

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Promoting Expanded Opportunities for Radio) ET Docket No. 10-236
Experimentation and Market Trials under)
Part 5 of the Commission’s Rules and)
Streamlining Other Related Rules)
)
2006 Biennial Review of) ET Docket No. 06-105
Telecommunications Regulations – Part 2)
Administered by the Office of Engineering)
and Technology (OET))

COMMENTS OF VERIZON WIRELESS

Verizon Wireless hereby submits its initial comments on the Notice of Proposed Rulemaking (“NPRM”) in the above-captioned proceeding.¹

I. SUMMARY

The NPRM seeks comments on steps the FCC might take to promote innovation and efficiency in spectrum use in its Part 5 Experimental Radio Service, by creating broad authority in the form of “program experimental licenses” for certain entities to conduct ongoing programs of research and experimentation under a single experimental

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¹ *Promoting Expanded Opportunities for Radio Experimentation and Market Trials under Part 5 of the Commission’s Rules and Streamlining Other Related Rules; 2006 Biennial Review of Telecommunications Regulations – Part 2 Administered by the Office of Engineering and Technology (OET)*, Notice of Proposed Rulemaking, 25 FCC Rcd 16544 (“NPRM”).

authorization.² Verizon Wireless supports innovation in network equipment and handsets by all qualified and interested parties, and supports the Commission’s consideration of ways to foster that innovation through streamlining and updating its experimental licensing rules. However, the proposed new rules are not appropriate for experimentation in licensed CMRS or microwave spectrum used to support CMRS networks, because of the risk of harmful interference to wireless communications, including to emergency and other services that rely on those communications. As recommended in the National Broadband Plan, the Commission should work with the National Telecommunications and Information Administration (NTIA) to identify underutilized spectrum that may be suitable for conducting research activities.³

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As Verizon Wireless noted in its recent comments on the Dynamic Spectrum Use NOI,⁴ the Commission should continue to rely on its longstanding policies for flexible, exclusive spectrum use in licensed CMRS bands. These policies increase the efficient use of spectrum, facilitate the operation of secondary markets, promote deployment of network infrastructure, and foster the development of innovative equipment and services – all to the benefit of the national economy and wireless consumers. Updating the experimental license process can assist in these objectives by promoting innovative technologies. To the extent, however, that the new procedures for granting program experimental authorizations proposed in this NPRM would lead to experimentation in these heavily used licensed bands, they threaten the past and future investment in those

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² *Id.* at ¶ 2.

³ *Id.* at ¶ 10, (citing National Broadband Plan, Recommendation 7.7, p. 125).

⁴ *Promoting More Efficient Use of Spectrum Through Dynamic Spectrum Use Technologies*, Notice of Inquiry, 25 FCC Rcd 16632 (“Dynamic Spectrum NOI”).

bands, may disrupt wireless communications, and may undermine licensees' vested rights in their spectrum. The Commission should thus limit the new procedures to unlicensed or other bands as described below.

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II. UNIVERSITY, RESEARCH, AND HEALTH CARE EXPERIMENTAL LICENSES SHOULD NOT BE GRANTED IN LICENSED CMRS SPECTRUM.

The Commission has proposed creating two separate experimental authorizations, one for Universities and Researchers and one for Health Care experimentation.⁵ These proposed experimental authorization types should be treated in the same manner as they represent similar issues that can impact CMRS spectrum licensees and their customers.

While Verizon Wireless supports the concept of program experimental authorizations, universities, research organization, and health care facilities should not be permitted to use licensed CMRS spectrum for experiments given the high likelihood of harmful interference being caused to commercial operations. CMRS spectrum is intensely utilized at universities and health care facilities, has high mobility users, ubiquitous coverage, and is very sensitive to external system interference. Interference can come in various forms including loss of system capacity, reduced data throughputs, disruptions, and reduced quality.

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Universities and health care facilities rely on commercial wireless services. For instance, college dormitory residents use these services as their primary source of both voice communications, and broadband services as well. Similarly, health care facilities' doctors, nurses, staff and patients rely on wireless services not only for day to day patient

⁵ See NPRM at ¶¶ 14 and 45.

care, but also for emergency communications. Visitors to these facilities rely heavily on these services as well. Further, these facilities are often located in urban areas and/or are adjacent to major highways where the potential for interference is greater.

