Defining Radio Rights – Theory and Practice

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For years, academics and other researchers have been struggling with the question of how to define radio operating rights. As demand for spectrum grows, and as this conference demonstrates, many are seeking to develop a more robust theoretical framework for defining, assigning and enforcing such rights. It is equally important, however, to investigate current practice with respect to interference rights and consider how licensees resolve interference scenarios in today's marketplace. A framework cannot rely solely on analysis of the intractable large-scale issues such as the competing interference claims often contained in *de novo* spectrum allocation proceedings, but should explore how licensees, with the flexibility to do so, trade rights and resolve innumerable local interference issues.

To that end, what is it like to provide an itinerant, dynamic consumer service that operates 24/7, reaches 289 million Americans and depends on a difficult to manage resource that is federally regulated? Verizon Wireless has nearly 100 million customers, more than 1500 mobile licenses (not to mention thousands more microwave licenses), tens of thousands of cell sites transmitting on several frequencies and tens of thousands of miles of RF borders and boundaries. In order to constantly improve our service to the customer, and because interference is a costly drag on our network's capabilities, we must deal with issues of rights and interference on a daily basis. It is critical to our business that we're able to negotiate and resolve quickly most, if not all, rights and interference issues without seeking intervention or assistance of the Federal Communications Commission.

There has been some discussion in the literature as to the usefulness of applying the lessons learned about these kinds of negotiations to the larger question of defining interference rights.[1] It is not practical within the limited scope of this short paper to consider the details of wireless carriers' rights and experience with interference

management. Two areas illustrate, however, why any discussion of radio operating rights can benefit from a better understanding of licensees' market based approach to rights and interference management**:** where the individual licensee has clear, enforceable rights and is permitted to negotiate extensions of these rights and where the class of licensees has enforceable rights, but needs additional regulatory clarity in order to resolve interference issues.

Clear, Enforceable, Negotiable Rights - FCC Rules Allow for Private Agreements. Unlike most radio services, the rules governing mobile wireless carriers permit private rights negotiations. Under the Commission's PCS rules (and AWS and 700 MHz rules) parties can agree to a higher field strength than is outlined in the rules.[2] Commission rules also permit cellular licensees to negotiate service area boundary extensions agreements with neighboring licensees.[3] Wireless carriers' thousands of licenses and thousands of miles of adjacent and co-channel boundaries create a laboratory for evaluating whether this successful approach to interference 'rights' negotiations is pertinent to a larger radio operating rights framework.

Under current rules, licensees negotiate to extend rights into each others' licensed spectrum on a daily basis. These are not massive, one-time negotiations between companies, but involve hundreds of individual negotiations between companies' engineers who are tasked with the day-to-day operations of the network. And, although mobile wireless licensees are, for the most part, "stable and 'repeat players'"[4], this does not mean interests are always aligned or that licensees always get what they want or need. Indeed, not all negotiations are symmetrical or mutual – in our case, we attempt reciprocity when we seek to extend RF borders, but these negotiations can be difficult and carriers (including Verizon Wireless) don't always achieve their goals. That said, because the rights of both licensees are clear, there is no benefit to seeking regulatory redress. Instead we manage the process in the market and look to other ways to gain the rights to spectrum we need to operate – typically through spectrum purchase or lease.

Unauthorized Operator-to-Licensee Interference – Need for Additional Enforcement Assistance. Licensees also deal with thousands of instances of interference from unauthorized operations each year. Again, licensees' efforts to resolve

these issues are very much local and generally do not involve the FCC. If we can locate the source of harmful interference, we can often work with the owner of the property or transmitter to address the problem. However, some cases may require FCC intervention, such as in 2006 when a signal booster installed in a Manhattan office building interfered with about 200 Verizon Wireless cell sites in New York and New Jersey.[5] Although most instances of booster interference are smaller in scale, they still can be difficult to resolve – the source may be nearly impossible to identify if installed in a moving vehicle or boat. Interference from these and other sources costs carriers thousands of hours to investigate and, where possible, to resolve. In the case of boosters licensees are not seeking individual relief, but are asking the Commission to confirm licensee rights and take a strong stance on the marketing of these devices, so that licensees can address these interference issues more forcefully in the marketplace.[6]

Final Thought. Getting the right theoretical framework to define radio operating rights is important, but the exercise must be informed by the experience licensees have gained resolving interference issues in an increasingly complex and market-oriented RF environment.

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[1] See, e.g., Philip J. Weiser & Dale Hatfield, Spectrum Policy Reform and the Next Frontier of Property Rights, 15 GEO.MASON L. REV. 549, (2008) ("Weiser and Hatfield – Spectrum Policy Reform"); Thomas W. Hazlett, *A Law & Economics Approach to Spectrum Property Rights: A Response to Weiser and Hatfield*, 15 GEO. MASON L. REV. 975 (2008).Philip J. Weiser & Dale N. Hatfield, *Property Rights in Spectrum: A Reply to Hazlett*, 15 GEO. MASON L. REV. 1025 (2008). Thomas W. Hazlett, *A Rejoinder to Weiser and Hatfield on Spectrum Rights*, 15 GEO. MASON L. REV. 1031 (2008).

[2] 47 C.F.R. § 24.236. The Commission's Part 27 rules, which cover both AWS 1 and 700 MHz spectrum licenses, also permit these kinds of field strength agreements. 47 C.F.R. § 27.55(a).

[3] 47 C.F.R. § 22.912. Unlike PCS, new cellular agreements that extend the boundaries of a cellular licensees coverage are considered a major modification to the license and thus must be approved by the FCC. Moreover, these agreements are more cumbersome than the PCS field strength agreements in that they often need to be renegotiated when the licensee changes technology.

[4] *Weiser and Hatfield – Spectrum Policy Reform* at 289.

[5] Radio signal boosters, repeaters or amplifiers that are marketed and used without a wireless carrier's authorization are a growing and serious cause of harmful interference to wireless networks.

[6] *See* Comments and Reply Comments of CTIA in *Wireless Telecommunications Bureau Seeks Comment on Petitions Regarding the Use of Signal Boosters and Other Signal Amplifications Techniques Used with Wireless Services*, WT Docket No. 10-4; DA 10-14 (released January 6, 2010); *See also* Comments and Reply Comments of Verizon Wireless. Specifically, Verizon Wireless has asked that the Commission (l) confirm that signal boosters cannot be operated without a license or licensee approval, and (2) declare that signal boosters cannot be sold to entities not authorized to operate them. Verizon Wireless Comments at 8