Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74, and	)	WT Docket No. 03-66
101 of the Commission's Rules to Facilitate	)	RM-11614
the Provision of Fixed and Mobile	)	
Broadband Access, Educational and Other	)	
Advanced Services in the 2150-2162	)	
and 2500-2690 MHz Bands	)	

COMMENTS OF GLOBALSTAR, INC.

Globalstar, Inc. ("Globalstar") hereby comments on the Federal Communications Commission's ("Commission's") Fourth Further Notice of Proposed Rulemaking in the above-captioned proceeding.[1] In the *FNPRM,* the Commission seeks comment on the Wireless Communications Association International's ("WCA's") proposed out-of-band emission ("OOBE") limits for mobile digital devices in the 2.5 GHz band.[2] The Commission should reject these relaxed OOBE limits, which would result in substantial harm to Globalstar and its mobile satellite service ("MSS") customers, including consumers and public safety users. Globalstar's Big LEO MSS customers may experience loss of service in rural and remote areas where MSS often constitutes the only means of mobile communication. To prevent this public interest harm, the Commission should maintain its existing OOBE limits in the 2.5 GHz band.

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1 *Amendment of Parts 1 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 MHz Bands*, Fourth Further Notice of Proposed Rulemaking, WT Docket No. 03-66 (rel. May 27, 2011) ("*FNPRM*").

2 *See* Petition for Rulemaking, Wireless Communications Association International, RM-11614 (Oct. 22, 2010) ("WCA Petition").

I. THE PROPOSED RULE CHANGES WOULD RESULT IN SUBSTANTIAL HARM TO GLOBALSTAR AND ITS CUSTOMERS, INCLUDING CONSUMERS AND PUBLIC SAFETY USERS

In 1995, the FCC licensed Globalstar to construct, launch, and operate a "Big LEO" MSS system.[3] Globalstar is authorized for uplink transmissions (mobile earth stations to satellites) in the L band at 1610-1618.725 MHz, and for downlink transmissions (satellites to mobile earth stations) in the S band at 2483.5-2500 MHz, a band segment that overlaps with the 2.5 GHz band at 2496-2690 MHz. Today, Globalstar uses its global non-geostationary ("NGSO") MSS constellation to provide affordable, high-quality mobile satellite voice and data services to over 400,000 customers in 120 countries.[4]

Following the deployment of its second-generation MSS network, Globalstar's core mission will remain the provision of MSS connectivity to consumers and public safety users in rural and remote areas of the United States and globally.[5] As the Commission has stated, satellite technology "can be particularly important for serving remote, unserved, and underserved

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[3] *Application of Loral/Qualcomm Partnership, L.P. for Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, Order and Authorization, 10 FCC Rcd 2333 (IB 1995); *see also Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking, 22 FCC Rcd 19733, ¶¶ 8, 18-20 (2007).

[4] Globalstar in recent years has focused on the development of affordable, consumer-oriented devices and services, most notably offering an innovative MSS device – the SPOT Satellite GPS Messenger – that plays a critical role in the provision of emergency and safety-of-life services to individual consumers beyond terrestrial wireless reach.

[5] On October 19, 2010, Globalstar launched the first six satellites of its second-generation MSS constellation. Globalstar plans to complete the deployment of its new constellation by the end of 2011, with three more launches of six satellites each. Globalstar expects to become the first global LEO MSS voice and data company to deploy a state-of-the-art, second-generation MSS system. Its new second-generation MSS system is expected to support reliable voice, two-way data, and messaging services well into the next decade.

communities nationwide, including those on Tribal lands."[6] In the event of a natural or man-made disaster, MSS networks such as Globalstar's Big LEO MSS system can offer communications capabilities to first responders and other public safety personnel in areas where terrestrial facilities are either non-existent or temporarily unavailable. The Commission has "repeatedly noted the ability of MSS systems to protect public safety,"[7] and has pointed to "the importance of maintaining MSS to provide services . . . to public safety and Federal government agencies, to rural areas, and during natural disasters."[8]

Given the enormous public interest benefits of MSS, the Commission has emphasized the need to protect Big LEO MSS operations from harmful interference from adjacent-band systems in the 2.5 GHz band. In particular, the Commission has stated that "the BRS/EBS out-of-band emission limits 'should allow MSS providers to operate without unnecessary restrictions or significant interference in the 2483.5-2495 MHz band.'"[9] In the *FNPRM*, the Commission now

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6 *Improving Communications Services for Native Nations*, Notice of Inquiry, 26 FCC Rcd 2672, ¶ 56 (2011).

