ In addition to a myriad of consumer devices, businesses, community organizations, and state and local governments have begun using this unlicensed spectrum to provide low-cost high-speed Internet access. Plans exist to cover entire cities in unlicensed “wireless clouds” to provide always-on, ubiquitous broadband services.⁵ Because users of unlicensed spectrum enjoy economies of scale and do not pay for expensive spectrum licenses, unlicensed spectrum can offer a less expensive and more readily deployable form of wireless service than licensed spectrum—albeit at a trade off for quality of service and protection from interference.⁶ With this rise in intensive use, the FCC has also faced pressure to open more spectrum for unlicensed use.

As the pressure to find new licensed and unlicensed spectrum has grown, conflict between these two interests has become a critical question to current spectrum policy. The conflict increases because many advocates of unlicensed use maintain that they can coexist on the same band as licensed users in new ways that enhance the utility of unlicensed spectrum without decreasing the utility of licensed services. Licensees and their supporters contend that allowing unlicensed users to share frequency bands with licensees subjects licensed services to the possibility of harmful interference and denies licensees the opportunity to fully exploit the value of their wireless licenses. Each side has put forth extensive arguments to explain why one or the other approach maximizes consumer welfare, spurs economic investment, and would therefore better serve the public.

As a practical matter, however, the FCC must first make a fundamental determination—what does the law require? While determinations with regard to the best overall public policy have obvious impact on how the FCC should act, the Communications Act of 1934, as amended (“Communications Act”) and First Amendment jurisprudence limit the FCC’s scope. These considerations created the current spectrum regulatory framework and—barring any significant change by Congress—will shape FCC spectrum policy for the foreseeable future. Accordingly, it behooves those seeking an answer to the FCC’s multibillion dollar question to understand the existing framework and the FCC’s authority to change it.

Since the FCC revised its rules pertaining to unlicensed spectrum in 1989, it has employed a fairly straightforward hierarchy to determine the level of protection afforded to users of wireless services.⁷ The hierarchy

⁴ See 47 C.F.R. § 15.1 *et seq.* (2005).

⁵ Marguerite Reardon, *Citywide Wi-Fi Spending Could Hit \$3 Billion*, CNET NEWS.COM, Oct. 25, 2006, http://news.com.com/2100-7351_3-6129655.html.

⁶ *Id.*

⁷ See *In re* Amendment of the Commission’s Rule Regarding Dedicated Short-Range Communication Services in the 5.850–5.925 GHz Band (5.9 Band); Amendment of Parts 2 and 90 of the Commission’s Rules to Allocate the 5.850–5.925 GHz Band to the Mobile Service for Dedicated Short-Range Communications of Intelligent Transportation Services,

generally illustrates a three-tiered approach to allocating spectrum for new services: (1) traditional licensing, (2) licensing by rule, and (3) unlicensed access.⁸

Licensed spectrum users sit at the top of the ladder. The Communications Act and FCC regulation guarantee licensees operating within their license terms protection from harmful interference from other man-made sources.⁹ Next are users “licensed by rule.”¹⁰ Those users must not interfere with traditionally licensed users, but still enjoy certain rights consistent with the rules governing their services.¹¹

At the bottom of the hierarchy sit unlicensed spectrum users. Anyone may use a “Part 15”¹² device, which are devices certified by the FCC as compliant with the appropriate rules, for any purpose.¹³ In exchange for this flexibility, unlicensed spectrum users must accept interference from any source, and must not tamper with the device in any way that would allow the device to violate the rules governing the unlicensed frequency bands.¹⁴ Part 15 devices have traditionally been relegated by rule to very low power emissions; the highest power Part 15 devices are confined to only a few frequency bands.¹⁵

This article argues that First Amendment principles, combined with changes in wireless technology, dictate a shift from a process in which primary consideration is granted to licensed users in favor of an approach that puts licensed and unlicensed users on equal footing. Indeed, given the strong First Amendment and public policy benefits of creating a world in which all citizens can speak through the public airwaves, rather than one in which the public must rely on a handful of government-licensed intermedi-

Notice of Proposed Rulemaking and Order, 17 F.C.C.R. 23,136, at ¶¶ 52–54 (Nov. 7, 2002) (describing the hierarchical relationship among spectrum uses).

⁸ *Id.*

⁹ Licensed operators may maintain their own hierarchy of “primary” and “secondary” services. The hierarchy is illustrated in the context of low power FM and non-exclusive licensing. Low power FM licensees are secondary to full power FM licensees. *See* 47 C.F.R. § 73.809 (2005) (requiring low power FM to avoid interference with full power FM station). Bands designated for non-exclusive use are subject to “first in time, first in right” rules giving primacy to the first licensee. *See* §101.147(a)(20) (subjecting new frequency assignments to secondary treatment relative to those already using the band).

¹⁰ *See, e.g.*, §§ 95.201–95.224.

¹¹ *Id.*

¹² Unlicensed devices are known as “Part 15” devices, so named for the part of the Code of Federal Regulations governing their use. *See* § 15.1. A cordless telephone is one example of a Part 15 device. *See* § 15.214.

¹³ *See id.* §§15.1, 15.5, 15.21.

¹⁴ *Id.*

¹⁵ Generally, the highest power Part 15 devices are of 1 watt or less, and are confined to “junk bands”—frequencies regarded as undesirable for licensed services. Gerald R. Faulhaber, *The Question of Spectrum Technology, Management, and Regime Change*, 4 J. TELECOMM. & HIGH TECH. L. 123, 139 (2005–06).

aries, the FCC should make every effort to foster the development of technologies that facilitate non-exclusive unlicensed use.

In resolving the question set forth above, the FCC should, as a general rule, favor enhancing unlicensed spectrum access rather than attempting to convert spectrum licenses into a species of property. This is not, as some have argued, at the expense of exclusively licensed services, since the FCC must still ensure that these unlicensed services do not interfere with existing licensed services. First Amendment principles, combined with the public policy mandated by Congress in the Communications Act, dictate that the FCC should facilitate unlicensed access while regarding requests to enhance exclusive rights with considerable skepticism.

The FCC cannot justify, on the grounds of economic benefits such as high spectrum auction revenues, regulations that limit the First Amendment speech rights of would-be speakers. Indeed, the Supreme Court explicitly prohibited this course of action in the context of exclusive cable franchises.¹⁶ There is no legal basis for the suggestion that the First Amendment calculus applied to cable should yield a different result in the context of wireless. To the contrary, the Supreme Court has indicated that, were technology to advance to a point where the “scarcity” rationale no longer applied, it would view regulation of spectrum differently.¹⁷ Thus, where technology provides a means to eliminate the risk of interference, the First Amendment requires the FCC to create rules supporting that technology.¹⁸

This article does not claim technology has advanced to the point of invalidating the scarcity rationale altogether; in fact, interference-avoidance technology remains at an early stage. Indeed, as others have argued, the idea that exclusive use and non-exclusive use cannot coexist is a false dichotomy.¹⁹ This article also does not contend that considerations of economics or other non-interference concerns have no place in FCC evaluations of service rules and spectrum allocation. The general public interest standard and specific provisions of the Communications Act require the

¹⁶ *City of Los Angeles v. Preferred Commc'ns*, 476 U.S. 488, 494–95 (1986).

¹⁷ *FCC v. League of Women Voters of Cal.*, 468 U.S. 364, 376 n.11 (1984). In *League of Women Voters*, the Supreme Court observed that critics contend the scarcity rationale is obsolete. *Id.* Despite recognizing the critics' position, the Court was “not prepared...to reconsider [the] longstanding approach [of approving broadcast regulation based upon the scarcity rationale] without some signal from Congress or the FCC that technological developments have advanced so far that some revision of the system of broadcast regulation may be required.” *Id.*

¹⁸ *Cf. Red Lion Broad. Co. v. FCC*, 395 U.S. 367, 389 (1969) (“Where there are substantially more individuals who want to broadcast than there are frequencies to allocate, it is idle to posit an unbridgeable First Amendment right to broadcast comparable to the right of every individual to speak, write, or publish.”).

¹⁹ *See, e.g., Kevin Werbach, From Commons to Supercommons*, 82 *TEX L. REV.* 863 (2004).

FCC to consider numerous factors when setting service rules.²⁰ This article argues that putting unlicensed spectrum use on par with that of licensed use will foster the development of interference avoidance technologies. It also argues that those technologies will significantly decrease the need for spectrum regulation and enhance the ability of citizens to freely communicate with one another as envisioned by the First Amendment. Finally, the First Amendment and public interest factors mandated by the Communications Act²¹ require an evolutionary approach to spectrum management. By fostering shared, non-exclusive access, the FCC can move unlicensed spectrum use from its position as “third class citizen” to its rightful place as “first among equals.”

The FCC should therefore adopt a more rigorous standard of review, including the imposition of a high standard of proof upon those opposing proposals for new unlicensed uses, and case-by-case remedies for instances of alleged violations by authorized interference-avoidance devices. Specifically, the Commission should examine each new proposal under the intermediate scrutiny standard of review.²² Under this regime, the Commission would have to demonstrate a compelling government interest in order to justify the denial of a proposal for greater non-exclusive use. When licensees or those favoring licensing argue that the proliferation of unlicensed devices would cause destructive interference, the FCC should require those opponents to show substantial evidence justifying those claims. Where evidence about possible interference remains inconclusive, the FCC should favor post hoc technological remedies that would allow for deactivation or recall of devices rather than prohibiting their use entirely. Thus, while a more rigorous review process would seem antithetical to the promotion of unlicensed spectrum uses, it would in fact create a more level playing field, thereby encouraging the development of more unlicensed devices and uses.

Any other approach creates a First Amendment “Catch-22.” The FCC only exists because Congress concluded, and the Supreme Court concurred, that a government agency must regulate the use of spectrum to ensure that harmful interference does not render productive use of the public airwaves impossible.²³ Without this precondition, exclusive licensing of the

²⁰ See 47 U.S.C. § 302a (2000).

²¹ 47 U.S.C. § 151 *et seq.* (2000).

²² The “intermediate scrutiny” standard is used by courts reviewing content-neutral regulations affecting free speech. *See, e.g., Turner Broad. Sys., Inc. v. FCC*, 512 U.S. 622 (1994). Under that level of scrutiny, content-neutral regulations affecting free speech will be sustained if they further an important or substantial government interest unrelated to suppressing free expression, and are essential to advancing that government interest. *See id.* at 636.

²³ “Unless Congress had exercised its power over interstate commerce to bring about allocation of available frequencies and to regulate the employment of transmission equipment the result would have been an impairment of the effective use of these facilities by

right to speak could not survive First Amendment scrutiny.²⁴ In other words, if technology existed that permitted everyone to use spectrum productively with no harmful interference, the FCC would have no reason, and thus no legal basis, for issuance of exclusive licenses. Only the FCC can authorize new technology that minimizes the problem of interference, yet the problem of interference justifies its existence. The Commission is left in the conflicted position of having to authorize devices that could eliminate the justification for its existence.²⁵

If the FCC has the power to deny applications for reasons other than the likelihood that the proposed use will harmfully interfere with existing licensed services, its denial of First Amendment rights comes to rest on circular reasoning. The FCC must regulate spectrum access to prevent harmful interference. Why does harmful interference persist? Because the FCC will not permit the development of technologies that avoid harmful interference. Why? Permitting development of such technologies would have negative financial consequences for exclusive licensees, who only exist because the FCC does not permit the development of technology that would eliminate the problem of interference.

The “first among equals” (FAE) approach differs from the property and commons approaches that have dominated the debate over spectrum reform in recent years.²⁶ Rather than proposing one approach over the other, or suggesting side by side existence in allocated bands, an evolutionary approach is needed—an approach the FCC can implement without Congressional action or radical redistribution of access rights. The FAE approach would balance the interests of high power exclusive users and lower-powered non-exclusive users, with the goal of promoting the most productive use of the electromagnetic spectrum, and, most importantly, the greatest freedom of speech.

First Amendment analysis prohibits the complete propertization of spectrum proposed by some advocates. Moreover, where proponents offer only economic justifications, the First Amendment prevents treating white spaces and underlays as exclusive property rights. As demonstrated below, however, empirical evidence casts doubt on property proponents’ claims that a massive and sudden transition to treating spectrum licenses as a species of property would generate economic or social benefits. Because the

anyone.” *FCC v. Sanders Bros. Radio Station*, 309 U.S. 470, 474 (1940). *See also* Krystilyn Corbett, *The Rise of Private Property Rights in the Broadcast Spectrum*, 46 *DUKE L.J.* 611, 617–20 (1996–97). The Federal Communications Commission, created by the Communications Act of 1934, was mandated to resolve conflicting spectrum uses by devising an exclusive spectrum license regime. *Id.* at 617–18.

²⁴ Charles Jackson, et al., *Spread Spectrum Is Good, But It Does Not Obsolete NBC v. U.S.!*, 58 *FED. COMM. L.J.* 245, 246–48 (2006) (arguing that technological advances have not yet eliminated the basis for regulating spectrum based on scarcity).

