

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

In the matter of	)	
	)	
Flexibility for Delivery of Communications by	)	IB Docket No. 01-185
Mobile Satellite Service Providers in the	)	
2 GHz Band, The L-Band, and the	)	
1.6/2.4 GHz Band	)	
	)	
Amendment of Section 2.106 of the	)	
Commission’s Rules to Allocate Spectrum	)	ET Docket No. 95-18
at 2 GHz for Use by the Mobile Satellite Service	)	

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

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

In its initial comments in this proceeding, WCA urged that “should the Commission permit the operation of terrestrial facilities in spectrum previously allocated solely for [Mobile Satellite Service (“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.”<sup>2</sup> More specifically, WCA expressed concern that terrestrial use of MSS spectrum could result in harmful interference to licensees of the Multipoint Distribution Service (“MDS”) and Instructional Television Fixed Service (“ITFS”) spectrum at 2150-2162 MHz and 2500-2690 MHz.<sup>3</sup> Although WCA indicated that “the broadband PCS technical rules set forth in

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<sup>1</sup> *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”].

<sup>2</sup> See Comments of Wireless Communications Assoc. Int’l, IB Docket No. 01-185, at 1 (filed Oct. 22, 2001)[hereinafter cited as “WCA Comments”].

<sup>3</sup> See *id.* at 1-2.

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," it also demonstrated that "appropriate guardbands will be required to protect MDS and ITFS usage from interference."<sup>4</sup>

WCA emphasized in its initial comments that "there are a host of unanswered technical questions as to the how MSS spectrum would be utilized for the provision of terrestrial services" and that [u]ntil the answers to those questions are 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."<sup>5</sup> WCA noted that the record in ET Docket No. 00-258 suggested that guardbands are essential, but that the specific size of the guardband would depend on whether the spectrum adjacent to MDS/ITFS is used for base-to-handset communications, or for handset-to-base communications, the power levels and the spectral masks required for MSS terrestrial operations.<sup>6</sup> Thus, WCA indicated that it would "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."<sup>7</sup>

WCA was not alone in expressing concerns over the potential for interference from terrestrial use of the MSS spectrum. In fact, many in the MSS community shared WCA's

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<sup>4</sup> *Id.* at 2.

<sup>5</sup> *Id.* at 2-3.

<sup>6</sup> *Id.* at 4.

<sup>7</sup> *Id.*

concern that interference to adjacent channel operations could result from terrestrial use of the MSS spectrum.<sup>8</sup>

Indeed, even those who support the terrestrial use of MSS spectrum recognize the need for such usage to be constrained in a manner that fully protects licensees in adjacent bands. However, despite the fact that the *NPRM* specifically raised the potential for interference to adjacent services, the proponents of terrestrial use of MSS spectrum provide virtually no meaningful discussion of how that interference can be avoided. For example, while Mobile Communications Holdings, Inc. urges the Commission to “promulgate appropriate rules to ensure that no adjacent or in-band licensees will be prejudiced by the provision of ATC services by MSS licensees,” it does not suggest any rules designed to accomplish that objective.<sup>9</sup> Similarly, Celsat America, Inc. acknowledges the need for the Commission to prevent harmful interference, but provides no analysis of how interference to adjacent services would be prevented.<sup>10</sup> Globalstar, which advocates terrestrial use of the Big LEO bands, asserts that “[i]nterference into services adjacent to the Big LEO bands is unlikely,” but provides no