7 *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 Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶ 28 n.61 (2003) ("*2003 ATC Order*"), *citing Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, Notice of Proposed Rulemaking, 10 FCC Rcd 3230, ¶ 7 (1995) ("MSS can provide nationwide public safety coverage. . . . [and] MSS could satisfy important requirements that cannot be economically satisfied by other means.").

8 *Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Notice of Proposed Rulemaking and Notice of Inquiry, 25 FCC Rcd 9481, ¶ 33 (2010).

9 *FNPRM* ¶ 15 (citing *Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands; 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*

"seek[s] further comment on whether adopting [WCA's] requested OOBE limits would increase the potential for harmful interference into the MSS" band.[10]

As Globalstar demonstrated in its Opposition to WCA's October 2010 petition for rulemaking,[11] WCA's proposed OOBE limits would greatly increase the probability of harmful interference to Big LEO MSS operations below 2495 MHz.[12] (Globalstar attaches its Opposition to WCA's petition and hereby respectfully requests that it be incorporated into the record of WT Docket No. 03-66.) If the Commission adopted WCA's proposed OOBE limits, terrestrial mobile devices operating on Channel BRS-1 at 2496-2502 MHz and other nearby 2.5 GHz channels could transmit significantly greater levels of RF energy into Globalstar's MSS downlink spectrum at 2483.5-2495 MHz. As explained in the Technical Appendix to Globalstar's Opposition – the only engineering analysis filed to date that addresses this MSS interference issue – this increased OOBE from 2.5 GHz mobile devices may de-sensitize Globalstar's MSS receivers and prevent its MSS customers from receiving service.[13] An MSS handset receiving a satellite signal at 2483.5-2490.5 MHz may require up to 7.5 km of geographic separation from terrestrial mobile devices at 2.5 GHz to avoid this interference and

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Wireless Systems, Report and Order, Fourth Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 13356, ¶ 74 (2004).

10 *FNPRM* ¶ 15. *See also id.* ¶ 1 (asking whether "the proposed changes can be made without increasing the potential for harmful interference to existing users in the 2.5 GHz band and adjacent bands.").

11 Opposition of Globalstar, Inc., RM-11614 (Dec. 6, 2010) ("Opposition").

12 Consistent with WCA's request, the Commission proposes to amend Section 27.53(m)(4) of its rules by relaxing the OOBE limits for mobile digital devices in the 2.5 GHz band, from 43 + 10 log (P) dB to 40 + 10 log (P) dB at the channel edges. *See FNPRM* ¶ 12; 47 C.F.R. § 27.53(m)(4). The Commission also proposes a 43 + 10 log (P) dB attenuation factor beyond 5 MHz from the channel edges, and a 55 + 10 log (P) dB attenuation factor at "X" MHz from the channel edges, where "X" is the greater of 6 MHz and the actual channel bandwidth. *FNPRM* ¶ 12.

13 Opposition at 5-6, Technical Appendix at 2.

enjoy reliable MSS reception, while an MSS handset receiving a satellite signal at 2490.5-2495 MHz may require a geographic separation of up to 10.5 km.[14] As the number of terrestrial mobile devices operating at a particular location increased, so would the required separation distance for an MSS handset.[15]

In areas affected by interference, MSS customers expecting reliable satellite service may be unable to use their handsets in conjunction with Globalstar's second-generation network.[16] This lack of MSS connectivity could trigger particularly severe consequences during natural or man-made disasters and other emergencies, when terrestrial networks may be damaged and unavailable and an MSS handset's ability to receive a signal might have life-or-death implications. Globalstar urges the Commission to prevent such public interest harm by preserving the existing OOBE limits at 2.5 GHz and maintaining sufficient interference protection for its customers, including consumers and public safety users.[17]

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[14] Opposition at 6, Technical Appendix at 2-3.

