Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
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	)	**ET Docket No. 00-258**
Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use By the Mobile-Satellite Service	)	**ET Docket No. 95-18**
The Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band	)	**IB Docket No. 99-81**
Petition for Rulemaking of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service	)	**RM-9498**
Petition for Rule Making of UTStarcom, Inc., Concerning the Unlicensed Personal Communications Service	)	**RM-10024**

To: The Commission

COMMENTS OF MIDSTATE COMMUNICATIONS, INC.

The Federal Communications Commission ("FCC" or "Commission") has adopted a Further Notice of Proposed Rulemaking ("FNPRM") to consider whether to reallocate additional

spectrum bands below 3 GHz to advanced wireless services, including third-generation ("3G") and future-generation wireless services.[1] This spectrum includes the 1910-1930 MHz; 2390-2400 MHz; 1990-2025 MHz/2165-2200 MHz; and 2150-2160 MHz bands. In these comments, Midstate Communications, Inc. ("Midstate")[2] focuses on the 1910-1930 MHz Unlicensed Personal Communications Service ("UPCS") band, which includes the 1910-1920 MHz sub-band currently designated for asynchronous data devices, and the 1920-1930 MHz sub-band currently designated for isochronous voice devices. Midstate agrees with the Commission's assessment that this spectrum is under-utilized and, therefore, urges that the 1910-1930 MHz band be opened to services such as the "Community Wireless Network" concept developed by UTStarcom to facilitate local wireless deployment in rural, tribal, and underserved areas.[3]

In addition, the under-utilized 1910-1920 MHz UPSCS asynchronous data sub-band should be opened to non-interfering isochronous voice communications. Further, Midstate recommends that the Commission leave the spectrum "unlicensed," relax the spectrum etiquette, and modestly increase the power levels, as UTStarcom proposes, to enable small entities to have cost-effective access to the spectrum for local and campus-type uses.

Alternatively, if the Commission decides to license the 1910-1930 MHz band, it should designate very small "sub-licensing" or "pocket licensing" areas; otherwise, the Commission should implement a mandatory partitioning and/or disaggregation procedure, for the small

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[1] 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, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, ET Docket No. 00-258 (rel. Aug. 20, 2001).

[2] Midstate is a rural telephone cooperative operating exchanges in the Kimball, South Dakota area.

[3] *Petition for Rulemaking*, RM-10024, Nov. 6, 2000.

amount of spectrum that rural carriers would need to deploy low-power systems within defined areas of a few square miles.

When the Commission allocated the 1850-1990 MHz band to PCS in 1994, it carved out the 1910-1930 MHz portion for UPCS—an array of potential offerings such as low-power, in-building, portable devices, and services such as wireless local area network ("LAN"), cordless private branch exchange ("PBX"), and wide area network ("WAN") gateway applications.[4]

The Commission divided the UPCS spectrum into two equal blocks to accommodate isochronous (voice) and asynchronous (data) services. The FCC also approved a "spectrum etiquette"—a set of rules for allowing widely differing "nomadic" and "non-nomadic" applications and devices to gain fair access to the spectrum. However, as the Commission has acknowledged, the vision of UPCS really never materialized, with the agency having approved only 45 devices for use in this band.[5]

Because of under-utilization in the 1910-1920 MHz asynchronous data sub-band, the Wireless Information Networks Forum ("WINForum") and others have proposed redesignating that spectrum for isochronous voice devices.[6] Midstate has no objection to this proposal because the Community Wireless Network system concept proposed by UTStarcom (that Midstate supports) can co-exist with either asynchronous or isochronous devices, or both.

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[4] Amendment of the Commission's Rules to Establish New Personal Communications Services, GEN Docket No. 90-314, *Memorandum and Order,* 9 FCC Rcd 4957, 5037 para. 208 (1994).

[5] *FNPRM*, para. 10, note 22.

[6] *Petition for Rulemaking*, RM-9498, Jan. 8, 2001. See also *Public Notice*, DA-01-2308 (Oct. 5, 2001), *Alaska Power & Telephone Company, Inc., Files Request for Waiver of Sections 15.319 and 15.321*, to operate isochronous voice devices in the 1910-1920 MHz band.

Additionally, UTAM, the frequency coordinator and overall manager of the 1910-1930 MHz band, reports that "2,772 counties, or 88%, of the [United States] is available for unencumbered deployment" of UPCS devices.[7] Thus, the relocation of fixed microwave links does not appear to be a problem in the UPCS band. The Commission may, however, determine that UTAM should be reimbursed for its band-clearing efforts and promulgate rules accordingly.