Experimental operations in licensed CMRS spectrum can also interfere with critical Public Safety, E911 and other emergency services. Federal, state, and local public safety agencies use Priority Access Service to assist first responders and use CMRS voice and data services to supplement their communications needs during day to day operations and most importantly during national emergencies and disaster recovery efforts.

Even where experimental licenses use spectrum that is adjacent to CMRS bands, there is the potential for harmful out of band or overload interference into licensed operations. It is thus critical that the FCC require coordination with and notification to CMRS licensees operating on adjacent bands and adjacent markets for all radio experiments and testing activities by universities, research organizations, and health care facilities. Experimental licensees must coordinate with licensees on adjacent bands and provide sufficient information about the proposed experiment to allow CMRS licensees to adequately evaluate potential interference concerns. Notifications should be made a minimum of 30 days before a proposed start date to provide sufficient time for CMRS licensees to evaluate the proposed test.

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III. THE COMMISSION SHOULD IDENTIFY OTHER BANDS AND SOLUTIONS FOR RADIO EXPERIMENTATION.

Rather than creating the risk of harmful interference to CMRS operations from the new program experimental licenses, the FCC should consider the following bands, which

are better suited for radio experimentation as they are not as heavily used as the CMRS bands, but are still suitable for researching, testing, developing and market trials of new technologies including dynamic spectrum use technologies:

- Unlicensed spectrum bands 2.4 GHz, 5.8 GHz and 900 MHz and the shared licensed 3.6 GHz band offer opportunities for radio spectrum experimentation. These unlicensed and shared licensed bands should provide good test beds for conducting radio experiments with new technologies.
- Certain locations with unlicensed or unused spectrum in microwave point-to-point bands that use fixed location stations.
- White space devices in certain markets using available channels in broadcast UHF TV spectrum on a low power basis with updated geolocation databases.
- Certain bands with very light usage above 38 GHz, which has the advantage of reduced interference ranges due to the higher frequency band operation.
- Potential experiments in spectrum bands that are used very infrequently, not used at certain times of the day, or not used in certain areas of the country. These can be considered for Innovation Zone experiments.

These bands should be pre-established by the Office of Engineering and Technology as suitable for radio experimentation under the new programs.

IV. THE COMMISSION SHOULD LIMIT INNOVATION ZONE LICENSES TO UNLICENSED OR UNAUCTIONED SPECTRUM.

The NPRM seeks comments on the establishment of Innovation Zones.⁶ Verizon Wireless supports the establishment of Innovation Zones, subject to two conditions: (1)

⁶ NPRM at ¶ 38.

Innovation Zones should be established only in unlicensed spectrum or unauctioned spectrum; and (2) in a manner that will not cause harmful interference to existing licensed services in other bands.

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Further, Innovation Zone Experimental Licensees should also be required to demonstrate that the proposed radio experiments will not cause interference to existing licensed services as a prerequisite to obtaining a license; must be required to coordinate on an ongoing basis with CMRS licensees in adjacent markets and bands; and must agree to terminate experiments immediately when a CMRS licensee identifies harmful interference.

V. MARKET TRIALS SHOULD BE LIMITED TO UNLICENSED SPECTRUM ABSENT AGREEMENT FROM THE CMRS LICENSEE.

For similar reasons as discussed above, market trials should only be permitted in unlicensed spectrum, absent prior agreement from the CMRS licensee. In addition, due to the difficulty of controlling the disposition of potentially thousands of experimental devices, Verizon Wireless recommends the following requirements for third party market trials of experimental equipment to protect incumbent licensed spectrum users and their customers:

- Third parties must have the ability to retrieve and remove all experimental radio equipment during and upon completion of the market trials. This is necessary to resolve any incidences of harmful interference occurring to existing licensed users during the marketing trials.

• All experimental equipment and devices should be capable of “remote kill,” periodic “keep alive,” and other capabilities to manage and render experimental equipment inoperable.

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• Experimental equipment should only be made available to experiment participants that understand the nature of the experiment and their obligations to return the equipment and not travel with the equipment outside the defined test area.

• Every market trial will identify a central point of contact and positive control for all equipment and devices.