[15] Opposition at 6, Technical Appendix at 2-3. In its December 2010 response to Globalstar's Opposition, WCA claimed that its proposed OOBE limits would be unlikely to result in interference to MSS operations under real-world conditions. Reply Comments of Wireless Communications Association Int'l, RM-11614, at 7-9 (Dec. 16, 2010) ("WCA Reply Comments"). WCA has provided no formal technical analysis, however, in support of this claim. Similarly, WCA in its Petition and again in its Reply Comments asserts that it would be difficult or impossible to design smartphones and other next-generation mobile devices using 20 MHz or wider channels that will comply with the existing OOBE limits at 2.5 GHz, but it fails to substantiate this claim with any formal engineering analysis. *See* WCA Petition at 5; WCA Reply Comments at 10-11.

[16] Globalstar's SPOT Satellite GPS Messenger is a one-way device that operates in the L band, and operation of the SPOT and other simplex MSS devices would not be affected by the relaxation of OOBE limits at 2.5 GHz.

[17] As Globalstar stated in its Opposition, if the Commission ultimately adopts WCA's proposed OOBE limits, it should apply the same OOBE rules to terrestrial operations in Globalstar's authorized terrestrial use spectrum at 2483.5-2495 MHz. Opposition at 8 n.14. There would be no legitimate basis for applying a different OOBE standard to terrestrial operations in Globalstar's spectrum.

II. CONCLUSION

For the aforementioned reasons, the Commission should maintain the existing OOBE limits for terrestrial mobile services in the 2.5 GHz band.

Respectfully submitted,

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July 7, 2011

ATTACHMENT

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Wireless Communications Association Int'l	)	RM-11614
Petition to Amend Section 27.53(m) of the	)	
Commission's Rules	)	

OPPOSITION OF GLOBALSTAR, INC.

Globalstar, Inc. ("Globalstar") hereby opposes the above-captioned Petition for Rulemaking from the Wireless Communications Association International ("WCA"). Globalstar urges the Federal Communications Commission ("FCC" or "Commission") to reject WCA's proposal for relaxation of the out-of-band emission limits ("OOBE") applicable to mobile digital devices in the 2.5 GHz band.[1] Adoption of WCA's requested rule changes would cause substantial harm to Globalstar and its mobile satellite service ("MSS") customers, including consumers and public safety users. Relaxed OOBE limits in the 2.5 GHz band would result in extensive "exclusion zones" where Globalstar's customers would be unable to receive service, including in rural and remote areas where MSS often constitutes the only means of mobile communication. Accordingly, the Commission should deny WCA's request for a rulemaking proceeding and maintain its existing OOBE limits in the 2.5 GHz band.

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[1] Petition for Rulemaking, Wireless Communications Association International, RM-11614 (Oct. 22, 2010) ("WCA Petition").

I. GLOBALSTAR'S GLOBAL MOBILE SATELLITE SERVICE NETWORK

In 1995, the FCC authorized Globalstar to construct, launch, and operate a "Big LEO" MSS system.[2] Globalstar is licensed for uplink transmissions (mobile earth stations to satellites) in the L band at 1610-1618.725 MHz, and for downlink transmissions (satellites to mobile earth stations) in the S band at 2483.5-2500 MHz.[3] Since its founding, Globalstar has invested more than $5 billion toward the development of its global MSS network, and it remains committed to providing cutting-edge MSS offerings to an expanding range of customers in the United States and throughout the world. Today, Globalstar uses its global non-geostationary ("NGSO") MSS constellation to provide affordable, high-quality mobile satellite voice and data services to over 400,000 customers in 120 countries.[4]

On October 19, 2010, Globalstar launched the first six satellites of its second-generation MSS constellation. By 2012, Globalstar expects to become the first global LEO MSS voice and data company to deploy a state-of-the-art, second-generation MSS network, one that is expected to support reliable and effective voice and data services at least until 2025. With its new MSS constellation and ground infrastructure, Globalstar will be able to provide current and future

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2 *Application of Loral/Qualcomm Partnership, L.P. for Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, Order and Authorization, 10 FCC Rcd 2333 (IB 1995); *see also Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking, 22 FCC Rcd 19733, ¶¶ 8, 18-20 (2007).