²⁵ Faulhaber, *supra* note 15, at 141.

²⁶ *Id.* at 142–52.

F AE approach of balancing non-exclusive and exclusive uses rejects the false dichotomy advanced by property proponents (and some commons proponents as well), adoption of the FAE framework serves the public interest even if it were not mandated as a First Amendment issue.

The FCC has already taken the first steps in encouraging an FAE approach. The FCC's Spectrum Policy Task Force Report, a comprehensive but non-binding study and evaluation of FCC spectrum policy, recommended that the FCC work to enhance the flexibility of both exclusive rights and unlicensed access.²⁷ On several occasions, the FCC has explored options for introducing new opportunities for unlicensed underlays compatible with exclusive licensed services.²⁸ The FCC has also initiated a proceeding to establish interference temperature metrics that would facilitate unlicensed use in exclusive bands where such use would not interfere with the existing licensed use.²⁹ If the FCC adopted this metric, it would serve as an important first step in facilitating the restructuring of the existing spectrum hierarchy.

In Part II, this article examines the traditional basis for the Commission's authority to issue exclusive licenses and non-exclusive Part 15 certifications. The section argues that "unlicensed spectrum" is a misnomer; the FCC's Part 15 certification is simply another species of license. As a con-

²⁷ FED. COMM'NS COMM'N, SPECTRUM POLICY TASK FORCE REPORT 3 (2002), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-228542A1.pdf.

²⁸ See *In re* 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; Part 1 of the Commission's Rules - Further Competitive Bidding Procedures; Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions; Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico, *Notice of Proposed Rulemaking and Memorandum Opinion and Order*, 18 F.C.C.R. 6722, ¶¶ 145–48 (Mar. 12, 2003) (soliciting comment on possible underlay); *In re* 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; Part 1 of the Commission's Rules - Further Competitive Bidding Procedures; Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions; Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico; Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Report and Order and Further Notice of Proposed Rulemaking*, 19 F.C.C.R. 14,165 ¶¶ 138–39 (Jun. 12, 2004) (rejecting underlay for lack of engineering data but leaving open possible future underlay).

²⁹ *In re* Establishment of an Interference Temperature Metric to Quantify and Manage Interference and to Expand Available Unlicensed Operation in Certain Fixed, Mobile and Satellite Frequency Bands, *Notice of Inquiry and Notice of Proposed Rulemaking*, 18 F.C.C.R. 25,309, ¶ 1 (Nov. 13, 2003) [hereinafter Interference Temperature NOI].

sequence, there is nothing in the Communications Act that prohibits the FCC from reexamining its traditional hierarchy and moving to an FAE approach that creates a modest preference for rules that maximize the ability of people to use spectrum on a non-exclusive basis.

In Part III, this article explains why the First Amendment requires an FAE approach and prohibits a pure property-rights regime. That section examines proposals for treating schemes for non-exclusive use—such as interference temperature metrics and use of broadcast white spaces—as a form of exclusive property. Part III additionally examines briefly the public policies favoring an FAE framework over a pure property regime, even absent First Amendment considerations. Finally, in Part IV, this article explores how application of the FAE approach might operate by applying it to pending Commission proceedings.

II. THE FCC'S AUTHORITY TO CREATE "UNLICENSED" ACCESS

A. History of Spectrum Licensing

Initially, radio transmission required no licensing. As use of radio transmission became increasingly popular for commercial broadcasts and non-commercial uses, in 1927 Congress determined that interference between users required limiting the number of people transmitting frequencies.³⁰ To address this problem, Congress enacted the Radio Act, creating the Federal Radio Commission.³¹ The Communications Act of 1934 renamed this body the "Federal Communications Commission" and added to its jurisdiction wireline communication and general authority over "all means of communication" included in § 1 of the Act.³²

A significant portion of the Communications Act of 1934, like its predecessor, addressed spectrum licensing. When amended in 1934, the portions of the Radio Act addressing licensing of spectrum use became Title III of the Communications Act, but otherwise remained unchanged.³³ Throughout Title III, Congress demonstrated a clear intent to tightly control the use of spectrum.³⁴ Section 301 explains Congress' intent in Title III to maintain control of radio in the United States and to "provide for the use of such

³⁰ See *In re Nextwave Personal Commc'ns, Inc.*, 200 F.3d 43, 50–51 (2d Cir. 1999) (recounting the history of licenses and the governmental regulation of radio spectrum).

³¹ Federal Radio Act of 1927, Pub. L. No. 69-632, 44 Stat. 1162 (1927), *repealed and amended* by the Communications Act of 1934, Pub. L. No. 73-416, 48 Stat. 1064 (1934).

³² Communications Act of 1934, Pub. L. No. 73-416, § 151, 48 Stat. 1064.

³³ Compare Federal Radio Act of 1927, Pub. L. No. 69-632, §§ 9–15, 44 Stat. 1162 (1927) with Communications Act of 1934, Pub. L. No. 73-416, §§ 301–329, 48 Stat. 1064 (1934).

³⁴ See 47 U.S.C. § 301 *et seq.*

channels, but not the ownership thereof[.]” under FCC licenses.³⁵ Section 304 requires all licensees to waive “any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States.”³⁶ In the event anyone missed the limitations Congress imposed on licensees, Section 309(h) makes abundantly clear that licensees have no expectation of right beyond the four corners of a license.³⁷ A licensee enjoys neither an expectation of renewal nor a right to transfer or sell its license unless it demonstrates that renewal or transfer will serve the public interest.³⁸

A licensee enjoys very limited rights against the regulatory power of the FCC. For example, the FCC may, after giving due notice and process, alter the terms of a license over objection of a licensee.³⁹ The FCC may revoke a license if a licensee fails to comply with the rules or maliciously interferes with a signal licensed or otherwise authorized by the FCC.⁴⁰ The Communications Act also imposes a general obligation to use the minimum power necessary to achieve a desired purpose, even where the license might authorize greater power.⁴¹

In the nearly 80 years since the passage of the Federal Radio Act, Congress has never wavered from its intent to strictly control licenses. When Congress authorized distribution of licenses by auction,⁴² it emphatically rejected any interpretation that auctions conferred any kind of property right, or that distribution by auction conferred any right or privilege different from other means of distribution.⁴³ As the Second Circuit explained in *In re Nextwave Communications*:

The FCC’s auction rules promulgated under §309(j) have primarily a regulatory purpose: to ensure that spectrum licenses end up in the hands of those most likely to further congressionally defined objectives. The fact that market forces are the technique used to achieve that regulatory purpose does not turn the FCC into a mere creditor, any more than it turns an FCC license won at auction into a property estate in spectrum. Nothing about putting spectrum licenses up for auction rendered them anything other

³⁵ § 301.

³⁶ § 304.

³⁷ § 309(h).

³⁸ § 310(c)–(d).

³⁹ § 303(f).

⁴⁰ § 303(m).

⁴¹ § 324.

⁴² See Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 4008 (mandating that the Commission use, for a limited period of time, competitive bidding to grant licenses for mutually exclusive applications). Congress extended the “trial” use of competitive bidding, granting ongoing authority to the Commission for the use of auctions in assigning licenses. Balanced Budget Act of 1997, Pub. L. No. 105-33, § 111 Stat. 251, 258–67.

⁴³ 47 U.S.C. § 309(j)(6)(D) (2000) (“Nothing in this subsection, or in the use of competitive bidding, shall . . . be construed to convey any rights, including any expectation of renewal of a license, that differ from the rights that apply to other licenses within the same service . . .”).

than licenses, and the sole responsibility for the allocation of licenses lies with the FCC, with appeal to the courts of appeals, not the bankruptcy or district courts.⁴⁴

Indeed, where the FCC has sought to further privatize spectrum rights, Congress has acted to prevent that approach. In 2002, the FCC attempted to use an administrative proceeding to permit licensees to auction their Ultra High Frequency (“UHF”) licenses as a means of speeding the transition to digital television.⁴⁵ Congress acted swiftly to prevent the proposed auction, reiterating its intent to prevent private parties from selling access to the public airwaves.⁴⁶ As a result, the FCC has become far more circumspect in its efforts to experiment with private ownership of spectrum licenses.⁴⁷

While congressional control over license distribution has understandably earned the scorn of proponents of the “property” regime,⁴⁸ it also raises a troubling question for proponents of unlicensed spectrum use. Given the clear congressional intent to maintain control over spectrum use, where does the FCC derive its power to authorize Part 15 “unlicensed” spectrum? The lack of clear authority has prompted licensee stakeholders to assert that, to the extent the FCC can authorize unlicensed access under its Part 15 rules, it must limit the rights of Part 15 users and subordinate those rights to licensed users.⁴⁹

In fact, the FCC has maintained precisely such a hierarchy, assuring licensees superior rights to users of unlicensed spectrum. But recent recommendations by the FCC’s Spectrum Task Force, as well as proposals supported by technology companies and advocates of the “commons” school of spectrum reform, have prompted the FCC to consider new alternatives.

⁴⁴ *In re Nextwave Personal Commc’ns, Inc.*, 200 F.3d 43, 54–55 (2d Cir. 1999).

⁴⁵ *In re Reallocation of and Service Rules for the 698–46 MHz Spectrum Band, Report and Order*, 17 F.C.C.R. 1022, ¶ 6 (Dec. 12, 2001).

⁴⁶ Auction Reform Act of 2002, Pub. L. No. 107-195, 116 Stat. 715 (2002).

⁴⁷ For example, the FCC declined to adopt a proposed two-way auction as a means of rebanding the 2.5–2.69 GHz band in 2004. *See In re 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 F.C.C.R. 14,165 (2004).

⁴⁸ *See, e.g.*, James B. Speta, *Making Spectrum Reform “Thinkable,”* 4 J. TELECOMM. & HIGH TECH. L. 183, 185 (2005).

⁴⁹ *See In re Amendment of Part 15 of the Commission’s Rules to allow certification of equipment in the 24.05–24.25 GHz band at field strengths up to 2500 mV/m, Memorandum Opinion and Order*, 18 F.C.C.R. 15,944, ¶ 14 (Jul. 15, 2003) [hereinafter Part 15 Certification M&O] (rejecting American Radio Relay League argument that licensed services enjoy statutory priority to unlicensed devices); *In re Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, Comments of Cingular Wireless LLC*, ET Docket No. 02-380, at 2–4 (April 17, 2003) (accessible via FCC Electronic Comment Filing System) [hereinafter Cingular Comments] (arguing that § 301 prohibits authorized unlicensed services).

Notably, proposals such as ultra-wide band (“UWB”)⁵⁰ and interference temperature⁵¹ have called into question the validity of the FCC’s hierarchy and required reexamination of the source of authority for the FCC’s “unlicensed” spectrum access rules.

B. Development of the “Unlicensed” Regime

The FCC first began authorizing “unlicensed” devices as early as 1938. At the time, the FCC held that certain extremely low power uses of radio, by their very nature, could not constitute interstate use. Therefore, those devices were deemed to fall outside the Section 301 requirement that all users of spectrum operate pursuant to a license.⁵²

In 1982, however, Congress modified the Communications Act to give the FCC explicit control of interstate and intrastate radio use.⁵³ According to the legislative history, Congress sought to relieve the FCC of the expensive and tedious need to demonstrate that specific radio communications constituted interstate rather than intrastate transmissions.⁵⁴ Numerous users of the then-popular citizen’s band (“CB”) radio service created interference problems by illegally increasing the power of their transmitters. To prosecute these offenders, courts required the FCC to produce expert testimony demonstrating that the “supercharged” CB radio constituted an interstate, rather than merely an intrastate, use of radio and thus violated the prohibition in Section 301 of operating without an FCC license.⁵⁵

Section 301 was significantly broadened by the 1982 amendments, which unambiguously required an FCC license for any use of radio spectrum.⁵⁶ At the same time, however, Congress sought to relieve the FCC of the expense of processing millions of pro forma licenses to operate CB radios.⁵⁷ Congress therefore created Section 307(e), which allows the FCC

⁵⁰ See *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. 7435, ¶ 1 (2002).

⁵¹ See Interference Temperature NOI, *supra* note 29, ¶ 1.

⁵² See 47 U.S.C. § 301 (2000). See also Kenneth R. Carter, et al., *Unlicensed and Unshackled: A Joint OSP-OET White Paper on Unlicensed Devices and Their Regulatory Issues* iv, 6 (OSP Working Paper No. 39, 2003).

⁵³ Pub. L. 97-259, § 107 (codified at 47 U.S.C. § 301(2006)).

⁵⁴ H.R. CONF. REP. NO. 97-765 (1982) [hereinafter 1982 CONFERENCE REPORT].

⁵⁵ *Id.* at 31–32.

⁵⁶ Communications Amendments Act of 1982, Pub. L. No. 97-259, § 107, 96 Stat. 1087, 1091 (1982).

