BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C.

In the Matter of	)	
	)	ET Docket No. 00-258
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	)	
	)	
Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements for IMT-2000	)	RM-9920
	)	
Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile-Satellite Service	)	RM-9911

TO: THE COMMISSION

COMMENTS OF THE AD HOC MDS ALLIANCE

Ad Hoc MDS Alliance, by and through its attorneys ("Ad Hoc"),[1] hereby submits Comments in response to the *Advanced Services Notice of Proposed Rulemaking* ("*Advanced Services NPRM*") in the above-referenced proceedings, released on January 5, 2001 (FCC 00-455). The NPRM was released in the *Federal Register* on January 23, 2001, thus establishing February 22, 2001 as the filing deadline for these Comments. 66 FED. REG. 7438 (Jan. 23, 2000).

[1] The Ad Hoc MDS Alliance consists of the following entities: Atlanta MDS Company, Inc., Chicago MDS Company, Detroit MDS Company, Los Angeles MDS Company, Inc., Milwaukee MDS Company, Minneapolis MDS Company, New York MDS, Inc., Phoenix MDS Company, San Diego MDS Company, San Francisco MDS, Inc., St. Louis MDS Company, Inc., Washington MDS, Inc., Private Networks, Inc., Multipoint Information Systems, and Broadcast Data Corporation.

The *Advanced Services NPRM* proceeding is considering whether to reallocate or otherwise provide spectrum for advanced services, including "Third Generation" ("3G") wireless services or IMT-2000 services. The NTIA and the Commission have proposed three different options for the provision of 3G services.[2] Three of the frequency bands under consideration for this purpose are of relevance to Ad Hoc: the 2110-2150 MHz band, the 2160-2165 MHz band, and the 2500-2690 band.[3]

Ad Hoc is the licensee of Multichannel Distribution Service ("MDS") channels in major markets, which operate in the 2150-2162 MHz band, *i.e.*, MDS Channel 1 or Channel 2, and the 2500-2690 MHz band, *i.e.*, the MDS E, F & H Channel groups (collectively, the "Stations"). As discussed more fully below, Ad Hoc does not support the reallocation of the 2160-2165 MHz or 2500-2690 bands for advanced wireless services due to the severe impact that such reallocations would have on the fixed wireless broadband industry.

While the Stations do not use spectrum within the first identified band, *i.e.,* 2110-2150 MHz, which has been included in Option 1 and Option 3 to be combined with the reallocation of the MDS and ITFS bands, the proximity of this band to existing MDS stations, along with the fact MDS Channels 1 & 2 constitute the narrow separation between these two bands, *i.e.,* 2150-2160 MHz, raises the prospect that any action with respect to the 2110-2150 MHz band will likely impact these MDS channels, and thus, the Stations used by Ad Hoc. Reallocation of any portion of the 2500-2690 MHz band would injure Ad Hoc directly, if the reallocated spectrum included the E, F., or H group MDS channels, or indirectly if it involved the ITFS spectrum

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[2] *Advanced Services NPRM*, ¶¶ 66-69. The first option proposes pairing three noncontiguous bands, 1710-1755 MHz, 2210-2150 MHz and 2160-2165 MHz ("Option 1"), which yields 90 MHz for 3G uses. The second option proposes the pairing of 1710-1755 MHz and 1755-1850 MHz bands ("Option 2"), which yields 140 MHz for 3G uses. The final option proposes to pair either the 2210-2150 and 2160-2165 MHz bands, or the 1710-1755 MHz band with the 2500-2690 MHz band (Option 3"), which would yield 230 MHz for 3G uses.

[3] *Advanced Services NPRM*, ¶ 50.

which is used together with the MDS spectrum to support fixed wireless broadband services. Accordingly, Ad Hoc has a vital interest in this proceeding, and extensive experience with the marketplace that is useful in predicting the potential impact of the Commission's proposed decisions in this proceeding.

I. THE IMPACT OF PROPOSALS TO REALLOCATE 2160-2162 MHz

A. Is the Reallocation of Spectrum for 3G Purposes Necessary?

While it is commendable that the Commission has moved swiftly to review which spectrum should be allocated for 3G purposes, it has not yet answered the fundamental question as to whether, and to what extent, additional spectrum for this use is necessary. Ad Hoc believes that it is of primary importance to reach a conclusion on this matter prior to studying the specific spectrum to be reallocated. Fixed wireless broadband, which has already been authorized, will help bridge the digital divide by making service available to areas that remain unserved by cable and DSL. Fixed wireless broadband serves rural areas as well as redlined areas that cable and DSL choose not to serve. Moreover, the ITU is still studying the demand for 3G wireless services, and will not release its studies until 2003. *Id.* at 13.