3 Iridium is authorized to share spectrum with Globalstar at 1617.775-1618.725 MHz.

4 In recent years, Globalstar has focused on the development of affordable, consumer-oriented devices and services, most notably offering an innovative MSS device – the SPOT Satellite GPS Messenger – that plays a critical role in the provision of emergency and safety-of-life services to individual consumers beyond terrestrial wireless reach. The SPOT is a one-way device that transmits in the L band, and operation of the SPOT and other simplex MSS devices would not be affected by WCA's proposed relaxation of OOBE limits at 2.5 GHz.

customers with new service features including advanced (and affordable) voice, two-way data, and messaging services.

Following the deployment of its second-generation MSS network, Globalstar's core mission will remain the provision of MSS connectivity to consumers and public safety users in rural and remote areas of the United States and globally. The Commission has recognized that MSS offers "an excellent technology for delivering basic and advanced telecommunication services to unserved, rural, insular or economically isolated areas."[5] Mobile satellite services provided by Globalstar and other operators continue to play a critical role in the provision of emergency and safety-of-life services. In the event of a natural or man-made disaster, MSS systems such as Globalstar's Big LEO MSS network can provide communications capabilities to first responders and other public safety personnel in areas where terrestrial facilities are either non-existent or temporarily unavailable. Accordingly, the Commission has "repeatedly noted the ability of MSS systems to protect public safety,"[6] and has pointed to "the importance of maintaining MSS to provide services . . . to public safety and Federal government agencies, to

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5 *Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band,* Report and Order, 15 FCC Rcd 16127, ¶ 32 (2000).

6 *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 Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶ 28 n.61 (2003) ("*2003 ATC Order*"), *citing Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, Notice of Proposed Rulemaking, 10 FCC Rcd 3230, ¶ 7 (1995) ("MSS can provide nationwide public safety coverage. . . . [and] MSS could satisfy important requirements that cannot be economically satisfied by other means."); *Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band*, Notice of Proposed Rulemaking, 11 FCC Rcd 11675, ¶ 12 (1996) ("MSS can . . . meet rural public safety needs and provide emergency communications to any area in times of emergencies and natural disasters.").

rural areas, and during natural disasters."[7] Consistent with these findings, Globalstar believes that its second-generation MSS offerings will provide great benefits to consumers and public safety entities in rural and remote areas around the United States and the rest of the world.

II. WCA'S PROPOSED RULE CHANGES WOULD CAUSE SUBSTANTIAL HARM TO GLOBALSTAR AND ITS CUSTOMERS, INCLUDING CONSUMERS AND PUBLIC SAFETY USERS

WCA's proposed relaxation of OOBE limits at 2.5 GHz would threaten Globalstar's core mission of providing MSS connectivity in rural and remote areas. To accommodate the use of wider channel bandwidths at 2.5 GHz, WCA requests that the Commission amend Section 27.53(m)(4) of its rules by relaxing the OOBE limits for mobile digital devices in the 2.5 GHz band, from 43 + 10 log (P) dB to 40 + 10 log (P) dB at the channel edges.[8] WCA also proposes a 43 + 10 log (P) dB attenuation factor beyond 5 MHz from the channel edges, and a 55 + 10 log (P) dB attenuation factor at "X" MHz from the channel edges, where "X" is the greater of 6 MHz and the actual channel bandwidth. In addition, WCA requests that the Commission allow a resolution bandwidth of 2 percent for mobile digital stations in Section 27.53(m)(6).[9]

In its petition, WCA claims that any increased risk of interference from its proposal would not be "harmful."[10] Globalstar strongly disagrees with this view.[11] The Commission

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7 *Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Notice of Proposed Rulemaking and Notice of Inquiry, 25 FCC Rcd 9481, ¶ 33 (2010) ("*NPRM/NOI*").

