

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

In the Matter of )

Additional Spectrum for Unlicensed Devices )  
Below 900 MHz and in the 3 GHz Band )

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**ET Docket No. 02-380**

**To: The Commission**

**COMMENTS OF THE RURAL 700 MHz BAND LICENSEES**

The Rural 700 MHz Band Licensees, by their attorneys, hereby submit these comments in response to the December 2002 *Notice of Inquiry* in the above-captioned docket.<sup>1</sup> A list of the rural telephone companies, cooperatives and rural telco subsidiary companies that comprise the “Rural 700 MHz Band Licensees” is attached below.

The *NOI* seeks comment from the public on the possibility of permitting unlicensed devices to operate in additional frequency bands, including within the TV broadcast bands<sup>2</sup> at locations and times when spectrum is not being used, and based on technical requirements that would be necessary to ensure that such devices do not cause interference to authorized services operating within the TV broadcast bands. In brief, while the Rural 700 MHz Band Licensees agree with the Commission that there could be

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<sup>1</sup> In the Matter of Additional Spectrum of Unlicensed Devices Below 900 MHz and in the 3 GHz Band, *Notice of Inquiry*, ET Docket No. 02-380 (*rel.*, December 20, 2002) (“*NOI*”). The comment and reply deadlines in this proceeding was initially set at April 7, 2003 and May 6, 2003, respectively, by publication of the in the *NOI* in the *Federal Register*. See 68 FR 2730 (January 21, 2003). The Office of Engineering and Technology recently extended these deadlines by ten (10) days. See *Order Granting Extension of Time*, DA 03-1022 (*rel.* March 31, 2003).

<sup>2</sup> As used in the *NOI*, the term “TV broadcast bands” refers to the 402 MHz of spectrum allocated to the broadcast services at 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz. The band 470-512 MHz is allocated to the land mobile and commercial mobile radio services in 13 cities, and the broadcast auxiliary service also operates on certain channels in the TV broadcast bands.

significant benefits to the economy, businesses and the general public in making additional spectrum available for unlicensed transmitters, and each supports the Commission's efforts to identify spectrum that is appropriate for such unlicensed use, each firmly believes that unlicensed transmitters should not be permitted the 48 megahertz of spectrum that has recently been reallocated to fixed and mobile services in the 698-746 MHz band (Television Channels 52-59) (the "Lower 700 MHz Band").<sup>3</sup>

**I. STATEMENT OF INTEREST**

Each of the Rural 700 MHz Band Licensees participated in the FCC's recent Lower 700 MHz Band auction ("Auction No. 44") and a number of them have filed short-form applications to participate in the upcoming reauction of Lower 700 MHz Band licenses ("Auction No. 49"), which is scheduled to begin on May 28, 2003.<sup>4</sup> Because each of these licensees has expended substantial resources in acquiring their licenses, and each has plans to develop their Lower 700 MHz Band spectrum by providing fixed and/or mobile wireless telecommunications services, each has a significant stake in the outcome of this proceeding.

**II. PERMITTING UNLICENSED OPERATIONS IN THE LOWER 700 MHz BAND WOULD BE UNFAIR TO EXISTING LICENSEES AND DISRUPTIVE TO THE BUSINESS PLANS OF AUCTION APPLICANTS**

It would be extremely unfair to current licensees and long-form applicants from Auction No. 44, and disruptive to applicants and potential bidders in Auction No. 49, for the FCC to change the rules in the middle of the game by permitting unlicensed devices

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<sup>3</sup> See Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), GN Docket 01-74, *Report and Order*, 17 FCC Rcd 1022 (2002) ("*Lower 700 MHz Report & Order.*")

<sup>4</sup> See *Public Notice* Report No. AUC-03-49-C, Auction of Licenses in the Lower 700 MHz Band Scheduled for May 28, 2003, DA 03-567 (*rel.* March 4, 2003) ("*Lower 700 MHz Reauction Notice.*")