⁵⁷ At the time, to comply with Section 301, the FCC required CB manufacturers to include a pro forma application for a license to operate the CB, with instructions that the CB operator fill out the application and mail it to the FCC. Although the FCC estimated that only a small fraction of CB radio operators complied, even this relatively low return rate taxed the FCC’s staff. See 1982 CONFERENCE REPORT, *supra* note 54.

to license four specific radio services “by rule . . . without [the need for] individual licenses.”⁵⁸

Given this broad new power, and narrow exception, to Section 301, what was to become of the FCC’s ongoing efforts to permit “unlicensed” use of spectrum? As opponents to expanding Part 15 have argued, Congress simultaneously expanded the license requirement to include intrastate transmissions and created a very narrow exception for services “licensed by rule.” How could the FCC continue to authorize “unlicensed users” outside the narrow exception of Section 307(e)?

Apparently, unaware of the possibility that Congress had unintentionally eliminated its authority to authorize use of low power wireless without a license, the FCC undertook a major modification of its Part 15 rules in 1987.⁵⁹ The FCC reviewed its past history of authorizing individual applications for operation without licenses under Part 15, concluding that its piecemeal approach imposed needless expenses on those seeking to provide service, and deprived consumers of the benefits of new wireless devices.⁶⁰ Accordingly, the FCC proposed to move from a case-by-case approach to a systematic approach that would maximize innovation while protecting licensed services from harmful interference.⁶¹

Specifically, the 1987 Notice of Proposed Rulemaking (“1987 NPRM”) proposed to designate underlay bands by setting maximum power output for each band.⁶² Any device manufacturer who could prove that the device met specific technical specifications for operation in a band—such as power limitations and protection of neighboring bands from interference—would receive a certification permitting manufacture of the device.⁶³ Critically, the manufacturer would not need to explain the purpose of the device, or even limit the device to a single purpose. Rather, the consumer device owner would decide, presumably but not necessarily based on the intended purpose of the manufacturer, how to use the device.⁶⁴

In exchange for this flexibility, users of Part 15 devices would become subject to certain limitations.⁶⁵ The proposed rules would require a Part 15 device to accept interference from any source and interfere with any licensed service. The Part 15 device must cease operation immediately, if necessary, to avert interference to the licensed service.⁶⁶

⁵⁸ 47 U.S.C. § 307(e) (2000).

⁵⁹ *In re* Revision of Part 15 of the rules regarding operation of radio frequency devices without an individual license, *Notice of Proposed Rulemaking*, 2 F.C.C.R. 6135, ¶¶ 1, 4 (Sept. 17, 1987).

⁶⁰ *Id.*

⁶¹ *Id.* ¶¶ 12–18.

⁶² *Id.* ¶¶ 36–39, 41–49.

⁶³ *Id.* ¶ 36.

⁶⁴ *Id.* ¶¶ 50–51.

⁶⁵ *Id.* ¶ 20.

⁶⁶ *Id.*

The Commission adopted the proposed changes with only minor modification in 1989.⁶⁷ The Commission did not explain, however, in either the 1987 NPRM or the 1989 decision, the source of its authority for those rules. There also appeared to be no consideration of whether the 1982 amendments to the Communications Act, by eliminating the distinction between unregulated *intrastate* transmissions and regulated *interstate* transmission and requiring a license for all wireless transmissions, altered the Commission's authority with respect to unlicensed spectrum. The FCC invoked its general authority under sections 154, 302, 303, and 307 of the Communications Act,⁶⁸ but these sections offer little insight into the FCC's thought process with respect to its authority to promulgate rules for unlicensed spectrum use outside those specifically authorized by Congress. Section 154 refers to general Commission authority; section 302 addresses certification of electronic equipment to minimize potential interference; section 303 provides general authority to regulate licenses; section 304 requires all licensees to waive any claim against the regulatory power of the United States as a consequence of prior use; and section 307 provides certain considerations with regard to allocation of licenses and renewals, as well as Section 307(e) added in 1982.⁶⁹

The preface to the Part 15 rules adopted in 1989 implies that the FCC considered its Part 15 certification authority to arise out of Section 302.⁷⁰ The FCC has, in fact, relied upon such an approach from time to time.⁷¹ This approach, however, has numerous difficulties. Congress created Sec-

⁶⁷ *In re* Revision of Part 15 of the rules regarding operation of radio frequency devices without an individual license, *Report and Order*, 4 F.C.C.R. 3493, ¶¶ 1–13 (Mar. 30, 1989) [hereinafter *1989 R&O*]

⁶⁸ See 47 U.S.C. §§ 154, 302a, 303, 304, 307 (2000). See also *In re* Revision of Part 15 of the rules regarding operation of radio frequency devices without an individual license, *Notice of Proposed Rulemaking*, 2 F.C.C.R. 6135, app. B at ¶ 8 (Sept. 17, 1987); *1989 R&O*, *supra* note 67, at app. B ¶ 1.

⁶⁹ See §§ 154, 302a, 303, 304, 307(e).

⁷⁰ The preface to Part 15 reads as follows:

(a) This Part sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

(b) The operation of an intentional or unintentional radiator that is not in accordance with the regulations in this Part must be licensed pursuant to the provisions of Section 301 of the Communications Act of 1934, as amended, unless otherwise exempted from the licensing requirements elsewhere in this Chapter.

(c) Unless specifically exempted, the operation or marketing of an intentional or unintentional radiator that is not in compliance with the administrative and technical provisions in this Part, including prior Commission authorization or verification, as appropriate, is prohibited under Section 302 of the Communications Act of 1934, as amended, and Subpart I of Part 2 of this Chapter. The equipment authorization and verification procedures are detailed in Subpart J of Part 2 of this Chapter.

47 C.F.R. §§ 15.1(a)–(c) (2005); *1989 R&O*, *supra* note 67.

⁷¹ See Part 15 Certification M&O, *supra* note 49, ¶¶ 11–15.

tion 302a in 1968,⁷² and modified it as part of the 1982 amendments.⁷³ The legislative history of the 1982 amendments demonstrates that Congress saw a need to control growing radio frequency interference from home consumer devices,⁷⁴ and the need to address equipment manufacturers' arguments that the FCC lacked the proper authority to regulate incidental radiators of electromagnetic energy.⁷⁵

The plain language of the statute itself, while not explicitly prohibiting such an interpretation, lends little support to the idea that Section 302 may serve as a separate source of authority for behavior prohibited by Section 301, as 47 CFR §15.1(b) implies. The statute authorizes the FCC

to make reasonable regulations (1) governing the interference potential of devices which in their operation are capable of emitting radio frequency energy . . . in sufficient degree to cause harmful interference to radio communications; and (2) establishing minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from radio frequency energy.⁷⁶

While the Part 15 rules describe performance standards, they also authorize "an apparatus for the transmission of energy or communications or signals by radio,"⁷⁷ which, under Section 301, may only take place subject to a license granted by the FCC and subject to the other limitations of "licenses" in the Act.

The apparent conflict between sections 301 and 302 likely seemed of little consequence in 1989, since no one anticipated using Part 15 devices for communication. The uses of Part 15 devices prior to 1989 seemed more supportive of a reliance upon section 302. Prior to 1989, Part 15 devices were primarily used for very short range communication between consumer devices—typically electronic garage door openers, television remote controls, and cordless telephones.⁷⁸ While those devices transmitted signals by radio, they did not seem to be of the type of communication Congress intended to cover under Section 301. In fact, the FCC historically authorized use of such devices without any explicit authority, based on a theory that Section 301 simply did not cover such low power, non-interfering devices. No one raised the question as to whether Congress' 1982 modifications of Section 301 altered the traditional FCC analysis; it is unsurprising that the FCC did not question its own authority.

As time passed, however, the ability to use low power Part 15 devices for communication became increasingly clear. In 1996, the FCC proposed extending the Part 15 rules to permit low power transmissions in the 5.8 GHz band as part of the creation of a new, unlicensed national information

⁷² Pub. L. 90-379, 82 Stat. 290 (1968).

⁷³ Communications Amendments Act of 1982, Pub. L. No. 97-259 § 108, 96 Stat. 1087.

⁷⁴ See 1982 CONFERENCE REPORT, *supra* note 54, at 21–23.

⁷⁵ *Id.* at 32–33.

⁷⁶ 47 U.S.C. § 302a(a) (2000).

⁷⁷ § 301.

⁷⁸ See Carter et al., *supra* note 52 at 6–7.

infrastructure.⁷⁹ Again, although individual parties objected to specifics of the proposal, the FCC's general authority to authorize that use went unquestioned and the Commission adopted the proposal in 1997.⁸⁰ Unlike that of 1989, the 1997 action had the unambiguous intent of authorizing data communication along with the potential for voice and video communications identical to those authorized under traditional Section 301 licenses.⁸¹ Again, however, the authority of the FCC to authorize a new unlicensed service went unchallenged, and the FCC did not question its own authority to act.

C. Expansion of Part 15 Authority

Only recently, as users of unlicensed spectrum have sought further expansion of Part 15 authority that extends into bands populated with licensed users, have licensees begun to actively challenge the Commission's authority to authorize Part 15 services.⁸² By this time, however, the FCC's Part 15 rules had received a Congressional imprimatur, if not explicit authority.⁸³

As part of the Balanced Budget Act of 1997, Congress required the FCC to use auctions to resolve most cases of conflicting applications for licenses, and ordered that the National Telecommunications and Information Administration ("NTIA") and the FCC cooperate to clear government operations from particular frequency bands to create new opportunities to auction licenses.⁸⁴ That same act, however, prohibited the FCC from clearing and auctioning licenses in bands "allocated or authorized for unlicensed use pursuant to Part 15 of the Commission's regulations" at the time of passage of the Balanced Budget Act of 1997, and where "the operation of services licensed pursuant to competitive bidding would interfere with the operation of end-user products permitted under such regula-

⁷⁹ *In re* Amendment of the Commission's Rules to Provide for Operation of Unlicensed NII/Super Net Operations in the 5 GHz Frequency Range, *Notice of Proposed Rulemaking*, 11 F.C.C.R. 7205, ¶¶ 1–2 (Apr. 25, 1996).

⁸⁰ *In re* Amendment of the Commission's Rules to Provide for Operation of Unlicensed NII/Super Net Operations in the 5 GHz Frequency Range, *Report and Order*, 12 F.C.C.R. 1576, ¶¶ 17–18 (Jan. 9, 1997) (authorizing the new band for Part 15 devices).

⁸¹ *Id.* ¶¶ 8–18.

⁸² See Cingular Comments, *supra* note 49, at 2–4 (challenging Commission's authority to authorize ultra-wide band operations across frequency bands assigned to licensees); Part 15 Certification M&O, *supra* note 49, ¶¶ 12–15 (rejecting argument of American Radio Relay League that any transmitter capable of sending signals must be licensed under Section 301). See generally R. Paul Margie, *Can You Hear Me Now? Getting Better Reception from the FCC's Spectrum Policy*, 2003 STAN. TECH. L. REV. 5 (2003), http://stlr.stanford.edu/STLR/Articles/03_STLR_5.

⁸³ See, e.g., Balanced Budget Act of 1997, Pub. L. No. 105-33, §§ 3001–08, 111 Stat. 257.

⁸⁴ *Id.* § 3002.

tion.”⁸⁵ In other words, as of 1997, Congress: (a) demonstrably knew the FCC authorized unlicensed devices, (b) approved of this exercise of Commission authority, and (c) demonstrated a preference for keeping unlicensed devices free from interference from newly authorized licensed services.⁸⁶

Although this Congressional approval mooted the argument that the FCC lacked authority to authorize unlicensed devices, the exact nature and scope of the FCC’s authority remained unclear. In 2001, the FCC clarified that it derived its authority to permit operation of Part 15 devices from Section 302, and reaffirmed this position in 2003 in response to a Petition for Reconsideration.⁸⁷ In the Part 15 Certification Memorandum Opinion and Order, the FCC maintained that its authority to regulate devices capable of causing harmful interference permitted it to authorize devices that do not interfere with licensed services.⁸⁸ Since the rules adopted ensured that the devices authorized under Part 15 would not cause harmful interference with any licensed service, and required Part 15 devices that caused interference to cease operation, no conflict existed between the authorization of unlicensed devices pursuant to Section 302 and licensed services pursuant to Section 301.⁸⁹

While not prohibited on its face, this assertion draws little support either from the plain language or the statutory history of Section 302. On the other hand, the section provides a source for FCC authority subsequently ratified by Congress in the Balanced Budget Act of 1997, and consistent with the language of the 1989 Report and Order and Part 15.1 of the Commission Rules.⁹⁰

Confronted with this apparent conflict, the FCC undertook a thorough examination of its Part 15 authority and its relationship to services licensed pursuant to Section 301 in its 2004 Second Report and Order and Second Memorandum Opinion and Order on UWB service (“Second UWB Order”).⁹¹ UWB systems “generally employ pulse modulation where extremely narrow (short) bursts of [radio frequency] energy are modulated and emitted to convey information.”⁹² Because these systems use short bursts covering wide bandwidths, UWB systems emit across a wide num-

⁸⁵ *Id.*

⁸⁶ *Cf.* Balanced Budget Act of 1997, Pub. L. No. 105-33, §§ 3001–08, 111 Stat. 257.