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<sup>8</sup> See, e.g. Comments of Boeing, IB Docket No. 01-185, at 12 (filed Oct. 19, 2001)(“sharing between MSS service and an ancillary terrestrial service in the downlink band cannot be accommodated because of harmful, unresolvable interference to any MSS licensee in an adjacent band.”); Comments of Stratos Mobile Networks (USA) LLC and Marinsat Communications Network, IB Docket No. 01-185, at 7-9 (filed Oct. 22, 2001)(“using MSS spectrum for ancillary terrestrial mobile use is not possible without causing harmful interference to MSS.”); Comments of Mobile Satellite Users Assoc., IB Docket No. 01-185, at 5 (filed Oct. 22, 2001)(“MSUA is concerned at the absence of definitive technical assessments of the ancillary terrestrial applications’ potential for interference . . .”)[hereinafter cited as “MSUA Comments”]; Comments of Inmarsat Ventures PLC, IB Docket No. 01-185, at 12-16 (filed Oct. 19, 2001); Comments of Comtech Mobile Datacom Corp., IB Docket No. 01-185, at 1 (filed Oct. 19, 2001)(“CMDC urges the Commission to take appropriate steps to ensure that [terrestrial]operations do not result in harmful interference to existing and planned uses of MSS spectrum for satellite-based services.”); Comments of KITComm Satellite Communications, IB Docket No. 01-185, at 4 (filed Oct. 22, 2001)(“ATCs . . . will unavoidably and drastically alter the in-band and out-of-band interference environment for MSS operators in the same or adjacent bands.”)[hereinafter cited as “KITComm Comments”].

<sup>9</sup> Comments of Mobile Communications Holdings, Inc., IB Docket No. 01-185, at 11 (filed Oct. 22, 2001). The comments of Motient Services, Inc., *et al*, focus on terrestrial use of the MSS L-band, and do not address any of the interference issues raised by terrestrial use of the MSS bands near MDS and ITFS. See Comments of Motient Services, *et al*, IB Docket No. 01-185 (filed Oct. 22, 2001).

discussion whatsoever of possible interference to the ITFS (which is immediately adjacent to the Big LEO downlink band at 2483.5-2500 MHz). Similarly, while New ICO Global Communications (“New ICO”) asserts that terrestrial use of MSS spectrum is “unlikely to create harmful interference,” it has never even acknowledged, much less addressed, the potential for interference between terrestrial users of the Big LEO band and ITFS.<sup>11</sup>

Loral Space & Communications Ltd. advances the clearly erroneous proposition that “introduction of terrestrial uses by MSS operators need not cause harmful interference to other uses because the Commission may require terrestrial services . . . to meet existing interference protection requirements for MSS as to other services.”<sup>12</sup> Even assuming that the current rules governing MSS satellite operations were adequate to fully protect MDS and ITFS facilities (and WCA has previously demonstrated that they are not),<sup>13</sup> there can be no disputing that the introduction of terrestrial facilities into spectrum previously used for satellite services is fraught with danger. If spectrum previously reserved for satellite use is made available for terrestrial services, adjacent bands will be subject to far higher undesired signal levels from those terrestrial facilities than they would receive from the satellite transmissions. One need only look at the record before the Commission in IB Docket No. 95-91 regarding the brute force overload and

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<sup>10</sup> Comments of Celsat America, IB Docket No. 01-185, at 13 (filed Oct. 22, 2001).

<sup>11</sup> Comments of New ICO Global Communications, IB Docket No. 01-185, at 29 (filed Oct. 22, 2001)[hereinafter cited as “New ICO Comments”].

<sup>12</sup> Comments of Loral Space & Communications Ltd., IB Docket No. 01-0185, at 9 (filed Oct. 22, 2001).

<sup>13</sup> See Petition of Wireless Communications Association International for Reconsideration, IB Docket No. 99-81 (filed Nov. 3, 2000); Reply Comments of Wireless Communications Association International, IB Docket No. 99-81 (filed Jan. 8, 2001). See also *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*, FCC 01-224, IB Docket No. 99-81, at ¶ 36 (rel. Aug. 20, 2001)(“We also note that the Wireless Communications Association International, Inc., filed a timely petition for reconsideration of the rules regarding protecting MDS operations at 2150-2162 MHz from out-of-band emissions in the 2 GHz MSS downlinks at 2165-2200 MHz. To the extent this issue is not rendered moot by actions in this proceeding, it will be considered in a future Memorandum Opinion and Order in IB Docket No. 99-81”).

intermodulation interference that Wireless Communications Service licensees will suffer from terrestrial use of nearby satellite Digital Audio Radio spectrum to recognize the importance of adopting restrictions on terrestrial use of MSS spectrum that fully protect services in adjacent bands.