to operate on any of the Lower 700 MHz Band channels. These licensees and applicants have invested a significant amount of time, effort and money in securing the exclusive right to provide spectrum-based services in a given geographic area using Lower 700 MHz Band C-Block channels, and all of them must make significant further investment in order to turn these spectrum rights into a viable business. If the Commission were to allow other individuals or businesses to use these same frequencies on an unlicensed basis, it would undercut the nascent auction winners, and discourage any future investment in licensed operations using Lower 700 MHz Band channels. Such an effect would be harmful to the Rural 700 MHz Band Licensees as well as other entities that have made significant investments and business decisions in reliance on the existing licensing and technical rules, which limit unlicensed operations to a number of discrete spectrum bands. These companies invested in licensed, exclusive-use spectrum under a regulatory scheme where they could recoup some or all of their investment by partitioning and/or disaggregating their license rights to third parties, and at a time when the FCC is on the verge of allowing licensees of exclusive use spectrum to enter into commercial spectrum leasing arrangements. Allowing unlicensed users to access Lower 700 MHz Band channels without the permission of the relevant license holder effectively eliminates any incentive for third parties to enter into such secondary market transactions. There are interference concerns that may adversely affect the new Lower 700 MHz Band licensees, as discussed below. However, in the TV bands used for Commercial Mobile Radio Services (CMRS) (including the Lower 700 MHz Band), the potential for unlicensed devices to occupy airtime dictates against allowing such devices to operate in these bands, even if the technology exists for them to ensure that the channel is clear before communications are sent. In setting up unlicensed “Wi-Fi” networks, even rural

operators have encountered lack of access due to other Wi-Fi systems that were established without the knowledge of the second operator. Incumbent licensees should not have to worry about encountering traffic delays due to their spectrum being occupied by unlicensed operations. Moreover, these licensees bid on the exclusive use of the spectrum, not shared operating conditions.

### **III . EXPANDING ACCESS TO TV BROADCAST BANDS BY UNLICENSED DEVICES**

The Rural 700 MHz Band Licensees respond below to specific questions posed by the Commission regarding the use of the TV broadcast bands by unlicensed devices.

- *Should new unlicensed devices be permitted to operate within any portions of the TV bands, and if so, which portions? Are there any other bands where new unlicensed devices could be permitted to operate?*

Subject to whatever protections are considered appropriate by the broadcast industry, unlicensed devices could be permitted to operate using designated “core” TV channels if they are vacant in a given geographic area, and if the channels are not needed to facilitate the DTV transition. Aside from requiring the use of frequency agile transmitters that are capable of “monitoring” the spectrum to detect frequencies already in use, the Commission could limit the potential for harmful interference to incumbent broadcast operations by requiring that any unlicensed use of vacant TV channels be limited to fixed operations. However, the Commission should not permit unlicensed devices in any portion of the TV bands if this may have the effect of creating interference to nascent Lower 700 MHz Band licensees, or delaying or adding expense to the DTV transition process. Unlicensed operations can spring up anywhere, which is why technologies such as “Wi-Fi” have become so popular. However, this same consideration makes it difficult for licensed co-channel and adjacent-channel operators to guard against

interference from an unlicensed device. In many cases, it will be impossible for licensees to identify the source of interference in a timely fashion, especially if the interference is coming from a mobile device (or a device that has been modified by the end-user and is being operated in a manner that is contrary to the manufacturer's instructions). If the source can be located, it may be difficult legally or politically to shut down their operations in order to eliminate interference; and this process could place additional unwanted burdens on the Commission's enforcement staff. While the Commission's Spectrum Policy Task Force Report<sup>5</sup> has proposed some very interesting ideas on avoiding interference through the use of an "interference temperature" metric,<sup>6</sup> the *Report* makes it clear that the technology for implementing this approach is far from being perfected, and much more research is needed.<sup>7</sup> The Commission must not permit a "tragedy of the commons" to extinguish any likelihood that the Lower 700 MHz Band will develop into a viable commercial service.

- *Should the use of certain channels by unlicensed devices not be permitted? For example, channel 37 is allocated for radio astronomy operations and the Wireless Medical Telemetry Service, and unlicensed operations on this channel may not be appropriate because of special interference concerns associated with the sensitive nature of radio astronomy reception and the critical safety function of medical telemetry equipment. In addition, there are concerns about possible interference to channels 2, 3 and 4 because they are used for, or are adjacent to, the output channels of VCRs and other set-top boxes. Further, spectrum currently allocated to channels 52-69 (698-806 MHz) has been reallocated and has been or will be licensed for new services.<sup>8</sup> Should unlicensed operations be permitted in the reclaimed spectrum?*

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<sup>5</sup> See Spectrum Policy Task Force Report, ET Docket No. 02-135 (November 2002) ("*Report*").

<sup>6</sup> *Report* at p. 57.

<sup>7</sup> *Id.* at p. 33 ("The Task Force recognizes that there are hurdles that must be overcome before the interference temperature metric could serve as a useful spectrum management tool.").

<sup>8</sup> This band includes public safety services, for which some licenses have been assigned; spectrum controlled by guard band managers, which has been auctioned; and commercial mobile radio service bands, some of which have not yet been auctioned.