B. Even if 3G Services are Deemed Immediately Necessary, MDS and ITFS Spectrum Should Not Be Reallocated.

Should the Commission determine that the United States should immediately move forward, it should not select the 2160-2165 and 2500-2690 MHz as the new home for the 3G Services because it would disrupt fixed wireless systems. One of the most popular justifications for the allocation of 3G services on 2500-2690 MHz band is the need for "harmonization" between the United States and the rest of the world. Although there may be some benefit in minimizing the number of "common frequency bands" used for 3G purposes, the evidence shows that the MDS and ITFS frequencies cannot support this goal. *Advanced Services NPRM*,

n.47. Specifically, 52% of the trade between the United States and it's top 10 trading partners is with Mexico and Canada. Certain but not all European countries intend to use the MDS and ITFS spectrum for their 3G services. Thus, while certain countries in Europe have selected the 2500-2690 MHz band for 3G services, the three European countries that are among the United States's top 10 trading partners only comprise 13% of its overall international trade volume. These countries are not wedded to the 2500-2690 MHz band for 3G services.[4] If such frequency "harmonization" is a significant U.S. goal in 3G, then 2500-2690 MHz is not recommended in service of this goal.

The 2 GHz fixed wireless industry has received Commission authority to operate a viable business through the provision of two-way digital service. In response to the Commission's modified service rules for MDS and ITFS spectrum, the Commission called for, and is just about ready to grant applications for, modified MDS and ITFS licenses to institute two-way systems.[5] To be successful in the marketplace, two-way services require the entire 2150-2162 MHz and 2500-2690 MHz bands. From Ad Hoc's perspective, the most urgent issued raised by the *Advanced Services NPRM* is the proposal to reduce MDS Channel 2 by one-third of its licensed spectrum. Implementing this proposal would risk dire consequences to the fixed wireless plan for the 2 GHz spectrum. The 2150-2162 MHz band is a critical link in the industry-consensus "Breckenridge Agreement" plan for 2 GHz fixed wireless. Because of this band size and its spectral distance from the remaining 2500-2690 MHz band, the industry selected the 2150-2162 MHz contiguous band for a "superband," 12 MHz upstream path.[6]

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4 *See* Bureau of Census, *Foreign Trade Statistics* & *Top Trading Partners* (Nov. 2000) (www.commerce.gov).

5 *See Two-Way Order*, 13 FCC Rcd 19112 (1998), *recon.*, 14 FCC Rcd 12764 (1999), *further recon.*, FCC 00-244 (rel. July 21, 2000). *See also Public Notice*, Report No. 164, (MMB Feb. 1, 2001).

6 Although the rules limit the authorized bandwidth to 4 MHz for MDS Channel 2 outside of the top 50 markets, this rule has been waived on many occasions to provide the full 6 MHz bandwidth in these markets.

The industry's selection of this architecture is embodied in the so-called "Breckenridge Agreement," representing one of the more far-reaching, creative, and significant examples of telecommunications industry self-regulation. Absent this agreement, many industry observers believe that two-way service – which otherwise has no dedicated return path spectrum – could not become a reality. If MDS Channel 2 is split into two parts, the ability of MDS Channel 2 to operate will be dramatically and adversely affected, and will make MDS Channel 1 substantially less valuable due to the fact that customer premises equipment ("CPE") will be built at the same cost with less useful capacity. Under this scenario, MDS Channel 1 would lose a significant (if not fatal) amount of utility, and the Breckenridge Agreement's main purpose, to provide for an upstream channel, would be rendered meaningless.

Should MDS Channel 2 be reduced by one-third, the likely remedy would be that MDS Channel 2 licensees would either (i) receive a 2 MHz slice of the spectrum in another band, or (ii) face the modification of their licenses to specify 4 MHz of bandwidth. Either scenario is unsatisfactory.

First, should the Commission split MDS Channel 2's bandwidth between two non-contiguous bands, it would leave licensees with little of discernable valuable. To Ad Hoc's knowledge, there is no video digital encoding equipment designed to operate in just a 4 MHz bandwidth. Indeed, it is highly unlikely that any equipment manufacturer would forecast a sufficiently large and sustainable market for 4 MHz bandwidth equipment operable between 2156 and 2160 to justify even the research and development cost of such equipment, let alone the actual production and sale of it.