8 *See* 47 C.F.R. § 27.53(m)(4). The existing OOBE limit of 43 + 10 log (P) dB in the 2.5 GHz band is consistent with the OOBE limit in the broadband PCS band at 1850-1990 MHz. *See* 47 C.F.R. § 24.238(a).

9 *See* 47 C.F.R. § 27.53(m)(6). While WCA states that its proposed OOBE limits have been incorporated into the 3GPP standard for mobile devices at 2.5 GHz (WCA Petition at 8-10), neither the ITU nor any other national administration has formally adopted such technical requirements.

10 WCA Petition at 6.

adopted the current OOBE limits at 2.5 GHz in order to "allow MSS providers to operate without unnecessary restrictions or significant interference in the 2483.5-2495 MHz band."[12] Were the Commission now to relax the OOBE limits at 2.5 GHz as requested, such action would cause significant harm to Globalstar and its MSS customers, including consumers and public safety users. Under WCA's proposal, terrestrial mobile devices operating on Channel BRS-1 at 2496-2502 MHz and other nearby 2.5 GHz channels could transmit significantly greater levels of RF energy into Globalstar's MSS downlink spectrum at 2483.5-2495 MHz. Globalstar's MSS handsets are designed with high-sensitivity receivers in order to enable communications with its LEO satellites, and this increased OOBE from 2.5 GHz mobile devices would de-sensitize these MSS receivers and prevent Globalstar's MSS customers from receiving service. As described in the attached Technical Appendix, assuming that the 2.5 GHz terrestrial devices in question were transmitting OOBE up to the limits proposed by WCA, the resulting interference would be substantial. As shown in Figure 1 of the Appendix, in the 2490.5-2495 MHz band segment, the operation of such a terrestrial mobile device at 2.5 GHz would result in emissions of -10 dBm/MHz into a Globalstar MSS handset's receiver, an increase of at least 3 dB from what is currently permitted under the Commission's OOBE limits. In the 2483.5-2490.5 MHz band segment, the operation of such a terrestrial device would result in emissions of -13 dBm/MHz

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[11] Globalstar does not oppose and takes no position on the relaxation of rules governing the transmission of OOBE into other Broadband Radio Service and Educational Broadband Service channels above 2500 MHz.

[12] *Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands; 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*, Report and Order, Fourth Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 13356, ¶ 74 (2004).

into a Globalstar MSS handset's receiver, an increase of at least 12 dB from what is allowed under the existing OOBE limits.[13]

As explained in the Technical Appendix, this OOBE interference would likely result in extensive "exclusion zones" where Globalstar's customers would be unable to receive satellite service. As shown in Figure 2 of the Appendix, if a terrestrial mobile device operating at the 2496 MHz band edge were transmitting OOBE up to WCA's proposed limits, an MSS handset receiving a satellite signal at 2483.5-2490.5 MHz would require 7.5 km of geographic separation from that terrestrial device in order to avoid interference and enjoy reliable MSS reception. A geographic separation of 10.5 km would be required for an MSS handset receiving a satellite signal at 2490.5-2495 MHz. Significantly, as the number of terrestrial mobile devices operating at a particular location increased, so would the required separation distance for an MSS handset. As indicated in Figure 2 of the Appendix, if ten terrestrial mobile devices were operating in the same vicinity, the necessary separation distance for an MSS handset receiving a satellite signal at 2483.5-2490.5 MHz would be 24 km.

Globalstar recognizes that only limited public interest harm would result from exclusion zones in urban areas, where terrestrial wireless service is generally available and customers are unlikely to heavily utilize Globalstar's MSS offerings in any event. Unfortunately, these exclusion zones would not be limited to urban environments. As WCA points out in its petition, terrestrial mobile devices typically "operate at full power when they are in cell edge regions of

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[13] Under WCA's proposed OOBE limits, terrestrial mobile devices operating toward the 2496 MHz band edge could also cause interference to terrestrial mobile handsets operating in Globalstar's authorized terrestrial use spectrum at 2483.5-2495 MHz. Such interference could jeopardize the use of Globalstar's MSS spectrum for terrestrial mobile broadband operations. As Globalstar has described, its spectrum otherwise could be added to the nation's broadband "spectrum inventory" more quickly than any other band identified in the National Broadband Plan. *See, e.g.*, Comments of Globalstar, Inc., ET Docket No. 10-142, at 8-9 (Sep. 15, 2010).