⁸⁷ *In re* Amendment of Part 15 to allow certification of equipment in the 24.05–24.25 GHz Band at field strengths up to 2500 mV/m, *Report and Order*, 16 F.C.C.R. 22,337, ¶ 12 (Dec. 11, 2001), *aff’d*, Part 15 Certification M&O, *supra* note 49, ¶ 14.

⁸⁸ *See* Part 15 Certification M&O, *supra* note 49, ¶¶ 3–7.

⁸⁹ *See id.* ¶ 1.

⁹⁰ *See* 1989 R&O, *supra* note 67; 47 C.F.R. § 15.1 (2005).

⁹¹ *In re* Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems, *Second Report and Order and Second Memorandum Opinion and Order*, 19 F.C.C.R. 24,558 (Dec. 15, 2004) [hereinafter Second UWB R&O].

⁹² *Id.* ¶ 2.

ber of bands simultaneously, including bands usually prohibited to Part 15 operation.⁹³ Unsurprisingly, licensees vigorously protested and argued the statutory authority question, requiring a thorough response from the FCC.⁹⁴

The FCC began its analysis not with Section 302, but with Section 301.⁹⁵ It concluded that, while Section 301 speaks of “any apparatus” for transmission of energy, “the statute is not phrased in terms of ‘any’ energy, ‘any degree’ of energy, or ‘any level’ of energy.”⁹⁶ In light of subsequent acts of Congress since the passage of Section 301 indicating Congressional approval of the FCC’s Part 15 regime, the FCC concluded that “a more reasonable reading of Section 301, consistent with Congress’ intent and subsequent legislation, would limit the licensing requirement to any apparatus that transmits enough energy to have a significant potential for causing harmful interference.”⁹⁷

In other words, the FCC reached the same result as it had under its Section 302 analysis through an administrative interpretation of Section 301. In this reading, Congress’ enactment and subsequent modification of Section 302 served to bolster and support the FCC’s interpretation of Section 301, rather than operate as a separate source of authority. Nevertheless, it reached the same end result. As long as the FCC imposed sufficient limits on a device to prevent it from having significant potential of interfering with services licensed under Section 301, the device itself did not require an individual license.

The FCC went even further in its analysis. By identifying the gray area between devices operating at sufficiently low power as not to require a license and those requiring a license, the FCC offered an alternative justification for its Part 15 rules:

[O]ur Part 15 requirements provide a sufficient degree of regulatory oversight, individualized review and approval to constitute a “licensing” process that satisfies Section 301 requirements. While we do not apply the term “license” to the Part 15 approvals that are required to manufacture and distribute Part 15 devices, such approvals (e.g., certifications for intentional radiators) constitute agency authorization for the manufacture, distribution and use of devices that have passed individualized requirements. As such, there is little to distinguish in a practical or legal sense Part 15 approvals of devices from the more overt Section 301 “licenses.”

Section 301 does not limit the types of licenses that the Commission may grant, and the Commission has exercised discretion in developing a diverse regulatory scheme. Section 3 of the Act defines “station license,” “radio station license,” or “license” broadly to mean “that instrument of authorization required by this Act or the rules and

⁹³ *Id.* ¶¶ 2–5.

⁹⁴ In point of fact, the FCC also rejected the legal arguments for procedural reasons, arguably rendering its reasoning on its statutory authority *dicta*. The language of the FCC’s order, however, makes clear that the agency adopted this interpretation of its authority as binding. *Id.* ¶ 60.

⁹⁵ *Id.* ¶¶ 64–78.

⁹⁶ *Id.* ¶ 68.

⁹⁷ *Id.* ¶ 68.

regulations of the Commission made pursuant to this Act, for the use or operation of apparatus for the transmission of energy, or communications, or signals by radio by whatever name the instrument may be designated by the Commission.⁹⁸

In other words, Section 301 does not conflict with Part 15 because Part 15 is itself a form of FCC “license” permissible under Section 301. In support of this argument, the FCC compared its Part 15 rules with other licensing schemes, such as the blanket authorizations for cell phones operating in conjunction with a site-licensed cellular tower, and found that the Part 15 procedures for “unlicensed devices” varied little from those imposed on certain licensed devices.⁹⁹

Past FCC practice buttresses this interpretation of Section 301 authority. In at least one case, the Commission assigned a Section 301 license to an equipment manufacturer, with blanket permission pursuant to the license to manufacture transceivers.¹⁰⁰ The Commission explicitly found that it acted pursuant to its Section 301 authority, and that such blanket authority was consistent with actions taken in other proceedings.¹⁰¹

Also instructive is the FCC’s use of similar logic in the related area of licensing under Title II of the Communications Act.¹⁰² In the 1980s, prior to the establishment of forbearance authority under Section 10, Section 214 of the Act required that all telecommunication service providers obtain a certificate of public convenience and necessity before constructing or extending any line.¹⁰³ In several proceedings over time, the FCC determined that issuing blanket authority for particular classes of carriers to extend or construct lines satisfied the statutory requirement for individual licenses to extend lines.¹⁰⁴ As with Section 301 licensing, the FCC determined that the statutory language requiring a certificate of public convenience and necessity could be satisfied by a blanket determination by the Commission.¹⁰⁵

⁹⁸ *Id.*, ¶¶ 75–76. *See also* 47 U.S.C. § 153(42) (2000) (defining “license”). Likewise, the Administrative Procedures Act defines license as “the whole or a part of an agency permit, certificate, approval, registration, charter, membership, statutory exemption or other form of permission.” 5 U.S.C. § 551(8) (2000).

⁹⁹ *See* Second UWB R&O, *supra* note 91, ¶ 76.

¹⁰⁰ *See In re* Amendment of the Commission’s Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to, a Radiodetermination Satellite Service; Policies and Procedures for the Licensing of Space and Earth Stations in the Radiodetermination Satellite Service, *Second Report and Order*, 104 F.C.C. 2d. 650, ¶¶ 28–29 (Apr. 22, 1986).

¹⁰¹ *Id.* at 667 n.56.

¹⁰² *See* 47 U.S.C. §§ 201–276. (2000).

¹⁰³ *Cf.* 47 U.S.C. § 214 (1982) with 47 U.S.C. § 214 (2000).

¹⁰⁴ *See In re* Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, *First Report and Order*, 85 F.C.C.2d 1 ¶¶ 29, 33 53 (Aug. 1, 1980) [hereinafter Competitive Common Carrier First R&O]; *In re* Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, *Fifth Report and Order*, 98 F.C.C.2d 1191 (Aug 8, 1984).

¹⁰⁵ Competitive Common Carrier First R&O, *supra* note 104.

Interpreting Part 15 device certification as a form of Section 301 licensing complicates the literal interpretation of some provisions of the Communications Act. Section 304, for example, requires individual waivers from licensees acknowledging that a licensee has no rights beyond the terms of the license and waiving any claim against the regulatory authority of the United States.¹⁰⁶ Section 301 requires licenses to endure for a limited duration rather than in perpetuity.¹⁰⁷ Section 310(d) prohibits transfers of licenses absent a specific Commission finding that the transfer will serve the public interest, convenience, and necessity.¹⁰⁸

As the FCC discussed in the Second UWB Order,¹⁰⁹ its Part 15 regulations comply with Section 301 in substance, if not in form, and further the goals of that section “to provide for the use, but not ownership thereof” of “all the channels of radio transmission.”¹¹⁰ The stipulations that every Part 15 device operator refrain from interfering with any licensed service, and that operators accept any interference from any source served the same purpose as the waiver required by Sections 304 and 309(h).¹¹¹ Section 310(d) permission to market and sell devices as part of the Part 15 certification process is akin to a blanket license to operate under Section 301. Finally, the license term is limited by the life of the device itself. When the device ceases to operate, the operator has no authority to continue operation unless he or she purchases a new device similarly approved under Part 15.¹¹²

While reasonable minds may differ on the current interpretation of these provisions of the Act, requiring a more literal reading of these statutory provisions would create havoc not merely for Part 15 devices, but for other devices authorized for use in higher power licensed networks. For example, every cell phone should, under a strict interpretation of the provisions of Title III, require an individual license.¹¹³ Individuals would need to apply for cell phones pursuant to Section 307 of the Act,¹¹⁴ and any sale of a cell phone would require Commission approval under Section 310(d).¹¹⁵

¹⁰⁶ 47 U.S.C. § 304 (2000).

¹⁰⁷ § 301.

¹⁰⁸ § 310(d).

¹⁰⁹ Second UWB Order, *supra* note 91.

¹¹⁰ § 301.

¹¹¹ §§ 304 and 309(h); 47 C.F.R. §§ 15.5(b), 15.19 (2000).

¹¹² Compare 47 U.S.C. § 301 (2000) (prohibiting any person from “us[ing] or operat[ing] any apparatus for the transmission of energy or communications or signals by radio” without a license) with 47 C.F.R. § 15.5 (2005) (indicating that an approved device may transmit radio signals in the frequency designated for use of unlicensed devices).

¹¹³ See 47 U.S.C. § 301 (2000).

¹¹⁴ See *id.* (requiring a license to transmit radio frequencies); § 307(e) (listing those instances in which a radio station may be operated without an individual license, and notably making no mention of an exception to the licensing requirement for cellular phones).

¹¹⁵ See § 310(d) (requiring that no rights afforded under a station license be “transferred, assigned, or disposed of in any manner” absent Commission approval.”).

Thus, if individual devices capable of transmitting signals can operate within a traditionally licensed network do not require individual licenses despite the plain language of Section 301 as applying to “any apparatus,”¹¹⁶ similar flexibility should apply to devices “licensed” by compliance with Part 15.

A recent comment filed by the FCC in a proceeding conducted by the Federal Aviation Administration (“FAA”) underscores this point.¹¹⁷ In response to an FAA proposal regarding, among other things, constructing or altering communications antennae affecting the navigable airspace, the FCC observed that the proposed new rule would impact “over 1 million” individual antennas covered by “blanket licenses” to a few manufacturers.¹¹⁸ As the FCC observed, a single license issued to a single manufacturer can cover up to 100,000 antennas that transmit and receive communications, and should—if one rigorously applied Section 301 as requiring an individual license in all such cases—require individual licenses.¹¹⁹

Even if Section 302 constitutes a wholly separate source of authority for unlicensed authorizations, nothing in the Communications Act indicates that Section 301 licensees must hold primary status over Section 302 certifications.¹²⁰ To the contrary, the Communications Act consistently treats licensed services and services otherwise authorized by the Commission as deserving equal protection.¹²¹ Moreover, the Act protects all services, whether licensed under Section 301 or not, by imposing limits—such as revocation of the licenses of operators shown to have purposefully interfered with any other signal—on traditionally licensed services.¹²² Whatever the source of the Commission’s authority for Part 15, therefore, it is in no way subordinate to more traditional spectrum licenses.

¹¹⁶ § 301.

¹¹⁷ See *In re Safe, Efficient Use and Preservation of Navigable Airspace, Notice of Proposed Rulemaking*, Docket No. FAA-2006-25002, Notice No. 06-06, *Comments of the Fed. Comm’n’s Comm’n* (filed August 11, 2006), available at http://dmses.dot.gov/docimages/pdf97/408773_web.pdf. The FAA notice proposed to require that owners of antenna meeting certain specified criteria file with the FAA prior to constructing or modifying their antenna. *Id.* at 1.

¹¹⁸ *Id.* at 4–5.

¹¹⁹ *Id.*

¹²⁰ See 47 U.S.C. §§ 301–302a (2000).

¹²¹ See, e.g., 47 U.S.C. § 303(m)(1)(E) (2000) (permitting the Commission to suspend or revoke license of operator that who “willfully or maliciously interfered with *any other radio communications or signals*”) (emphasis added); *id.* § 333 (prohibiting malicious interference with any licensed or *otherwise authorized* operator) (emphasis added).

¹²² See §§ 303(m)(1)(E); *id.* § 309(j)(6)(C)–(D), (F); see also § 324 (imposing requirement to use “minimum necessary power” to send signals, even if higher power is authorized by license); § 333 (prohibiting malicious interference by anyone including licensees, with other authorized signals).

III. RETHINKING THE SPECTRUM HIERARCHY

Rethinking Part 15 unlicensed access as simply another species of licensed communication under Section 301—or, in the alternative, as separately authorized under Section 302—opens new possibilities in reconsidering the balance between licensed and Part 15 services. Under the FCC’s traditional approach, as modified by the administrative interpretation in the Second UWB Order, the FCC has concentrated on ensuring that Part 15 power levels remain “low enough” to fall below the mandatory licensing requirement of Section 301.¹²³ If nothing else, reconceiving Part 15 as a species of licensed, rather than unlicensed, service allows the FCC to authorize significantly higher power.¹²⁴

As a matter of law, nothing prevents the FCC from reconsidering its longstanding policy of giving primacy to licensed services over Part 15 devices. To the contrary, where Congress has directly spoken, it has chosen to protect Part 15 devices against interference from the intrusion of new licensed services.¹²⁵ In addition, reconsidering the nature of Part 15 devices provides the FCC with greater flexibility in balancing the interests of licensed users with those of unlicensed spectrum users. The FCC has authority, for example, to prefer one licensed service over another,¹²⁶ to require licensed services to coexist with one another,¹²⁷ and even to migrate one licensed service to another frequency band and award the new vacancy to

¹²³ See *Second UWB R&O*, *supra* note 91, ¶¶ 69–78.

