

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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| In the matter of |) | |
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| Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, The L-Band, and the 1.6/2.4 GHz Band |) | IB Docket No. 01-185 |
| |) | |
| 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 |
| |) | |

**COMMENTS OF
THE WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.**

The Wireless Communications Association International, Inc. (“WCA”) hereby submits its initial comments in response to the *Notice of Proposed Rulemaking* (“NPRM”) in the above-referenced proceedings.¹

With the *NPRM*, the Commission has solicited public comment on the possible terrestrial use of spectrum heretofore reserved for satellite transmissions by Mobile Satellite Service (“MSS”) licensees. For the reasons set forth below, should the Commission permit the operation of terrestrial facilities in spectrum previously allocated solely for MSS satellite use, the Commission must condition such use on compliance with rules and policies designed to assure that terrestrial users of adjacent spectrum do not suffer harmful interference.

WCA is the trade association of the broadband wireless industry. Its members include, *inter alia*, licensees of the Multipoint Distribution Service (“MDS”) and Instructional Television Fixed Service (“ITFS”) spectrum at 2150-2162 MHz and 2500-2690

¹ *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band*, FCC 01-225, IB Docket No. 01-185 (rel. Aug. 17, 2001)[hereinafter cited as “NPRM”].

MHz. The MDS channels at 2150-2162 MHz are just 3 MHz from the MSS allocation at 2165-2200 MHz, and MDS/ITFS channel A1 is immediately adjacent to the MSS “Big LEO” allocation at 2483.5-2500 MHz. As such, WCA has a vital interest in assuring that any newly-authorized terrestrial operations in the MSS bands be regulated so as not to cause harmful interference to facilities in adjacent spectrum.

The Commission clearly shares WCA’s concerns. The *NPRM* acknowledges that “[p]ermitting reuse of MSS spectrum for terrestrial services will require protection of adjacent channel and intraband operations, restrictions on tower heights and transmit power, and frequency stability.”² Thus, the *NPRM* advises that “[i]f we adopt the flexible use proposed for MSS spectrum, we propose modeling technical rules on the rules currently in place for broadband PCS.”³ WCA’s preliminary assessment is that the broadband PCS technical rules set forth in Sections 24.232 through 24.236 and 24.238 of the Commission’s Rules provide a useful starting point for limiting interference from terrestrial use of MSS spectrum, but that appropriate guardbands will be required to protect MDS and ITFS usage from interference.⁴

The discussion in Paragraphs 54 through 66 of the *NPRM* illustrates that, at this time, there are a host of unanswered technical questions as to the how MSS spectrum would be utilized for the provision of terrestrial services.⁵ Until the answers to those questions are

² *NPRM*, at ¶ 34.

³ *Id.*

⁴ However, as noted *infra*, absent the imposition of guardbands between MSS terrestrial operations and MDS/ITFS spectrum, the broadband PCS rules are not a complete solution.

⁵ *NPRM*, at ¶¶ 54-66. Moreover, it is worth noting that the Commission has not received any expression of interest by the Big LEO community to utilize the 2483.5-2500 MHz band for terrestrial services. *See id.* at ¶ 4. That is the band closest to any MDS or ITFS channels (being immediately adjacent to the 2500-2690 MHz band

provided by the proponents of terrestrial MSS operations, it is impossible for WCA to ascertain with any precision the sorts of technical restrictions on MSS terrestrial use that will be necessary to protect MDS and ITFS operations in neighboring bands.

However, even at this early stage it is clear that the *NPRM* is flawed by its failure to address the need for guardbands between MDS and ITFS (and possibly other services) and terrestrial MSS operations. Although the record in ET Docket No. 00-258⁶, the *Advanced Wireless Services* proceeding, has not yet identified precisely the size of the guardbands required between MDS and ITFS operations and third-generation mobile wireless operations (which WCA assumes will be similar to terrestrial MSS services),⁷ that record reflects a clear

allocated for MDS/ITFS operations) and thus the band most vulnerable to interference from MSS terrestrial operations.

⁶ *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 00-258, FCC 00-455 (rel. Jan. 5, 2001).