the coverage area," and, as a result, these MSS "dead zones" would extend well beyond the edges of 2.5 GHz operators' terrestrial wireless footprints. In fact, in the United States, these exclusion zones would likely encompass thousands of square miles of rural and remote territory adjacent to terrestrial service footprints, including the very areas in which MSS is the only available means of mobile communication.

The unavailability of Globalstar's second-generation MSS offerings in these rural and remote areas would cause substantial public interest harm. In areas affected by interference, MSS customers expecting reliable satellite service would be unable to use their Globalstar handsets. This lack of connectivity could trigger particularly severe harm during natural or man-made disasters and other emergencies, when an MSS handset's ability to receive a signal might have life-or-death consequences. In addition, in disasters or emergencies where terrestrial service in a particular area was rendered unavailable, interference from 2.5 GHz terrestrial devices operating in adjacent, unaffected areas might prevent first responders and other public safety personnel from being able to use Globalstar's MSS capability for back-up mobile communications within the disaster zone. These terrestrial transmissions would disrupt Globalstar's satellite service just at the time when MSS connectivity was needed most.

Certainly, this potential for interference-induced MSS exclusion zones in rural and remote areas was not anticipated by Globalstar as it invested more than $1 billion to develop and deploy its second-generation MSS network. Globalstar urges the Commission to avoid these public interest harms by maintaining the existing OOBE limits at 2.5 GHz and ensuring that Globalstar's customers, including consumers and public safety users, enjoy sufficient protection

from harmful interference. To this end, the Commission should expeditiously deny WCA's petition and request for a rulemaking proceeding.[14]

III. CONCLUSION

For the aforementioned reasons, the Commission should deny WCA's petition and request for a rulemaking proceeding on the relaxation of OOBE limits for terrestrial mobile services in the 2.5 GHz band.

Respectfully submitted,

/s/ L. Barbee Ponder IV
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December 6, 2010

[14] If the Commission issues a notice of proposed rulemaking and ultimately adopts WCA's proposed OOBE limits, it should apply the same OOBE rules to terrestrial operations in Globalstar's authorized terrestrial use spectrum at 2483.5-2495 MHz. There would be no legitimate basis for applying a different OOBE standard to terrestrial operations in Globalstar's spectrum.

Certificate of Service

I hereby certify that on this 6th day of December, 2010, I caused a true and correct copy of the foregoing Opposition of Globalstar, Inc., together with the attached Technical Appendix, to be mailed by first class U.S. mail, postage prepaid, to:

Fred Campbell
President and CEO
Wireless Communications Association International
1333 H Street NW, #700 West
Washington, DC 20005

/s/ L. Barbee Ponder IV
L. Barbee Ponder IV

ATTACHMENT

TECHNICAL APPENDIX

In its petition for rulemaking, the Wireless Communications Association International ("WCA") proposed the relaxation of the Federal Communications Commission's limits on out-of-band emissions ("OOBE") for mobile digital devices in the 2.5 GHz band. Specifically, WCA requests that the Commission modify Sections 27.53(m)(4) and 27.53(m)(6) of the Commission's rules as shown in Table 1 below.

Spectrum emission limit (dBm)/ Channel bandwidth							
Δf_{OOB} (MHz)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Measurement bandwidth
± 0-1	-10	-13	-15	-18	-20	-21	30 kHz
± 1-2.5	-10	-10	-10	-10	-10	-10	1 MHz
± 2.5-2.8	-25	-10	-10	-10	-10	-10	1 MHz
± 2.8-5		-10	-10	-10	-10	-10	1 MHz
± 5-6		-25	-13	-13	-13	-13	1 MHz
± 6-10			-25	-13	-13	-13	1 MHz
± 10-15				-25	-13	-13	1 MHz
± 15-20					-25	-13	1 MHz
± 20-25						-25	1 MHz