¹²⁴ Arguably, even under the FCC’s traditional interpretation, any signal strength that avoids interference with a licensed service is “low enough” to qualify for “unlicensed.” The language of the Second UWB R&O, however, clearly indicates that the FCC views the defining characteristic of Part 15 as “low power,” with the exception of the higher power “grey area” now covered under a broader interpretation of Section 301. *Id.*

¹²⁵ Balanced Budget Act of 1997, Pub. L. No. 105-33, § 3002(c)(1)(C)(v) (prohibiting creation of new licensed services in “bands allocated or authorized for unlicensed use pursuant to part 15” if such services “would interfere with operation of end-user products permitted under such regulation”).

¹²⁶ See, e.g., 47 C.F.R. § 73.809 (2005) (It is the responsibility of low power FM to avoid interference with full power FM stations); *In re Creation of a Low Power Radio Service, Second Order On Reconsideration and Further Notice of Proposed Rulemaking*, 20 F.C.C.R. 6763, ¶¶ 37–39 (Mar. 16, 2005).

¹²⁷ See, e.g., *In re Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems; Amendments to Parts 1, 2, 27, and 90 of the Commission’s Rules to License Services in the 216–220 MHz, 1390–1395 MHz, 1427–1429 MHz, 1429–1432 MHz, 1432–1435 MHz, 1670–1675 MHz, and 2385–2390 MHz Government Transfer Bands*, *Fourth Memorandum Opinion and Order*, 21 F.C.C.R. 4441, ¶¶ 14–22 (Apr. 5, 2006); *In re Amendment of Parts 2 and 25 of the Commission’s Rules to Authorize Subsidiary Terrestrial Use of the 12.2–12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates; Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. to Provide a Fixed Service in the 12.2–12.7 GHz Band*, *Memorandum Opinion and Order*, 17 F.C.C.R. 9614, ¶ 53 (Apr. 11, 2002).

another service the FCC believes will better serve the public interest.¹²⁸ If users of Part 15 devices stand as equals with users of traditionally licensed services, the FCC is free to strike the balance that best serves the public interest.

Indeed, the FCC has already taken several tentative steps in the direction of creating greater equality between non-exclusive users and exclusive licensees. For example, in 1995 the FCC authorized a new licensed service in the 900 MHz band which would have to coexist with the unlicensed use permitted in the band since 1989.¹²⁹ To protect unlicensed users from potential disruption, the FCC created a safe harbor rule for unlicensed devices.¹³⁰ Devices complying with the safe harbor would be presumed to operate in a manner compatible with the newly licensed service, and therefore not subject to the requirement to cease operation if the licensee complained of harmful interference.¹³¹

The FCC has also begun experimenting with “licensing-lite” regimes. In doing so, the FCC has moved from a set of rules that gave privilege to earlier users over later users—“first in time, first in right”—to rules actively modeled on Part 15’s more egalitarian approach. In 2005, for example, the FCC authorized a non-exclusive licensed service in the 3650–3700 MHz band.¹³² The band contained a limited number of satellite receiver stations.¹³³ As a result, large areas of the country could productively use the band without interfering with the incumbents.

For years, the FCC considered whether to create a traditional exclusive licensed service or to open the band to unlicensed use.¹³⁴ Ultimately, the FCC chose neither. While the FCC emphasized that it acted pursuant to its Section 301 licensing authority and did not intend to class the new service as a Part 15 unlicensed service, the service rules provide for a distinctly “commons” approach, incorporating interference-avoidance technology employed by Part 15 devices.¹³⁵ The service rules permit any number of

¹²⁸ See, e.g., *Teledesic, LLC v. FCC*, 275 F.3d 75, 83–87 (D.C. Cir. 2001).

¹²⁹ See *In re Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, Report and Order*, 10 F.C.C.R. 4695, ¶¶ 29–39 (Feb. 3, 1995).

¹³⁰ *Id.* ¶ 36.

¹³¹ *Id.* The FCC’s recent proposal to enhance flexibility for this licensed service depends on including additional safeguards to protect unlicensed users from increased interference. *In re Amendment of the Commission’s Part 90 Rules in the 904–909.75 ad 919.75–928 MHz Bands, Notice of Proposed Rulemaking*, 21 F.C.C.R. 2809, ¶¶ 36–38 (Mar. 1, 2006).

¹³² *In re Wireless Operations in the 3650–3700 MHz Band; Rules for Wireless Broadband Services in the 3650–3700 MHz Band; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band; Amendment of the Commission’s Rules With Regard to the 3650–3700 MHz Government Transfer Band, Report and Order and Memorandum Opinion and Order*, 20 F.C.C.R. 6502 (Mar. 10, 2005).

¹³³ *Id.* ¶¶ 4–5

¹³⁴ *Id.* ¶¶ 5–11.

¹³⁵ *Id.* ¶¶ 25–27.

licensees within a geographic area and imposes upon all of them an obligation to coordinate with one another in good faith to avoid interference.¹³⁶ Rather than rely on traditional frequency coordination committees, the FCC ordered that any equipment to be certified include “contention based protocols” to resolve conflicts among interfering transmitters.¹³⁷ Finally, while maintaining significant exclusion zones around preexisting “primary” licensees, the FCC encouraged the primary licensees to negotiate with the newly authorized licensees for non-interfering uses.¹³⁸

The Commission has taken some modest steps to alter its traditional spectrum hierarchy. At the same time, however, it has also authorized significant new licensed services over the last few years without any serious consideration of permitting an unlicensed underlay, or of allocating use of the band for unlicensed or other non-exclusive services.¹³⁹ The FCC has also left several highly contested proposals to rethink spectrum access waiting in limbo. These proposals include permitting non-interfering use on a dynamic, real-time basis,¹⁴⁰ or allowing use of the “guard bands” and “white spaces” of the television broadcast service.¹⁴¹

Property approach advocates complain that the FCC abandoned the allocation of licenses on an exclusive basis in favor of non-exclusive allocations,¹⁴² but that argument has little basis in reality. A proper understanding of the First Amendment framework, as well as an examination of the public interest framework imposed by the Communications Act, make clear that the FCC should have the sort of pro-non-exclusive use bias that supporters of the property school complain already exists. While this does not require the abolition of exclusive licensing, as some in both the property and commons camps have argued, the FCC has a long way to go before it can properly realign the spectrum hierarchy from the traditional ladder to an FAE regime encouraging non-exclusive use.

¹³⁶ *Id.* ¶¶ 24–30.

¹³⁷ *Id.* ¶ 27.

¹³⁸ *Id.* ¶¶ 25–30.

¹³⁹ *See, e.g., In re Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, Report and Order*, 18 F.C.C.R. 25,162 (Oct. 16, 2003).

¹⁴⁰ *See Interference Temperature NOI, supra note 29, ¶ 2; see also In re Facilitating Opportunities for Flexible, Efficient, and Reliable Spectrum Use Employing Cognitive Radio Technologies, Report and Order*, 20 F.C.C.R. 5486, ¶ 3 (Mar. 10, 2005) (adopting far more modest liberalization of rules governing software defined radios than initially proposed).

¹⁴¹ *In re Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, Notice of Proposed Rulemaking*, 19 F.C.C.R. 10,018, ¶¶ 1, 10 (May 13, 2004).

¹⁴² *See, e.g., Thomas W. Hazlett & Matthew L. Spitzer, Advanced Wireless Technologies and Public Policy*, 79 S. CAL. L. REV. 595, 595–64 (2006).

A. The First Amendment Framework

As a general rule, discretionary licenses for the right to communicate are repugnant to the First Amendment.¹⁴³ The Supreme Court has permitted the federal government to restrict access to spectrum to a handful of government-selected licensees only because unregulated use of the electromagnetic spectrum by everyone would make the use of the spectrum by anyone ineffective.¹⁴⁴ In other words, because far more people wish to use the electromagnetic spectrum for various purposes than the medium can support, the government must limit the number of licenses available to the public. The need to manage the use of spectrum to avoid harmful interference among all would-be users has become known as the “scarcity rationale.”¹⁴⁵

The scarcity rationale does not give the government unlimited authority to curtail speech. To the contrary, because the government must suppress rights of the vast majority of Americans to speak directly through the electromagnetic spectrum, the scarcity rationale imposes on the government a fundamental responsibility to protect the public’s “collective right to have the medium function consistently with the ends and purposes of the First Amendment.”¹⁴⁶ The Supreme Court has found that the public interest standard underlying the Communications Act “necessarily invites reference to First Amendment principles, and, in particular, to the First Amendment goal of achieving ‘the widest possible dissemination of information from diverse and antagonistic sources.’”¹⁴⁷

It should be noted that few doctrines in the annals of First Amendment jurisprudence have attracted so many critics and predictors of its imminent demise.¹⁴⁸ The courts and Congress, however, have consistently rejected attacks on the scarcity rationale.¹⁴⁹ As long as the government maintains that interference creates a need to award exclusive rights to radio frequencies it confers an obligation to protect the speech rights of those excluded

¹⁴³ See *Watchtower Bible & Tract Society of New York, Inc. v. Village of Stratton*, 536 U.S. 150, 161–64 (2002) (holding that a requirement of registration to make a public speech is incompatible with the First Amendment guarantees of free speech and assembly).

¹⁴⁴ See *NBC v. United States*, 319 U.S. 190, 226 (1943); *Fed. Radio Comm’n v. Nelson Bros.*, 289 U.S. 266, 285–86 (1933).

¹⁴⁵ See *Red Lion Broad. Co. v. FCC*, 395 U.S. 367, 390 (1969) (“Because of the scarcity of radio frequencies, the Government is permitted to put restraints on licensees in favor of others whose views should be expressed on this unique medium.”).

¹⁴⁶ *Id.*

¹⁴⁷ *FCC v. Nat’l Citizens Comm. for Broad.*, 436 U.S. 775, 795 (1978) (internal citations omitted).

¹⁴⁸ See, e.g., Jim Chen, *Liberating Red Lion From the Glass Menagerie of Free Speech Jurisprudence*, 1 J. TELECOMM. & HIGH TECH L. 293 (2002); Glen O. Robinson, *The Electronic First Amendment: An Essay for the New Age*, 47 DUKE L.J. 899 (1998); Christopher S. Yoo, *The Rise and Demise of the Technology-Specific Approach to the First Amendment*, 91 GEO. L.J. 245 (2003).

¹⁴⁹ See, e.g., *Turner Broad. Sys., Inc. v. FCC*, 512 U.S. 622, 637–38 (1994).

from use of these frequencies under the general requirement that issuance of any license serve the public interest.¹⁵⁰ At the same time, however, striking the proper balance on how to protect these rights remains in the hands of the FCC, subject to the direction of Congress.¹⁵¹

The precise dimensions of the limitations on Congress and the FCC's ability to exclude non-interfering uses remain unexamined.¹⁵² On the one hand, determining how many licenses to grant for a particular service in a particular geographic area is a quintessential "expert agency" question that Congress intended to entrust to the FCC. On the other hand, the Constitution does not permit Congress (or its delegates) to override the First Amendment rights of would-be speakers purely in the name of economic efficiency. This suggests that the power to regulate under the scarcity rationale solely to exclude would-be speakers has limits.

Stuart Minor Benjamin argues that government restriction on the use of radio frequencies should be subject to an "intermediate scrutiny" standard of review.¹⁵³ Under this standard, Congress and the FCC must justify their decisions to restrict the speech rights of individuals to use spectrum with a compelling government purpose; suppression of speech must be incidental to the government's goal and the regulation must burden no more speech than necessary.¹⁵⁴

Application of this principle to the FCC's licensing regime argues for a rather simple rule: where technology allows users to speak through the electromagnetic spectrum without interference to the productive uses of higher-powered licensed services, the FCC has no right preventing them from speaking. Economic grounds alone are not a compelling government interest, and thus cannot support exclusive licensing where the threat of interference does not exist. Therefore, under the First Amendment analysis, arguments that prohibiting speech by vesting property rights in licensees, or that permitting use of unlicensed spectrum somehow constitutes unjust enrichment to equipment manufacturers, must fail.¹⁵⁵

¹⁵⁰ *Red Lion*, 395 U.S. at 389–90.

¹⁵¹ See *FCC v. WNCN Listeners Guild*, 450 U.S. 582, 593–603 (1981) (explaining that the courts defer to the Commission regarding the best service of the public interest for concerns delegated to it by Congress).

¹⁵² See generally, Stuart Minor Benjamin, *The Logic of Scarcity: Idle Spectrum As First Amendment Violation*, 52 DUKE L. J. 1 (2002) [hereinafter *Idle Spectrum*]; see also Stuart Minor Benjamin, *Spectrum Abundance and the Choice Between Public and Private Control*, 78 N.Y.U. LAW. REV. 2007 (2003) [hereinafter *Spectrum Abundance*].