For reasons noted above, the Rural 700 MHz Band Licensees believe that unlicensed operations should not be permitted on channels 52-69 (*i.e.*, channels which include the Lower 700 MHz Band spectrum), on any other spectrum bands that have been licensed by or designated for auction, or where incumbent licensees have been granted exclusive use rights. To guard against the possibility of interference to VCRs and set-top boxes, unlicensed operations should not be permitted on TV channels 2, 3 and 4. Likewise, unlicensed devices should not be permitted to operate on channel 37 to protect sensitive radio astronomy and Wireless Medical Telemetry Service operations.

- *Should there be geographic restrictions on where unlicensed operation in the TV bands is permitted, such as in areas where co-channel or adjacent channel television, Private Land Mobile Radio Service (PLMRS) or Commercial Mobile Radio Service (CMRS) is present, or in the border areas near Canada and Mexico?*<sup>9</sup>

It is imperative that the Commission prevent interference to TV bands on which PLMRS and CMRS operations have been authorized to operate, including the Lower 700 MHz Band. Geographic restrictions would be one possible approach to providing this protection. Unfortunately, as a practical matter, the nature of unlicensed devices is that consumers have an increasing expectation that they will be able to use these devices anywhere. Therefore, geographic restrictions will be very difficult to enforce. A far better course would be to preclude the manufacture and sale of devices that would operate within or adjacent to the PLMRS and CMRS bands.

- *What restrictions, if any, should be placed on the applications or numbers of unlicensed devices that would be permitted in the TV broadcast bands, and why*

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<sup>9</sup> PLMRS and CMRS operations are permitted on TV channels in the 14-20 range in certain markets. *See* 47 C.F.R. §§ 90.303 and 20.9.

*would such restrictions be needed? For example, should applications be limited to fixed uses?*

To guard against the potential for interference to licensed operations, the Rural 700 MHz Band Licensees believe that unlicensed operations in the TV broadcast bands should be limited to fixed applications, in those portions of the spectrum in which unlicensed operations would be acceptable. The Commission could consider adopting a registration requirement for certain unlicensed facilities (*e.g.*, an FCC database providing contact information and identifying the location and operating parameters of individual high-power transmitters) as a safeguard in certain instances. However, this would place additional burdens on the Commission, incumbent licensees and unlicensed device users. The better course is to avoid the potential for this conflict entirely by preventing unlicensed operations in the PLMRS and CMRS bands (including the Lower 700 MHz Band).

- *Are any special, temporary restrictions needed to ensure that unlicensed devices do not impact the transition of television from analog to digital service? For example, as part of the transition process, television stations may be switching channels and modifying their service area. How can we ensure that unlicensed operation does not cause interference when stations make such changes or when new DTV stations commence operation?*

The Rural 700 MHz Band Licensees urge the Commission not to initiate any proceeding to allow unlicensed use of the TV broadcast bands if this could delay or add expense to the DTV transition process. The Rural 700 MHz Band Licensees and many others have invested significant sums in the prospect of developing commercial services using the spectrum that is reclaimed through the transition to DTV. While these channels may be vacant in many communities west of the Mississippi River, the Rural 700 MHz Band Licensees are relying upon a smooth DTV transition in order for these highly

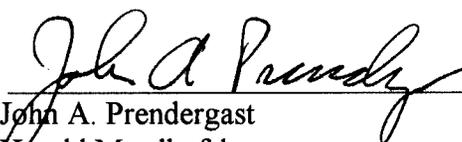
desirable frequencies to become available nationwide; and for the resulting economies of scale to encourage the development of affordable equipment, for the benefit of the entire 700 MHz Band industry.

#### **IV. CONCLUSION**

For reasons stated above, the Rural 700 MHz Band Licensees urge the Commission not to initiate any proceeding that would permit unlicensed operations on the 48 megahertz of spectrum that has recently been reallocated to fixed and mobile services in the Lower 700 MHz Band; and to refrain from any proceeding to allow unlicensed use of the TV broadcast bands, if this could in any way delay or add expense to the DTV transition process.

Respectfully Submitted,

**THE RURAL 700 MHZ BAND LICENSEES**

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## **Attachment A**

A list of the rural telephone companies, cooperatives and rural telco subsidiary companies that comprise the “Rural 700 MHz Band Licensees” is provided below.

- 3G COMM, LLC
- Allcom Communications, Inc.
- Cameron Communications Corporation
- CTC Telcom, Inc.
- Dickey Rural Services, Inc.
- Eastern Colorado Wireless Partnership
- First Cellular of Southern Illinois
- Kennebec Telephone Company
- North Dakota Network Company
- PVT Networks, Inc.
- Webster Calhoun Cooperative Telephone Association