Table 1 WCA Proposed Out of Band Emission Limits for Band 7, 38 and Band 41

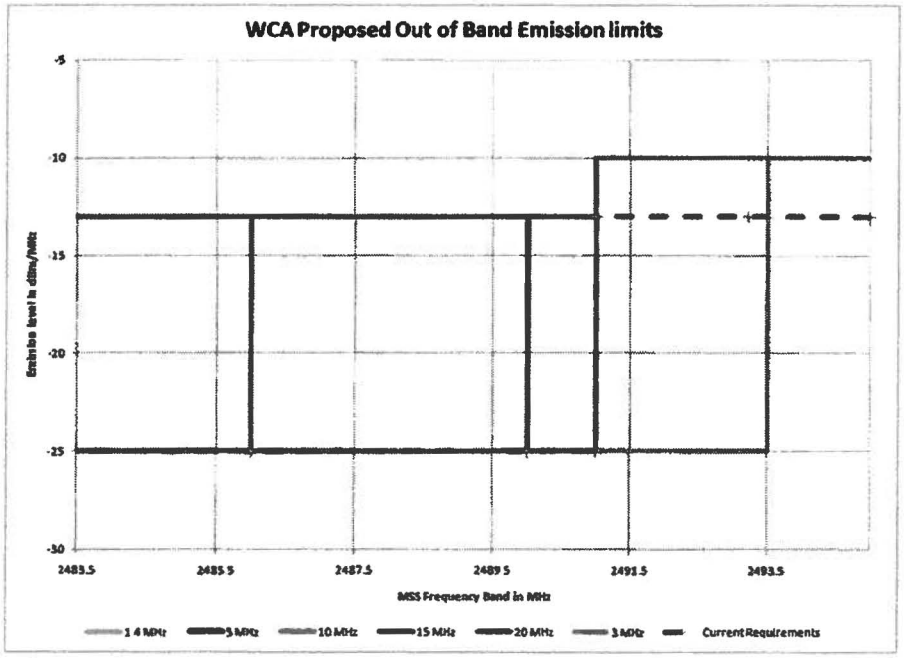

Figure 1 WCA Proposed Out of Band Emission Limits in MSS Band

The Commission has allocated the 2483.5-2495 MHz band segment, adjacent to the 2.5 GHz band, to MSS on a primary basis. The 2496-2500 MHz band segment is allocated to MSS on a secondary basis. The effective emissions in the primary MSS band at 2483.5-2495 MHz (based on the OOBE limits in Table 1) are shown in Figure 1. As seen in Figure 1, in the 2490.5-2495 band segment, operation of a single mobile digital handset will result in emissions of -10 dBm/MHz into an MSS handset's receiver (an increase of at least 3 dB from original emissions levels). In the 2483.5-2490.5 MHz band segment, a single mobile device operating in the 2.5 GHz band will result in emissions of -13 dBm/MHz into an MSS handset's receiver (an increase of at least 12 dB from original emissions levels). As WCA indicates in its petition at page 7, "[t]ypically, mobile devices only operate at full power when they are in cell edge regions of the coverage area." Therefore, MSS handsets will experience the most interference in areas adjacent to 2.5 GHz operators' terrestrial wireless footprints, where MSS is relied on as potentially the only means of mobile communication.

Figure 2 shows the separation distances required for a MSS handset to operate with the interference levels currently allowed by the Commission in the primary allocated MSS band. This level is defined as 1% of $\Delta T/T$,[1] which is -133 dBm/1.23 MHz. As MSS handsets are designed with high sensitivity receivers to communicate with LEO satellites, the receivers can be de-sensitized with the high interference from terrestrial mobile digital devices operating in the 2.5 GHz band. As shown in Figure 2, a separation of 7.5 km would be required from a single terrestrial mobile handset in order for an MSS handset to operate satisfactorily and provide reliable service. A separation of 10.5 km would be required for an MSS handset operating in the band 2490.5 to 2495 MHz. This separation distance would grow quickly in response to increases in the number of terrestrial mobile devices at 2.5 GHz that are designed to meet WCA's proposed OOBE limits. As shown in Figure 2, the required separation distance grows to 24 km if there are 10 handsets operating in the cell edge regions with the -13 dBm/MHz out of band emission level in the band 2483.5-2490.5 MHz. These large separation requirements will create

[1] As stated in ITU-R S.1432, "according to the RR, non-primary allocated services and all other emissions must operate on a non-interference basis, allotting 1% of the satellite system noise to these non-primary sources of interference should adequately accommodate these interferers."

substantial exclusion zones for MSS and will prove harmful to the users relying on this service as their primary source of communication.