Additionally, migration of the 2160-2162 MHz spectrum, as suggested by the *Advanced Services NPRM*, would be to a much higher band. The displaced 2 MHz of spectrum not only

would be incapable of operating along with the remaining 4 MHz, but the costs of operation are significantly increased while coverage and reliable throughput potential are greatly reduced. Even without the technical deficiencies associated with relocating to a higher band spectrum home, most fixed wireless operators would be hard-pressed to structure any viable business plan.

Although the Commission's request for comments assumes that the 2150-2162 MHz band and the 2500-2690 MHz band are distinct, in reality MDS Channel 1 & 2 (while not mentioned together) are intertwined with the 2500-2690 MHz band operationally, and all such frequencies should be treated as equal. Indeed, all of that spectrum is governed by the same regulations, including technical and interference standards as well as BTA authorizations, which have been awarded by previous auctions.

Also, the MDS and ITFS frequencies are heavily encumbered, and the reallocation of these licensees would result in further chaos in these services. In fact, the *Interim Report* took notice of this fact, and that the MDS and ITFS services provided a vibrant competitive alternative to existing cable and DSL services to provided fixed wireless broadband services.[7] As such, the reallocation of the spectrum for 3G purposes would not only cause chaos in the industry, but would further delay competition in broadband services.

Moreover, reallocation to a higher frequency band is not a viable option. Since MDS Channels 1 & 2 are typically licensed at 100 watts, which allows for service well beyond the current 35-mile protected service area, they would lose substantial service area at higher bands unless transmit power is greatly increased, thereby increasing operational costs as well. Further,

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[7] *Interim Report*, at ii. ("The MDS industry has invested several billion dollars to develop broadband fixed wireless data systems in this band, including high-speed access to the Internet. These systems offer a significant opportunity for further competition with cable and digital subscriber line (DSL) services in the provision of broadband services in urban and rural areas. The band is used currently to provide video services for education and training in schools, health care centers and a wide variety of other institutions, as well as for the provision of a commercial video distribution service known as wireless cable. This spectrum is heavily licensed throughout the country and is ramping up for full operational use in the very near term.")

at higher frequencies, much more power consumption and many more base stations would be required to preserve a given level of throughput capacity and coverage, once again pressing higher operational and additional capital costs.[8] These cost pressures also would be manifested in CPE, which would become more expensive to build and operate.

Any effort to reallocated MDS spectrum faces the significant hurdle of finding and allocating spectrum for omni-directional stations throughout the country. This situation is much different than the Commission's experience with relocating point-to-point microwave systems for PCS. With at most two receive sites per station, and very directional transmission paths, these stations can be squeezed in together. Omni-directional stations, on the other hand, must be separated by 100 or more miles. Further with point-to-point spectrum, the equipment replacement costs for that relocation represent a small fraction, and a one-time fixed cost, of the expected cost to retool the much larger number of receive sites served by an omni-directional MDS or ITFS station. Thus, the costs in retooling both the transmission and reception equipment for MDS systems would be substantial, and would dramatically affect the business plan for every future subscriber add-on long after the initial relocation costs are incurred.

II. ALTERNATIVE PROPOSAL -- Flexible Use of MDS Channels 1 & 2 For Current Licensees

As discussed above, Ad Hoc is opposed to the relocation of the MDS and ITFS spectrum to a higher spectral band. Instead, the Commission should focus upon allowing the incumbent licensees to evolve along with technological developments, consistent with the flexible-use concept that has been the hallmark of MDS since its creation in the mid-1970s.

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[8] For example, when the Commission reallocated the Digital Electronic Messaging Service ("DEMS") from the 18 GHz band to the 24 GHz band, the Commission found it necessary to increase the authorized transmit power from 10 MHz to 40 MHz. Under the DEMS example, the Commission would have to authorize an increase of at least *four to eight times* the current authorized transmit power. *See Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service From the 18 GHz Band to the 24 GHz Band*, Order, 12 FCC Rcd 3471 (1997) ("[a]suming use of

To this end, and to allow the marketplace to better determine the use of MDS Channels 1 & 2, Ad Hoc is in favor of adding mobile and portable services to the authorized uses of MDS Channels 1 and 2, as well as other MDS and ITFS Channels. As a result, the current licensees of MDS Channels 1 & 2 would be able to initiate advanced wireless services in the 2150-2162 MHz band when and as marketplace conditions dictate, subject to technical coordination. This would be in accordance with the *Emerging Technologies* rulemaking, in that the spectrum could be used for new and innovative communications services, while not jeopardizing the ability of the current licensees to continue to provide existing services, and improved advanced services, to the public.