¹⁵³ Benjamin, *Idle Spectrum*, *supra* note 152, at 6.

¹⁵⁴ See *id.*

¹⁵⁵ See, e.g., Ellen P. Goodman, *Spectrum Equity*, 4 J. TELECOMM & HIGH TECH L. 217 (2005). As discussed in Part III, these arguments fail on their merits. Even if reasonable minds may differ on the most beneficial economic policy, however, the failure of property proponents to address the First Amendment issues dooms the property argument as simply lying outside the feasible set.

The Supreme Court has explicitly found that the First Amendment prohibits the government from granting exclusive rights in communications media unless the physical characteristics of the medium require exclusivity as a precondition of productive use. In *City of Los Angeles v. Preferred Communications*, Preferred Communications did not take part in an auction for an exclusive cable franchise.¹⁵⁶ Nevertheless, it applied for a franchise in competition with the winner of the auction, and the City of Los Angeles denied the application.¹⁵⁷ The district court upheld the power of the city to award an exclusive license, but the Ninth Circuit Court of Appeals reversed on First Amendment grounds.¹⁵⁸ The Supreme Court remanded for further fact-finding on the question of whether physical limitations required the city to limit the number of franchises.¹⁵⁹ Finally, the Court explicitly held that the desire of the city to maximize revenue or maximize economic efficiency did not permit limiting the ability of citizens to speak through the new medium any more than the city could limit, in the name of economic efficiency, the number of newspapers circulated.¹⁶⁰ In other words, where the laws of physics no longer require exclusivity, exclusivity cannot be justified on economic or efficiency grounds alone.

It is not suggested that technology has advanced to the point where the spectrum may accommodate all who wish to use it such that the days of exclusive licensing have passed.¹⁶¹ Indeed, many users, particularly those in the public safety sector, will continue to demand exclusivity for the foreseeable future. Those applications will still require that the FCC impose necessary public interest obligations and service rules in order to ensure that these exclusive licenses serve the “public interest, convenience and necessity” as required by Section 307 and Section 310(d) of the Communications Act.¹⁶²

The ability of technology to provide unlicensed access to all citizens under some conditions does not render the underlying basis of *Federal Radio Commission v. Nelson Brothers* or *NBC v. United States* obsolete.¹⁶³ At the

¹⁵⁶ *City of Los Angeles v. Preferred Commc'ns*, 476 U.S. 488, 490 (1986).

¹⁵⁷ *Id.* at 490 and n.1.

¹⁵⁸ *Id.* at 492.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.* at 494–95.

¹⁶¹ *Cf.* *FCC v. League of Women's Voters of Cal.*, 468 U.S. 364, 376 n.11 (1984) (observing that technological advances might someday render exclusive licensing obsolete).

¹⁶² *See* 47 U.S.C. §§ 307, 310(d) (2000). Furthermore, even if scarcity were eliminated as a matter of law, the Commission would still be required to impose public interest obligations on broadcasters and others, as licensed entities owe their superior position to government exclusivity. *See* *Red Lion Broad. Co., Inc. v. FCC*, 395 U.S. 367, 400 (1969).

¹⁶³ *Fed. Radio Comm'n v. Nelson Bros.*, 289 U.S. 266 (1933) (holding that national regulation of broadcasting is not only appropriate but essential to the efficient use of radio); *NBC v. United States*, 319 U.S. 190 (1943) (finding that government control of spectrum and the rules it implemented pursuant to that control were justified by the scarcity of the

same time, however, the fact that some high power applications require exclusive licensing does not eliminate the First Amendment rights of citizens to use electromagnetic spectrum in a non-interfering way.

To analogize, the government may impose reasonable time and place restrictions on First Amendment activities on public property, but the government may not exclude more speakers than necessary. The Constitution would not tolerate an auction for rights to protest in a town square on the grounds that the auction would increase government revenue or to ensure that only those who *most value* the right to speak publicly have the opportunity to do so. Such a scheme could not circumvent the First Amendment by arguing that winners at auction would resell or rent to other speakers if it were genuinely more efficient to allow just anyone to speak.¹⁶⁴ To the contrary, in the real world context, where genuine physical limitations and well understood principles of private ownership are present, the Supreme Court has found a state interest and authority to open private property to public speech.¹⁶⁵

It makes no sense as a matter of First Amendment jurisprudence, therefore, to posit that the First Amendment rights of the vast majority of citizens to speak directly to one another, rather than through a government-licensed intermediary, can arbitrarily be circumscribed in the name of economic efficiency. Even under the rational basis level of scrutiny applied by courts reviewing decisions by Congress and the FCC, the Supreme Court has found that “[t]he ‘public interest’ standard necessarily invites reference to First Amendment principles.”¹⁶⁶ Indeed, the FCC has a fundamental responsibility to protect the public’s “collective right to have the medium function consistently with the ends and purposes of the First Amendment.”¹⁶⁷ Yet licensees invariably raise First Amendment free speech claims and Fifth Amendment takings claims whenever the FCC considers permitting new, non-exclusive uses to coexist with licensed uses. The FCC and courts have had no difficulty rejecting these claims, but incumbents raise them so often that a brief recitation of the grounds for rejecting the claims seems warranted.

spectrum). Where unlicensed access reaches the point of scarcity, the scarcity rationale prevails. *See* explanation of the scarcity rationale, *supra* note 145.

¹⁶⁴ *Cf.* *United States Postal Serv. v. Council of Greenburgh Civic Ass’n.*, 453 U.S. 114, 141–42 (1981) (White, J., concurring) (stating that a user fee is legitimate, even if it cuts off access to public forum, provided the fee is used for recovery of costs).

¹⁶⁵ *See Pruneyard Shopping Ctr. v. Robins*, 447 U.S. 74, 88 (1980).

¹⁶⁶ *FCC v. Nat’l Citizens Comm. for Broad.*, 436 U.S. 775, 795 (1978) (internal citations omitted).

¹⁶⁷ *See Red Lion Broad. Co., Inc. v. FCC*, 395 U.S. 367, 390 (1969). *See also* Benjamin, *Idle Spectrum*, *supra* note 152, at 110–11.

B. Constitutional Objections to Non-Interfering Uses By Licensees

The vast majority of *Red Lion* critics do not object to the core argument of the scarcity rationale that the government must limit the users of radio frequency to a handful of licensees. Rather, critics object to the idea that the government has authority to impose any rules or obligations beyond those needed to protect the chosen few licensees from interfering with one another. In particular, critics maintain that to the extent First Amendment rights exist in spectrum use, they exist solely in the hands of licensees.

In the mass media context, these critics argue that requiring broadcasters to provide access to their spectrum,¹⁶⁸ obliging broadcasters to act as trustees in providing service to their local communities,¹⁶⁹ and maintaining ownership limits to ensure the survival of locally-oriented news each violate the licensees' First and Fifth Amendment rights.¹⁷⁰ Similarly, licensees and proponents of a property regime for spectrum licenses raise similar First and Fifth Amendment arguments in opposition to proposals to authorize new unlicensed underlays.¹⁷¹

The First Amendment claim against permitting new, non-exclusive uses fails on several grounds. Even assuming that *Red Lion* and its progeny do not apply, exclusive licensees suffer neither a diminution of their own speech nor forced speech of others. They merely face potential competition from additional speakers, the antithesis of a First Amendment violation.¹⁷² More to the point, however, *Red Lion* does apply.¹⁷³ Accordingly, regulation of licensees to promote the First Amendment interests of non-licensees furthers the goals of the First Amendment. This precludes any claim of exclusivity on the part of licensees, since, in the words of the Supreme Court, "the Government could surely have decreed that each frequency should be shared among all or some of those who wish to use it"¹⁷⁴

The Fifth Amendment takings claim fails on the express language of the Communications Act and long-standing Supreme Court precedent. The Communications Act provides no fewer than three times that a licensee has no property interest in a license.¹⁷⁵ To avoid any argument that distribution of licenses by auction somehow changed this presumption, the provision providing the FCC with auction authority explicitly states that distribution by auction creates no property, does not impact the ability of the FCC to reclaim or regulate licenses, and that a license acquired via auction has no

¹⁶⁸ 47 U.S.C. §§ 312, 315 (2000) (providing access to political candidates).

¹⁶⁹ *Cf.* Office of Commc'ns of United Church of Christ v. FCC, 359 F.2d 994, 1004-05 (D.C. Cir. 1966).

¹⁷⁰ See sources cited *supra* note 148.

¹⁷¹ See, e.g., Second UWB R&O, *supra* note 91.

¹⁷² *Assoc. Press v. United States*, 326 U.S. 1 (1945).

¹⁷³ See *Red Lion*, 395 U.S. at 389-90.

¹⁷⁴ *Id.* at 390-91.

¹⁷⁵ 47 U.S.C. §§ 301, 304, 309(h) (2000).

greater or lesser rights than a license acquired by any other means.¹⁷⁶ The Supreme Court has not only upheld this interpretation, it has held that Congress had the authority to retroactively regulate and deny renewal of licenses obtained prior to passage of the Federal Radio Act in 1927.¹⁷⁷

On the other hand, critics of the First Amendment argument against perpetual exclusive licenses have generally attacked a strawman. Such arguments posit a mutually exclusive approach between “commons” and “property” wherein the critics of unlicensed spectrum argue that technology has not yet eliminated the need for exclusive licensing to use the spectrum productively. Therefore, they reason, the First Amendment claims of commons proponents must fail in their entirety.¹⁷⁸ These arguments appear to hinge on the idea that if any vestige of the scarcity argument remains—to wit, that exclusivity remains necessary to ensure certain productive high power uses of spectrum—it follows that all other First Amendment concerns are somehow eliminated.

As discussed above, however, there is no contradiction between recognizing that certain types of high power operation require exclusivity, while applying standard First Amendment principles to the efforts of others to speak in ways that, by their very nature, do not create harmful interference. This is what ultimately distinguishes the First Amendment claims of those communications via Part 15 devices from those, for example, made by pirate radio operators.¹⁷⁹ The choice here is not whether the FCC should permit five licensees or ten licensees, but whether to foreclose the right of everyone else to speak through spectrum for the benefit of a handful of authorized licensees. Where the FCC must limit access to spectrum, the traditional calculus of *NBC v. United States* is applied: the FCC has broad discretion to consider how best to promote the public interest while still protecting the First Amendment rights of the vast majority of citizens excluded from licenses.¹⁸⁰ But, as in the instance of the competitive cable overbuilder in *Preferred Communications*, where conditions do not require exclusivity and its accompanying suppression of speech, the government cannot invoke its general interest in promoting economic efficiency or maximizing public revenue as a justification for government action.¹⁸¹

¹⁷⁶ §309(j)(6)(B)–(D).

¹⁷⁷ See *Fed. Radio Comm'n v. Nelson Bros.*, 289 U.S. 266, 282 (1933).

¹⁷⁸ See, e.g. *Jackson, et al*, *supra* note 24, at 247.

¹⁷⁹ See, e.g., *United States v. Szoka*, 260 F.3d 516, 519 n.2 (6th Cir. 2001) (explaining that illegal microbroadcasters are also called “pirates” by the FCC and the National Association of Broadcasters.).

¹⁸⁰ See *NBC v. United States*, 319 U.S. 190, 224–27 (1943); see also *FCC v. WNCN Listeners Guild*, 450 U.S. 582, 596 (1981).

¹⁸¹ Cf. *City of Los Angeles v. Preferred Commc'ns*, 476 U.S. 488, 496 (1986). Where colorable First Amendment issue exists, the mere rationality of government action will not suffice. Instead, the intermediate scrutiny standard will apply, and the government must

Defenders of the property approach have argued there is no difference, from a First Amendment standpoint, between a cellular system allowing 100 million callers to speak freely to each other and greater access to unlicensed spectrum.¹⁸² The problem with this argument is demonstrated by a few real world examples. A subscriber to Cingular's Internet service cannot use PayPal for online payments, but must instead use a service designated by Cingular.¹⁸³ A disgruntled customer seeking to create a new wireless network that would permit such access cannot build a competing network to patronize an alternate pay service on any licensed band. Similarly, a person wishing to broadcast local video or audio programming to his or her neighborhood has no right to operate on the radio or television broadcast bands. That same person can, however, via unlicensed spectrum and streaming technology, create the equivalent of a local radio or television network. Even subscription to a local cellular phone company does not provide this level of direct communication with a neighbor, as the wireless operators reserve the right to limit streaming media through their systems.

C. Public Policy Favors a Shift to a "First Among Equals" Approach

First Amendment principles alone, therefore, would impose upon the FCC an obligation to promote more unlicensed access to spectrum. Significantly, however, an FAE approach that favors a gradual increase in the ability of people to use unlicensed wireless services in addition to licensed services serves the public interest policies identified by the Communications Act and the FCC.¹⁸⁴ As an initial matter, the FAE approach has the advantage of working within the context of existing law. Propertization, assuming it is even constitutional, would demand statutory changes which, as one supporter of a property approach has lamented, appear profoundly unlikely.¹⁸⁵ Proposals to test property versus commons approaches for re-

prove a compelling state interest in favor of their action. *Id.*; see also sources cited *supra* note 17.