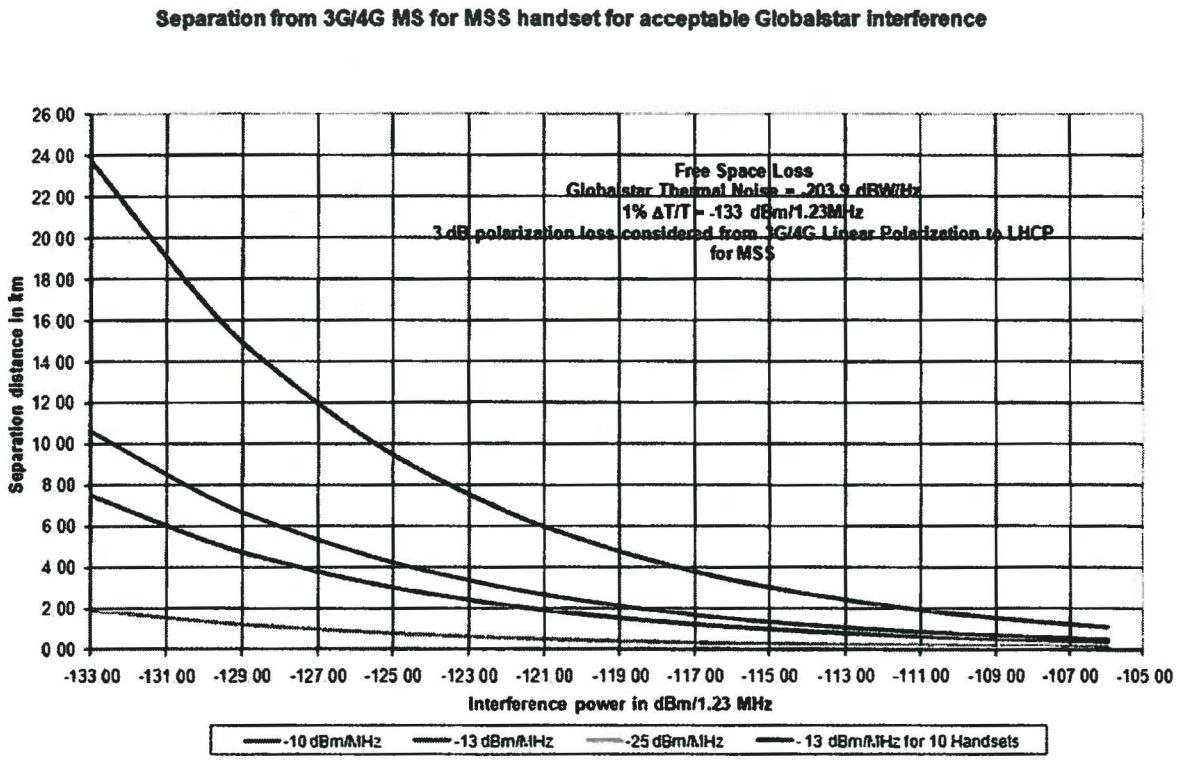

Figure 2 Required Separation Between Terrestrial Mobile Devices at 2.5 GHz and Globalstar MSS Handsets

Declaration

I hereby certify under penalty of perjury that the engineering statements made in the foregoing Opposition of Globalstar, Inc., and attached Technical Appendix, are true and correct to the best of my knowledge.

Dated: December 6, 2010

/s/ Paul A. Monte
Paul A. Monte
Vice President, Engineering and Product Development
Globalstar, Inc.,