Both New ICO and TMI Communications and Company support the concept of applying to terrestrial MSS facilities the same limits on out-of-band emissions, transmit power and antenna heights as are applied to broadband PCS.<sup>14</sup> Yet their confidence that such steps alone can avoid interference to adjacent bands is belied by the record developed in response to the *Further Notice of Proposed Rulemaking* in ET Docket No. 00-258. While there is no clear consensus in that proceeding as to the specific size of the guardbands that are required between MDS stations and 3G stations (which presumably will operate in accordance with the broadband PCS rules), the record leaves no doubt that some guardband is required in order to avoid interference.<sup>15</sup> The proponents of MSS terrestrial use have failed to provide any technical information suggesting that terrestrial use of MSS spectrum will be sufficiently different in nature from 3G or PCS services that guardbands are not required between any MSS spectrum used for terrestrial services and MDS/ITFS.

Constellation Communications Holdings, Inc. (“Constellation”) has suggested that rather than applying the broadband PCS rules to terrestrial use of MSS spectrum, upstream (subscriber-to-base station) use be governed by the existing MSS handset rules and downstream terrestrial

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<sup>14</sup> See New ICO Comments, at 50; Comments of TMI Communications and Co., IB Docket No. 01-185, at 3 (filed Oct. 22, 2001).

<sup>15</sup> See, e.g. Comments of Verizon Wireless, ET Docket No. 00-258, at 9-10 (filed Oct. 19, 2001); Comments of Motorola, ET Docket No. 00-258, at 15-16 (filed Oct. 22, 2001). See also Comments of Cingular Wireless, ET Docket No. 00-258, at 11-13 (filed Oct. 22, 2001); Comments of Nokia, ET Docket No. 00-258, at 3 (filed Oct. 22,

(base station-to-subscriber) usage be subject to the technical rules applicable to the adjacent services.<sup>16</sup> At the outset, Constellation's claim that there is no need to revisit the Commission's existing technical rules applicable to MSS handsets is seriously flawed.<sup>17</sup> Constellation's argument, in a nutshell, is that "[t]he Commission has already conducted extension [*sic*] technical examinations of potential interference in its rulemaking proceedings to establish the 1.6/2.4 GHz and 2 GHz MSS . . . ."<sup>18</sup> What Constellation forgets is that in establishing those rules, the Commission only considered potential interference from handsets into those bands adjacent to the bands specifically reserved for MSS uplink transmissions. Now, however, it is proposed that MSS licensees be permitted to use the MSS downlink spectrum for handset-to-terrestrial base station transmissions. As a result, this proceeding represents the first time the Commission has considered whether MDS and ITFS licensees operating adjacent to MSS spectrum would suffer interference from MSS subscriber handsets.

WCA is dubious that if MSS spectrum is opened for terrestrial use, the minimal MSS handset rules can provide adequate protection against interference to nearby MDS and ITFS operations. When the Commission recently permitted MDS and ITFS licensees to utilize their spectrum for upstream communications, it adopted a complex series of rules designed to assure that upstream transmissions do not interfere with neighboring MDS and ITFS facilities.<sup>19</sup> Not

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2001); Comments of Cellular Telecommunications & Internet Ass'n., ET Docket No. 00-258, at 3 (filed Oct. 22, 2001).

<sup>16</sup> See Comments of Constellation Communications Holdings, IB Docket No. 01-185, at 35-37 (filed Oct. 22, 2001).

<sup>17</sup> See , at 35-36.

<sup>18</sup> *Id.* at 35.