⁷ The March 30, 2001 report by the Commission's staff -- *Final Report*, "Spectrum Study of the 2500-2690 MHz Band: The Potential for Accommodating Third Generation Mobile Systems" (the "*Final Report*") -- concludes that to prevent interference between adjacent channel 3G systems and MDS/ITFS stations, guard bands of up to 4 MHz will be needed. *Final Report*, at 47-52. In response to the Commission's *Public Notice* soliciting comments from the public on the *Final Report*, "FCC Releases Staff Final Report "Spectrum Study of 2500-2690 MHz Band: The Potential for Accommodating Third Generation Mobile Systems", *Public Notice*, DA 01-786 (rel. Mar. 30, 2001), WCA noted:

WCA must take issue with the approach used in the *Final Report* for calculating the guardband necessary to protect MDS response station hubs (which are going to be the facilities most often requiring protection in the 2150-2162 MHz band). In essence, the *Final Report* concludes that a 4 MHz guardband is appropriate by making assumptions regarding the desired signal level for MDS/ITFS transmissions received at the MDS response station hub and then determining the size of the guardband necessary to yield a 0 dB desired-to-undesired signal level. While it is too early for WCA to determine whether the *Final Report's* conclusion -- that a 4 MHz guardband will protect MDS and 3G -- is correct, WCA cannot agree with the use of a desired-to-undesired signal ratio to assure protection to the MDS response station hub. In its *Report and Order* in MM Docket No. 97-217, the Commission specifically rejected the use of desired-to-undesired signal ratios to protect response station hubs and instead adopted an approach whereby an adjacent channel newcomer is required to demonstrate that the proposed facility will not increase the noise floor at a reception antenna of the response station hub by more than 45 dB. WCA submits that this approach provides a more realistic level of protection to MDS response station hubs and should be utilized in calculating the appropriate guardband between MDS at 2150-2162 MHz and any nearby 3G allocation.

consensus that there must be guardbands⁸ and that the size of those guardbands is dependent upon whether the spectrum adjacent to MDS/ITFS is used for base-to-handset communications, or for handset-to-base communications.⁹ The appropriate size for those guardbands will be dependent upon, among other things, the power levels and spectral masks required for MSS terrestrial operations (all other factors being equal, lower terrestrial MSS power levels and tighter terrestrial MSS masks translate into smaller guardbands). WCA intends to address the guardband issue in more depth if and when proponents of MSS terrestrial use provide sufficient information in response to the *NPRM* to allow a meaningful analysis.

In short, should the Commission permit terrestrial use of the MSS bands, the Commission will have to use guardbands, power limits,¹⁰ the spectral mask, and frequency stability requirements to craft an environment in which MDS and ITFS licensees will be free from interference caused by terrestrial operations on MSS spectrum. WCA looks forward to

Comments of WCA on FCC Final Report, ET Docket No. 00-258, at 4-5 (filed April 16, 2001)(footnotes omitted)(“WCA Supplemental Comments”). *See also* Comments of Sprint, ET Docket No. 00-258, at 4-5 (filed April 16, 2001).

⁸ *See, e.g.* WCA Supplemental Comments, at 4-5; Supplemental Comments of Verizon Wireless, ET Docket No. 00-258, at 7 (filed April 16, 2001); Letter from Steve Sharkey, Motorola, to Magalie Roman Salas, IB Docket No. 99-81 (filed June 21, 2001) (proposing options for 2 GHz band plan that include guardbands between MDS and MSS/3G).

⁹ *See Final Report*, at Appendix 5-2.

¹⁰ The need for appropriate power limits to limit brute force overload interference has been highlighted by the year-long dispute in IB Docket No. 95-91 over the appropriate power levels for terrestrial repeaters operating in the Digital Audio Radio Service band. Although this is an issue of importance for all bands under consideration, it is of particular concern with respect to the proposal to permit terrestrial use of MSS spectrum that is adjacent to the MDS and ITFS bands. If permitted to operate at sufficiently high power levels, terrestrial MSS transmitters could cause substantial brute force overload interference to 2.5 GHz band usage that could not be filtered out given the practical limits of technology.

assisting the Commission in developing rules and policies that assure MDS and ITFS licensees are protected against interference once proponents of terrestrial use of MSS spectrum provide further information regarding their plans.

Respectfully submitted,

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