Indeed, the Commission needs to look no further than the symbiotic relationship between MDS and ITFS licensees. This relationship, embodied in lease agreements, could serve as an excellent vehicle for the provision of 3G-type services to the public in a more rapid fashion than a relocation or refarming plan. With notebook computers becoming smaller and smaller, and the PDA's and digital cell phones becoming more feature-rich, Ad Hoc believes there will be a blending of the three technologies creating a demand that fixed broadband wireless will address. Of course, this will be an evolutionary process, which is best served by allowing the marketplace to allocate spectrum and by offering the historical cooperation of MDS, MMDS and ITFS channel licensees to support the goal of providing the most advanced services to the public.

This change in rules to permit existing licensees the opportunity to provide mobile and portable wireless services would not strand the tremendous investment already made in fixed wireless broadband service, as would refarming the spectrum for other purposes. Any MDS/ITFS frequency relocation at this crucial juncture would destroy the key ingredients for the success of fixed broadband wireless. It would better serve the public interest and be more

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similar equipment in all other respects including transmit power, systems at 24 GHz will require approximately four times the bandwidth as at 18 GHz to maintain equivalent capacity and coverage.")

consistent with the Commission's findings in the *Policy Statement* and *Notice of Proposed Rulemaking* on secondary markets to allow existing licensees the flexibility to adapt spectrum uses over a period of time to changes in market conditions.[9]

Furthermore, the marketplace-driven migration of existing licensees to the provision of 3G Services would serve the public faster and more efficiently. Since the incumbent licensees already provide advanced wireless services, it would be far less disruptive to existing wireless broadband services to permit existing licensees and lessees to evolve services under current or existing business relationships than to refarm existing customers and reissue the same spectrum to new licensees who would have to develop service from infancy.

Additionally, the stated reasons for selecting MDS and ITFS spectrum for 3G services do not justify their wholesale relocation. U.S. wireless providers are developing capacity for 3G networks through market acquisitions and Commission auctions. For example, Verizon and AT&T supplemented their existing capacity, capacity for future advanced services as well as coverage expansion through the recent PCS C&E block auctions. Nextel continues to supplement its SMR spectrum through private and public acquisitions, and AT&T is also adding to its capacity through the use of the 2.3 GHz band.

Considering the recent controversy regarding small businesses in the PCS spectrum auctions, simply allowing MDS and ITFS spectrum to be used for 3G services affords the FCC an opportunity to permit small businesses into advanced mobile communications. It is evident that post-IMT-2000, there will be a varied 3G landscape and portfolio of services to be deployed using many different non-exclusive blocks of spectrum, *e.g.*, 800MHz, 900MHz, 1900MHz and

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[9] Indeed, migration to flexible use and higher use for existing licensees would not be unprecedented in that existing cellular operators in the 80OMHz bands (non auctioned spectrum) will be allowed to migrate to higher uses in 3G deployment as will PCS providers as well. SMR operators have already introduced mobile data services under current allocations and rules.

2300MHz. Many of these 3G systems will evolve through upgrading of existing system capacity.

Permitting incumbent licensees in the 2150-2162 MHz and 2500-2690 MHz bands to provide 3G services will ensure maximum flexibility in bringing advanced 3G-type service to the public.[10] The MDS licensee or lessee needs to reach agreement with only one channel from any two successive channel groups to deploy a 3G system. This approach also would have the least harmful effect on educators, relative to channel capacity, and would allow potentially BTA-wide coverage including, perhaps, the creation of a nationwide 3G educational network.

IV. CONCLUSION

For all of the reasons stated herein, the Commission should not reallocate either the 2500-2690 or 2160-2165 MHz bands for 3G uses. Rather, Ad Hoc urges the Commission to afford the incumbent MDS and ITFS licensees the opportunity to continue providing advanced wireless services as marketplace demands dictate.

Respectfully submitted,

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[10] For example, MDS Channels 1 & 2 could be combined with any of the following two channel group pairs could create a 24 MHz paired system, (A1&C1 or B4&C1 or G1&D1 or D4&E1 or E1&F1 or F4&GI etc.).