<sup>19</sup> See *Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 13 FCC Rcd 19112 (1998), *recon.*, 14 FCC Rcd 12764 (1999), *further recon.*, 15 Rcd 14566 (2000). While WCA would be the first to admit that some of the rules have proven to be unduly restrictive and/or burdensome and should be modified in the future, WCA suspects

only did the Commission impose power and out-of-band emissions limitations on upstream operations, but it adopted a complex base station-by-base station licensing scheme that requires the preparation of detailed interference analyses to demonstrate protection to any previously proposed or licensed facility operating within 100 miles and within 6 MHz.<sup>20</sup> In addition, the Commission imposed an obligation on those causing any adjacent channel or brute force overload interference to effectuate a cure.<sup>21</sup> There is nothing in the record that even remotely suggests that the minimal existing technical rules applicable to MSS handsets alone can replace the existing rules designed to protect MDS and ITFS licensees from interference caused by upstream operations in nearby bands.

While, as noted above, far more study of guardband requirements is needed before any conclusions can be reached, Constellation's proposal that MSS downstream terrestrial use be governed by the rules of adjacent services is worthy of further exploration. However, it is essential for the Commission to recognize that in the MDS/ITFS downstream environment (as in the upstream environment discussed above), interference protection is provided not just through restrictions on power and out-of-band emissions. The Commission has imposed a variety of additional rules to assure that the operation of MDS and ITFS booster stations (the functional equivalent of downstream cellular facilities) avoid adjacent channel and brute force overload interference.<sup>22</sup> All of those provisions are part and parcel of the MDS/ITFS interference

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the existing MDS/ITFS regulatory scheme will prove far closer to what is required to avoid interference from MSS terrestrial use than the minimal MSS handset rules.

<sup>20</sup> See 47 C.F.R. §§ 21.909, 74.939 (2000).

<sup>21</sup> See 47 C.F.R. §§ 21.909(g)(7) and (8), 74.939(g)(7) and (8)(2000).

<sup>22</sup> See, e.g. 47 C.F.R. §§ 21.913, 74.985 (2000).

protection scheme and there is no reason apparent from the current record why MSS licensees operating terrestrially near the MDS and ITFS allocations should be exempt from any of them.

WCA's view that far more information regarding planned terrestrial usage of MSS spectrum is required in order to make a definitive assessment of the interference potential was widely shared. For example, the Mobile Satellite Users Association argued that "the record on this is incomplete, and that the FCC should encourage proponents to provide appropriate studies to substantiate their claims of non-interference."<sup>23</sup> Along similar lines, the Wireless Communications Division of the Telecommunications Industry Association urged the Commission "to require 2 GHz MSS proponents to provide particular technical information surrounding the ancillary terrestrial network, so that interference effects can be completely understood by the other affected licensees of the 2 GHz band."<sup>24</sup>

In short, there is a general recognition among the proponents of terrestrial use of MSS spectrum that adjacent bands must be afforded interference protection. However, far more information is required regarding the proposed terrestrial deployments before WCA, or the Commission, can craft a regulatory scheme that provides the full interference protection to which adjacent services are entitled. Thus, WCA urges the Commission to encourage those who advocate terrestrial use of MSS spectrum to file both detailed further information regarding their

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<sup>23</sup> Comments of Mobile Satellite Users Association, IB Docket No. 01-185, at 5 (filed Oct. 22, 2001). Along similar lines, KITComm Satellite Communications Ltd. argued that "ATC proponents should be required to lay out in concrete technical terms how they propose to use ATCs while at the same time protecting the operations of other satellite systems not using ATCs in the same or adjacent bands." Comments of KITComm Satellite Communications, IB Docket No. 01-185, at 4 (filed Oct. 22, 2001).

<sup>24</sup> Comments of the Wireless Communications Division of the Telecommunications Industry Association, IB Docket No. 01-185, at 1-2 (filed Oct. 22, 2001).

plans and detailed analyses demonstrating that MDS and ITFS services will not be adversely impacted by such plans.

Respectfully submitted,

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