¹⁸² See, e.g., Dale Hatfield & Phil Weiser, *Toward Property Rights In Spectrum: The Difficult Policy Choices Ahead* (CATO Inst., Aug. 17, 2006), available at http://www.cato.org/pub_display.php?pub_id=6588; Speta, *supra* note 48.

¹⁸³ *Debate Continues over Internet's Future*, NEWSFACTOR.COM, Aug 23, 2006, available at http://www.newsfactor.com/news/Debate-Continues-over-Internet-s-Future/story.xhtml?story_id=11300ADUIVFZ.

¹⁸⁴ See, e.g., *In re Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets*, *Policy Statement*, 15 F.C.C.R. 24, 178 (Nov. 9, 2000). In its spectrum *Policy Statement*, the Commission enunciated a public policy of promoting the public interest by "permit[ting] spectrum to flow more freely among users and uses in response to economic demand." *Id.* ¶ 1.

¹⁸⁵ See Speta, *supra* note 48, at 187-93.

structuring of band allocation likewise require either legislation or radical alteration of the FCC's existing rules.¹⁸⁶

By contrast, the FCC can move forward with the FAE approach fairly easily, by resolving the pending Interference Temperature docket and issuing a policy statement similar to its policy statements promoting flexibility in wireless services.¹⁸⁷ Compliance can be safeguarded by requiring mitigation measures, such as the inclusion of interference-avoidance and contention based protocols already required in various proceedings.¹⁸⁸ The FCC could also mandate new measures to eliminate the need to create new causes of action for enforcement, such as requiring devices to recognize a "cease operation" signal or requiring devices to receive permission to operate from some beacon or database.¹⁸⁹

The Communications Act contains a number of competing goals that cumulatively serve the public interest.¹⁹⁰ Traditionally, these have included promoting increased media diversity and heightened competition.¹⁹¹ Recently, Congress amended the Act to eliminate discrimination in the deployment of communications service and to promote the deployment of broadband services to all Americans.¹⁹² Section 257 of the Communications Act, which requires the FCC to review barriers to entry by small businesses into the telecommunications industry every three years, and to use its regulatory powers to reduce or eliminate these barriers, contains a concise summary of these public interest goals to guide the FCC in its Triennial Review: "in carrying out subsection (a) of this subsection, the

¹⁸⁶ See Yochai Benkler, *Some Economics of Wireless Communication*, 16 HARV. J. L. & TECH. 25, 66–67 (2002).

¹⁸⁷ See *infra* Part III.

¹⁸⁸ See, e.g., *In re* Wireless Operations in the 3650–3700 MHz Band; Rules for Wireless Broadband Services in the 3650–3700 MHz Band; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band; Amendment of the Commission's Rules With Regard to the 3650–3700 MHz Government Transfer Band, *Report and Order and Memorandum Opinion and Order*, 20 F.C.C.R. 6502 (Mar. 10, 2005); *In re* Revision on Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, *Report and Order*, 18 F.C.C.R. 24,484 (Nov. 12, 2003).

¹⁸⁹ Pierre de Vries, *Populating the Vacant Channels* 10 (New America Found., Working Paper No. 14, 2006).

¹⁹⁰ See, e.g., 47 U.S.C. §§ 157, 158, 160, 161, 201 (2000).

¹⁹¹ *FCC v. Nat'l Citizens Comm. for Better Broad.*, 436 U.S. 775, 780 (1978).

¹⁹² Telecommunications Act of 1996, 706, Pub. L. No. 104–104, § 104 (codified as amended at 47 U.S.C. §§ 151–57); *In re* Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities, *Policy Statement*, 20 F.C.C.R. 14,986 (Aug. 5, 2005).

Commission shall seek to promote the policies and purposes of this [Act] favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest, convenience and necessity.”¹⁹³ The FCC has repeatedly found that expanding Part 15 rules furthers the goals of encouraging new technologies and services to the public.¹⁹⁴

The paucity of service and lack of ownership opportunities for minority communities further highlights the importance of unlicensed access. Providers of broadband and other advanced telecommunications services generally focus their attention on the wealthiest markets.¹⁹⁵ Furthermore, although the Communications Act directs the Commission to use auctions to promote “economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women,”¹⁹⁶ ownership of telecommunications facilities remains excessively concentrated in the hands of a few, large corporations.¹⁹⁷

Despite the Commission’s consistent efforts to develop bidding criteria that will promote minority and small business ownership, spectrum auctions continue to fail at these goals. A recent Center for American Progress publication analyzing ten years of FCC auction data concluded that spectrum auctions increasingly serve to entrench incumbent interests and discourage disruptive new entrants and ownership by minority-owned businesses.¹⁹⁸ The results of the FCC’s most recent spectrum auction proved consistent with these empirical studies of past auctions. In the 2006 Ad-

¹⁹³ 47 U.S.C. § 257(b) (2000).

¹⁹⁴ See, e.g., Amendment of the Commission’s Rules to Provide for Operation of Unlicensed NII Devices in the 5 GHz Range, *Report and Order*, 12 F.C.C.R. 1576, ¶¶ 8–18 (Jan. 9, 1997) (finding that expanding unlicensed access furthered interest of developing new technologies, new services, new competitors, deployment of advanced telecommunications capabilities to all Americans—with an emphasis on rural and educational uses—and helped fulfill the Commission’s obligations under Section 257 to promote entry by small businesses and to enhance diversity of information sources); *In re* Section 257 Proceeding to Identify and Eliminate Market Entry Barriers for Small Businesses, *Report*, 12 F.C.C.R. 16,802, ¶¶ 202–05 (May 8, 1997). See also Carter, et al., *supra* note 52.

¹⁹⁵ See Leonard M. Banes, *Deregulatory Injustice and Electronic Redlining: The Color of Access to Telecommunications*, 56 ADMIN. L. REV. 263, 268(2004).

¹⁹⁶ 47 U.S.C. § 309(j)(3)(C).

¹⁹⁷ See, e.g., Eli M. Noam, *Deregulation and Market Concentration: An Analysis of Post-1996 Consolidation*, 58 FED. COMM. L. J. 539, 541–43 (2006) (outlining empirical evidence of the concentration of ownership in the telecommunications field).

¹⁹⁸ Gregory F. Rose & Mark Lloyd, *The Failure of FCC Spectrum Auctions* (Ctr. for Am. Progress, May 2006), available at http://www.americanprogress.org/atf/cf/%7BE9245FE4-9A2B-43C7-A521-5D6FF2E06E03%7D/SPECTRUM_AUCTIONS_MAY06.PDF; see also Leonard M. Banes & C. Anthony Bush, *The Other Digital Divide: Disparity In the Auction of Wireless Telecommunications*, 52 CATH. U. L. REV. 351 (2003).

vanced Wireless Services Auction, the FCC offered for bid the largest block of licenses in desirable frequencies below 2 GHz in years.¹⁹⁹ Incumbent wireless carriers, as well as a consortium consisting of the two largest incumbent cable operators and one of the largest incumbent wireless carriers, won the vast majority of licenses.²⁰⁰

Empirical evidence to date, therefore, suggests that spectrum auctions do little to create competition or provide opportunities for minority ownership. To the contrary, the existing state of the wireless market and the last ten years of auction data indicate that spectrum auctions are inimical to promoting competition and diversity of ownership. This should raise grave concerns for the FCC, as promoting competition and diversity of ownership are core public interest goals of the Communications Act.

By contrast, granting unlicensed access would create immediate opportunities for deployment in any community by any entity, particularly communities economically unattractive to incumbents. These communities will be able to deploy needed systems themselves. The FCC has observed how unlicensed access removes regulatory barriers to minority and small business ownership of telecommunications facilities.²⁰¹ The Commission also recognizes that expanding unlicensed access benefits Americans in both urban and rural areas.²⁰² Others, including the New America Foundation, have extensively documented the benefits of unlicensed access.²⁰³ Unli-

¹⁹⁹ See Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006, *Public Notice*, 21 F.C.C.R. 794 (Jan. 31, 2006).

²⁰⁰ Paul Davidson, *Wireless Carriers Snap Up Federal Airwaves Licenses*, USA TODAY, Sept. 14, 2006, at 2B, available at http://www.usatoday.com/tech/wireless/2006-09-14-spectrum-usat_x.htm?POE=TECISVA.

²⁰¹ See *In re* Section 257 Triennial Report To Congress, Identifying and Eliminating Market Entry Barriers For Entrepreneurs and Other Small Businesses, *Report*, 19 F.C.C.R. 3034, ¶¶ 140–44 (Dec. 31, 2003); *In re* Section 257 Triennial Report To Congress, Identifying and Eliminating Market Entry Barriers For Entrepreneurs and Other Small Businesses, *Report*, 15 F.C.C.R. 15,376, ¶ 139 (July 28, 2002).

²⁰² See, e.g., Carter, et al., *supra* note 52 at 22–23; Comm’r Kathleen Q. Abernathy, FCC, The Harvest: Keynote Remarks at the Wireless Communications Association International Annual Conference (June 2, 2004); Comm’r Jonathon S. Adelstein, FCC, WISP Forum, S.D. School of Mines and Tech. (May 25, 2004).

²⁰³ See, e.g., Matt Barranca, *Unlicensed Wireless Broadband Profiles: Community, Municipal and Commercial Success Stories* (New Am. Found. Spectrum Policy Program, Washington, D.C., Apr. 2004); William Lehr, *Dedicated Lower Frequency Unlicensed Spectrum: The Economic Case for Dedicated Unlicensed Spectrum Below 3 Ghz* (New Am. Found., Spectrum Series Working Paper No. 9, 2004); J.H. Snider, *Reclaiming the Vast Wasteland: the Economic Case for Reallocating the Unused Spectrum (White Space) Between Channel 2 and 51 to Unlicensed Service* (New Am. Found., Working Paper No. 13, 2006); see also *In re* Establishment of and Interference Temperature Metric to Quantify and Manage Interference and to Expand Available Unlicensed Operation in Certain Fixed, Mobile and Satellite Frequency Bands, *Ex Parte Comments of Prometheus Radio Project, Consumer Federation of America, Public Knowledge, Champaign-Urbana Community Wireless Project, Benton Foundation, Electronic Frontier Foundation, New America Found-*

censed access has become a mainstay of cities' efforts to provide affordable broadband services, so-called "muniwireless" or "unwired" cities.²⁰⁴ Unlicensed spectrum also plays an increasing role in public safety. Unlicensed devices provide interoperable voice, video, and data systems for public safety entities,²⁰⁵ and proved highly flexible and useful as a "force multiplier" in the aftermath of Hurricane Katrina.²⁰⁶

Opponents of enhancing unlicensed access in favor of a property regime frequently counter that the level of government supervision and restriction on use needed for managing spectrum as a commons on a large scale would eliminate the advantages offered by common management. For example, despite making a strong argument that it violates the First Amendment for the government to keep spectrum idle merely to benefit incumbents, Benjamin supports a property-rights scheme and rejects the arguments of the commons school on the grounds that a commons scheme would inevitably result in a government-run network.²⁰⁷ Many critics of enhancing public access to spectrum by gradual expansion of Part 15 label the "commons" as "communist" and "property" as "free market," a tactic designed to sway policymakers with little technical or economic background who nevertheless hold deep feelings for the ideals of a free market and an ownership society.²⁰⁸ This tactic is echoed by many of the critics of enhancing public access to spectrum by gradual expansion of Part 15.²⁰⁹

It is unclear, however, why general access to wireless translates into some sort of government-run network. The crux of the argument against enhancing unlicensed access appears to be three-pronged: (a) under Part 15, the FCC sets technical parameters for devices and must certify that a device will comply with the power limitations and other specifications; (b) networks using unlicensed spectrum require some coordination, either voluntary or embedded as a technical feature in the device, to avoid interfer-

ation, The Dandin Group, Wireless Tech Radio and NYCWireless, ET Docket No. 03-237, at 37 (June 18, 2004) (accessible via FCC Electronic Comment Filing System).

²⁰⁴ Barranca, *supra* note 203, at 4–10, 19. For more information on "municipal wireless broadband projects worldwide that are funded or supported by cities and towns," see the Muniwireless Web site at <http://muniwireless.com/about/> (last visited Nov. 12, 2006).

²⁰⁵ See Barranca, *supra* note 203, at 17–18.

²⁰⁶ See Jeff R. Allen, Radio Response's Activities Following Hurricane Katrina, Feb. 24, 2006, <http://www.nella.org/jra/dr/katrina/katrina-final-report.html#s31> (follow "Incident Command System" hyperlink under "Table of Contents").

²⁰⁷ Benjamin, *Spectrum Abundance*, *supra* note 152.

²⁰⁸ Harold Feld & Gregory Rose, *Metaphors, Myths, and Manipulation: How Telecommunications Consolidation is Rationalized* 24–25 (Feb. 24, 2006) (unpublished manuscript, available at <http://web.si.umich.edu/tprc/papers/2006/595/TPRC%20Current%20Draft%209-1.pdf>).