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VI. TO THE EXTENT THAT NEW PROGRAM EXPERIMENTAL LICENSES ARE GRANTED WITHOUT LICENSEE CONSENT, LICENSEES’ RIGHTS WOULD BE UNLAWFULLY HARMED.

In the NPRM the Commission proposes to establish a process whereby an experimental licensee “will be permitted to use of [sic] a broad range of radio frequencies for research and experimentation on a non-interference basis without having to obtain prior authorization for the use of specific frequencies”⁷ and seeks comment on whether “we should require the licensee’s concurrence prior to the test?”⁸ Verizon Wireless believes that any new rules must explicitly require prior approval of a CMRS licensee before an experimental licensee may commence operations on CMRS spectrum otherwise the FCC would be effectively requiring a CMRS licensee to share its spectrum. Proposed Section 5.309(b) should thus be revised to state that “Prior written approval of a licensee of an authorized service (for instance CMRS) is required before commencement of any experiment.” As commenters have shown in other proceedings, mandatory sharing of

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⁷ NPRM at ¶ 19.

⁸ *Id.* at ¶ 31.

spectrum for use by third parties conducting radio experiments also would violate CMRS licensees' existing spectrum rights.⁹ In acquiring (either through an auction or on the secondary market) and developing their spectrum, CMRS licensees obtained investment expectations and both rights and responsibilities associated with those expectations.¹⁰ Among those rights is the "right to be protected from interference."¹¹ Experimental operations, as discussed above, could cause interference to licensees' operations, and thereby unlawfully interfere with licensees' investment expectations and their right to protection from harmful interference. Moreover, to the extent they impede a licensee's exclusive right to "mine" its spectrum, even where harmful interference is not being caused, such experimental operations violate licensees' spectrum rights.

In addition, spectrum auctions establish a contract between the licensee and the federal government.¹² Prior to holding an auction, the Commission establishes rules governing the rights and responsibilities of that auction's winners. Auction participants invested tens of billions of dollars to acquire licenses based on those rules, including the

⁹ See, e.g., Comments of Verizon Wireless, ET Docket No. 10-237, at 16 (filed Feb. 28, 2011); Sprint Corporation Comments, ET Docket No. 03-237, at 49-51 (filed Apr. 5, 2004); Reply Comments of Verizon Wireless, WT Docket No. 02-135, at 13 (filed Feb. 28, 2003).

¹⁰ See, e.g., *Orange Park Florida v. FCC*, 811 F.2d 664, 674 n. 19 (D.C. Cir. 1987); *Reuters Ltd. v. FCC*, 781 F.2d 946, 950 n.5 (D.C. Cir. 1986); *Yankee Network v. FCC*, 107 F.2d 212, 217 (D.C. Cir. 1939).

¹¹ Spectrum Policy Statement, 15 FCC Rcd 24178, 24186 (2000).

¹² See, e.g., *Installment Payment Financing Second Reconsideration Order*, 14 FCC Rcd 6571, 6581 n.66 (1999) ("FCC auction rules create a binding mutual obligation between the Commission and the winning bidder as of the close of the auction."); *Nextwave Personal Communications v. FCC*, 200 F.3d 43, 45 (2d Cir. 1999) ("The close of the auction established the FCC's obligation to grant NextWave the Licenses if the company fulfilled statutory eligibility requirements As in contract law more generally, a sale by auction is valid only upon offer and acceptance.").

Commission's flexible, exclusive use policies and the right to be protected from harmful interference. Licensees who acquire their spectrum through the secondary market similarly rely on these principles. Experimental Licenses granted without a licensee's consent could unlawfully devalue and impair the auction contract, violating licensees' settled right to maximize the value of the spectrum they bought. These serious legal issues can be avoided by establishing clear procedures that require the licensee's prior consent for any use of its spectrum.

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VII. CONCLUSION

For these reasons, the Commission should not extend the new program experimental license procedures to licensed CMRS spectrum. These spectrum bands are not suitable for third party radio experiments, because the risk of harmful interference to CMRS operations, as well as to Public Safety, E911 and other emergency services that rely on those operations, is too great. Rather, the FCC should establish the new program experimental licenses for the other bands identified in these comments. These actions will properly balance the benefits to innovation from an efficient experimental licensing system with the critical need not to cause harms to existing wireless services

Respectfully submitted,

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