The Community Wireless Network can be viewed as a long-range cordless telephone and Internet access system that can be extended from a few city blocks to several square miles. The network employs UTStarcom's Personal Access System ("PAS"), which is based on Japan's RCR-28 Personal Handyphone System ("PHS") standard.[8] In June 2001, Midstate (in conjunction with its affiliated PCS licensee, Airwave Wireless LLC) deployed the first UTStarcom system in North America on a trial basis, at Kimball, South Dakota, operating on its licensed C-Block PCS spectrum. Midstate has been pleased with the performance of the UTStarcom system, and can foresee applications for this technology in rural areas for which neither Midstate nor its affiliate holds a PCS license. The UTStarcom system is compatible with our existing DMS10 exchange switch, and our in-house technicians were able to quickly and easily learn to maintain and operate the system. These features make the system much more feasible for rural carriers that must be cost-conscious in implementing new technologies.

In addition to voice communications, the system can transport data up to 64 kilobits per second (Kbps). Although this speed is lower than the broadband rates of digital subscriber line (DSL) and other high-speed and advanced services, it is faster than the 56 Kbps rate of dial-up Internet access over standard copper telephone lines.

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[7] *Thirteenth UTAM Report to the FCC*, GEN Docket No. 90-314 (July 1, 2001) at 2.

High broadband speeds, however, are not necessarily the solution for rural, underserved, and tribal areas.[9] Certainly the more advanced broadband technology is superior, but cost-effective "access" is more important in rural and underserved areas. Preliminary results from a National Telephone Cooperative Association ("NTCA") survey of broadband deployment in rural America shows that cost is a major obstacle. NTCA has indicated that the results of this survey will be published before the end of the year. The survey indicates that 97% of the survey respondents offering DSL service have subscribership rates of less than 25%, thereby highlighting the low demand and the high cost ($30 to $60 per month) for high-speed service in many rural areas.

Without question, the most significant problem faced by rural carriers is the higher cost of doing business in low-density population areas. Such carriers must cover vast roadways and fields just to achieve the minimum coverage acceptable to customers. These rural carriers often do so in the face of difficult terrain and severe weather conditions. The other side of the cost problem is low revenues. At the same time that a rural carrier must spend more to overcome geography and climate, it must survive off of a much lower revenue stream because there are simply not as many customers living in rural areas. While the average urban population density in areas served by Bell companies is over 130 per square mile, this figure falls to 0.1 to 7.0 customers per square mile in rural areas.[10]

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[8] See generally, UTStarcom petition, RM-10024.

[9] Wayne A. Leighton, *Broadband Deployment and the Digital Divide*, Cato Institute Policy Analysis (No. 410), August 7, 2001, at 8.

[10] See Lee Selwyn, Patricia Kravtin, Scott Coleman, *Building a Broadband America: The Competitive Keys to the Future of the Internet*, Economics and Technology, Inc. (May 1999) at 26.

UTStarcom's PAS system operates on a subset of the frequencies from 1893.5 MHz to 1919.6 MHz, which the FCC has allocated, in part, to PCS C-block spectrum and to UPCS asynchronous data. The PAS system can operate on a small amount of bandwidth—5 MHz to 10 MHz—to support a relatively large number of users through small cells and high frequency reuse.[11] The PHS standard divides available spectrum into 300 kHz channels, each of which can handle four two-way conversations.[12] An entire system can be deployed for less than $300,000—the average cost of a single cellular or PCS site.[13] In smaller communities, the deployment cost may be less than $100,000 for a basic system, based on information from UTStarcom.

Clearly, a Community Wireless Network could be deployed by a small entity that otherwise may not be able to afford to bid on a PCS or 3G license. Community Wireless Networks and similar systems would thus be beneficial for low-density population clusters in rural and underserved areas, including tribal lands. These systems would also benefit urban and suburban areas because the applications include wireless service to university campuses, local schools, resorts, and business environments that require mobile communications in a small, defined geographic area.

As UTStarcom has suggested, the 1910-1930 MHz band should remain unlicensed because Community Wireless Network/Mobile Local Loop solutions can co-exist with current isochronous and asynchronous devices. The Commission would need only to relax the spectrum etiquette and allow a modest increase in power levels to accommodate these systems.

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[11] *Id.*, at 3. Additionally, we have experience with UTStarcom equipment, and we are familiar with the minimum bandwidth for operation.

[12] *Id.*

If the Commission decides that it must license the UPCS spectrum, it should require that 1910-1930 MHz band licensees sub-license—via partitioning and/or disaggregation—a "pocket" license of up to 5 MHz of spectrum in small defined areas that the primary licensee is unable to serve, would not serve in a timely manner, or where it can be demonstrated that a Community Wireless Network or similar system serves the public interest.

The best solution, however, is to leave the 1910-1930 MHz band unlicensed, relax the spectrum etiquette and modestly increase power levels, and allow Community Wireless Network/Mobile Local Loop solutions in small defined spaces.

Conclusion

In light of the foregoing, Midstate supports the proposal of UTStarcom for a Community Wireless Network/Mobile Local Loop service in the 1910-1930 MHz band.

Respectfully Submitted,

By ___/s/_____

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[13] *Id.,* at 4.

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