²⁰⁹ See *In re Commission Seeks Public Comment on Spectrum Policy Task Force Report, Reply Comments of IEEE 802.18 on the Report of the Commission's Spectrum Policy Task Force*, ET Docket No. 02-125, at 1, n.3 (Jan. 27, 2003) (accessible via FCC Electronic Comment Filing System).

ence with one another; and (c) networks must interconnect and run common protocols to communicate.²¹⁰

However, these characteristics apply equally to licensed wireless networks, unlicensed networks, and wireline networks. The FCC sets power limits and other technical specifications for licensed services as well as unlicensed services. Interconnection requires both coordination and common protocols. In the unlicensed space, one finds a variety of both proprietary and open standards—all developed by private parties. If anything, unlicensed spectrum provides a less controlled environment for these protocols than the licensed environment, given the greater number of uses, potential users, and low barriers to entry. Indeed, the FCC's most recent foray into non-exclusive licensing, the 3650–3700 MHz service, makes abundantly clear that the FCC has no interest in setting a single, government standard.²¹¹ To the contrary, although various industry parties have asked the FCC to authorize a particular protocol as the official coordination technique,²¹² the FCC has so far refused to do so. Moreover, to the extent property advocates argue that the FCC should cease to certify and set limits for licensed services, this constitutes a radical departure from the current regime. Yet, as some supporters of the property regime have recently admitted, the government cannot be easily removed from regulation even in a property regime.²¹³ To the extent unlicensed networks are “government networks,” licensed networks are equally “public” rather than “private” in nature.

Some additional public policy arguments frequently raised against expanding any further general access to spectrum deserve brief rebuttal. For example, it has been argued that increasing unlicensed access to spectrum constitutes a windfall for equipment manufacturers in violation of the windfall provisions of Section 309.²¹⁴ This argument is based on the notion that equipment manufacturers will make money if the FCC enhances the ability to use unlicensed spectrum, constituting a windfall. By this definition, of course, any enhancement of an ability to use spectrum produces a windfall. We do not think of Siemens, Motorola, or other equipment manufacturers as enjoying a windfall from the licenses acquired by Cingular Wireless or other licensees. If anything, the windfall effect is higher where a licensee acquires a license at auction, and thus, creates a new equipment market. At least in the unlicensed case, equipment riders are not free riders.

²¹⁰ See Benjamin, *Spectrum Abundance*, *supra* note 152.

²¹¹ *Id.* at 2053.

²¹² *Id.* at 2051–53.

²¹³ See Hatfield & Weiser, *supra* note 182.

²¹⁴ See 47 U.S.C. § 309(j)(4)(E) (2000) (requiring spectrum auction rules to be prescribed in such a way as to “require such transfer disclosures and antitrafficking restrictions and payment schedules as may be necessary to prevent unjust enrichment as a result of the methods employed to issue licenses and permits.”); Goodman, *supra* note 155, at 217.

At its heart, the idea that enhancing unlicensed use constitutes a windfall to equipment manufacturers appears to derive from the idea that spectrum rights belonged either to some licensee or to the government and that therefore any ability to make a profit without “paying” the previous “owner” is wrong. Both of these conceptions suffer from the same basic fallacy: the assumption that spectrum a thing. There cannot logically be a transfer of spectrum when no licensee ever had an exclusive right, nor can it be a windfall when it is a benefit open to everyone.

Similarly, the classic notion embodied in the Communications Act against “unjust enrichment” cannot apply when everyone has an equal opportunity to enjoy the benefit. Where a licensee receives an exclusive right for free or at a discount on a promise to provide a public service, then sells that right for a tidy profit, the concept of unjust enrichment is at the expense of the public is plain. But where everyone can claim the same right to get equipment certified, how is it “unjust” for those who chose to exercise that right to sell equipment at a profit?

There is also the economic objection that a property model would naturally provide incentives for deploying networks and valuing spectrum.²¹⁵ Such contentions are usually theoretical and disregard the empirical evidence that private parties and others continue to invest a great deal in unlicensed spectrum.²¹⁶ One need not resort to the more theoretical works of Cooper²¹⁷ and Benkler²¹⁸ to observe that the market continues to refute the notion that unlicensed spectrum access has economic utility and that it can coexist comfortably with exclusivity.²¹⁹

Finally, defenders of the property regime argue that if commons were genuinely efficient, spectrum property owners would create private commons that would capture these efficiencies.²²⁰ The idea that one can wish away the transaction costs associated with a private commons, or the impact such transaction costs would have on the economics of thin-margin ventures such as wireless broadband, and ignore the likelihood that such private owners would seek to limit uses to avoid competition, would normally lie in the world of humor or fantasy were it not repeated so of-

²¹⁵ Digital Age Communications Act (“DACA”), Report From the Working Group on New Spectrum Policy, The Progress and Freedom Foundation (March 2006), *available at* <http://www.pff.org> (follow “search” hyperlink; search “Report From the Working Group on New Spectrum Policy”; then follow “DACA Spectrum 1.0.doc” hyperlink).

²¹⁶ Dr. Mark Cooper, The Economics of Collaborative Production in the Spectrum Commons, Center for Internet and Society, Stanford Law School (Jan. 23–24, 2006) (unpublished manuscript, on file with the Center for Internet and Society, Stanford Law School), *available at* <http://cyberlaw.stanford.edu/blogs/cooper/archives/collaborative%20production.pdf>.

²¹⁷ *See id.*

²¹⁸ *See* YOCHAI BENKLER, THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM 1–2 (2006).

²¹⁹ *See* analysis of the possibility for coexistence, *supra* Part II(C).

²²⁰ *See* Hazlett & Spitzer, *supra* note 142.

ten.²²¹ Again, however, empiricism provides a convenient counter-proof. Numerous companies have sought to invest in development of new equipment for previously existing and newly created opportunities for non-exclusive spectrum use. Given the willingness to use unlicensed spectrum when freely available, it seems likely that the failure to see development of private commons results from flaws in the private aspect rather than the commons aspect of the private commons.

IV. APPLICATION OF THE FIRST AMONG EQUALS APPROACH

The FCC has an obligation to foster non-exclusive access to spectrum. When weighing the interests of licensed and unlicensed spectrum users, the FCC should adopt a bias in favor of maximizing the number of users who can utilize spectrum on a non-exclusive basis. When rejecting proposals for non-exclusive access, the FCC should properly place the burden of demonstrating a genuine risk of harmful interference on those seeking to block such access.²²²

As others have observed, defining “harmful interference” poses challenges.²²³ The courts have generally given the FCC flexibility, provided that the FCC adequately explains how it concluded whether potential interference is or is not “harmful.”²²⁴ As a general principle, the FCC has looked to the nature of the service to determine what constitutes “harmful” interference. When evaluating possible interference risk from the proposed Multichannel Video Data and Distribution Service, for example, the FCC determined that the primary licensee, a Direct Broadcast Service, was very reliable.²²⁵ Even so, users were unlikely to notice the small number of momentary interruptions that a worst case projection indicated might occur.²²⁶ When the FCC evaluated the potential entry of a new low power FM ser-

²²¹ This argument is rather like the old joke asking: How many Libertarians does it take to change a lightbulb? Answer: None. If the market wanted a working light bulb, the light bulb would be working. *Author unknown.*

²²² *Cf.* 47 U.S.C. § 157(a) (2000) (allocating upon those opposing proposed new technologies the burden of proving that the technologies are not in the public interest).

²²³ Margie, *supra* note 82.

²²⁴ *See Northpoint Technology, Ltd v. FCC*, 414 F.3d 61, 71 (D.C. Cir. 2005); *AT&T Wireless Services, Inc. v. FCC*, 270 F.3d 959, 963 (D.C. Cir. 2001)(remanding for better explanation).

²²⁵ *See Northpoint*, 414 F.3d at 66 (citing *In re* Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range; Amendment of the Commission’s Rules to Authorize Subsidiary Terrestrial Use of the 12.2–12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates; Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. to Provide A Fixed Service in the 12.2–12.7 GHz Band, *First Report and Order and Further Notice of Proposed Rule Making*, 16 F.C.C.R. 4096, ¶ 213 (Nov. 29, 2000)).

²²⁶ *See id.*

vice, the FCC considered that the majority of people listening to FM radio were accustomed to making minor adjustments in their antenna position as transitory environmental issues routinely interfere with reception.²²⁷

Accordingly, a first positive step in advancing efficient use of spectrum that maximizes the number of spectrum users is to adopt a suitable metric to determine the extent to which non-interfering underlays can coexist with exclusive licensed services. The Commission proposed just such a metric in 2003, the so-called “interference temperature.”²²⁸ Unsurprisingly, this metric met considerable resistance from incumbents. As a result, the FCC has allowed the proceeding to languish. Approving the interference temperature concept would serve as a good first step in broadening spectrum access. Similarly, protests from incumbent licensees²²⁹ have thwarted efforts to promote frequency-agile radios—so called cognitive or “smart” radios—that dynamically seek out available frequencies for communications.²³⁰ Likewise, efforts to use open frequencies in assigned bands that are either open from lack of interest or deliberately left unused as guard bands, the so-called “white spaces,” has met stiff resistance from incumbents eager to guard the scarcity of “their” spectrum.

When evaluating new opportunities such as smart radios or white spaces, the FCC should place a considerable burden on licensees to demonstrate that a real danger of harmful interference exists. Even then, the FCC should determine if some modification of the proposal or inclusion of post hoc remedies, such as a mandatory signal to cease operation or requiring a device to receive permission to operate from a beacon, can provide suitable mitigation against the risk of harmful interference. The objective should be to find a way to expand the public’s access to spectrum, rather than to try to find ways to maintain spectrum scarcity.

Finally, pursuant to 47 U.S.C. § 257, the FCC must evaluate the state of the telecommunications market every three years, and use its regulatory powers to remove barriers to entry by small businesses. This triennial re-

²²⁷ *In re* Creation of Low Power Radio Service, *Report and Order*, 15 F.C.C.R. 2205, ¶ 86 (Jan. 20, 2000).

²²⁸ See Interference Temperature NOI, *supra* note 29, ¶ 1.

²²⁹ See, e.g., Kelly Niknejad, *Cognitive radio: a smarter way to use radio frequencies*, Columbia News Service, Apr. 19, 2005, <http://jscms.jrn.columbia.edu/cns/2005-04-19/niknejad-smartradio> (“Even with the new technology, sharing is meeting resistance from those who have exclusive use of prime swaths of spectrum, or what cognitive radio proponents have dubbed ‘beachfront’ real estate.”). In March 2005, the Commission adopted rules to modify and clarify some of the authorization requirements for cognitive radios, but declined to adopt specific rules regarding the leasing of spectrum by licensees for use by cognitive radio operations. *In re* Facilitating Opportunities for Flexible, Efficient, and Reliable Spectrum Use Employing Cognitive Radio Technologies, *Report and Order*, 20 F.C.C.R. 5046 (Mar. 10, 2005), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-57A1.pdf

²³⁰ See Steven Ashley, *Cognitive Radio*, SCI. AM., Feb. 20, 2006, for an in-depth explanation of cognitive radio technology.

view process provides an excellent opportunity for the Commission to actively seek new opportunities for enhancing unlicensed access. This could include opening new bands to underlays, or simply increasing the available power or capabilities of already approved devices. By contrast, where licensees seek to open new spectrum to exclusive licensing, or pursue changes to enhance licensed services at the expense of non-exclusive services, the FCC should view such requests with disfavor. The Commission should favor exclusivity only where it is absolutely essential to serve the public interest. Public safety services, for example, should be given special protection. Even here, however, permanent prohibitions on sharing licensed and unlicensed services in the same band should be avoided. As technology will continue to permit greater sharing of access without the risk of harmful interference, a permanent ban may foreclose opportunities for synergies between exclusive and non-exclusive services.²³¹

V. CONCLUSION

The debate over spectrum reform has too often devolved into a false dichotomy between property and commons approaches to spectrum allocation. Rather than seek to impose sudden, radical change on the system of spectrum management, leading to unknown consequences, the FCC should adopt an evolutionary approach. By rethinking its spectrum hierarchy and elevating Part 15 as first among equals to licensed services, the FCC can affect real change in spectrum management without the need for new legislation or radical restructuring of existing bands. Furthermore, favoring non-exclusive uses over exclusive uses serves the First Amendment and the policies of the Communications Act. Such a change lies within the FCC's existing authority. Indeed, pending FCC proceedings like those discussed above present the FCC with an opportunity to take a first step in the evolutionary change that will facilitate a spectrum policy suitable for the Twenty-first Century.

²³¹ For example, public safety services in the 4.9 Ghz band have already benefitted from proximity to unlicensed 5.3 Ghz band. *In re* The 4.9 GHz Band Transferred from Federal Government Use, *Memorandum Opinion and Order*, FCC 04-265, WT Docket No. 00-32, ¶ 5 (Nov. 12, 2004).