

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of )  
 )  
Request by Globalstar, Inc. To Expand ) RM-11339  
Its Ancillary Terrestrial Component ("ATC") )  
Authority to Encompass Its Full Assigned )  
Spectrum )  
 )

To: The Commission

**Comments of the Society of Broadcast Engineers, Inc.**

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members world wide, hereby respectfully submits its comments in the above-captioned Request relating to Globalstar's deployment of Mobile Satellite Service (MSS) Ancillary Terrestrial Component (ATC) base stations.

**I. RM-11339**

1. On June 20, 2006, Globalstar, Inc. filed a request that it be allowed to operate MSS ATC base stations over the entire 2,483.5–2,500 MHz MSS ATC band, and not limited to the 2,487.5–2,493 MHz portion of that band that is presently available for MSS ATC. That request was placed on public notice on July 27, 2006, as RM-11339.
2. First, SBE has to repeat that it opposes any deployment of MSS ATC base stations by Globalstar, or any other MSS entity, regardless of whether such deployment is limited to just 2,487.5–2,493 MHz, or over the entire 2,483.5–2,500 MHz MSS ATC band, as premature due to the presence of grandfathered TV Broadcast Auxiliary Service (BAS) operations on TV BAS Channel A10 (2,483.5–2,500 MHz). Such operations are co-primary to MSS ATC operation pursuant to Non-government footnote NG147 in Section 2.106 of the FCC Rules<sup>1</sup>, and also

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<sup>1</sup> NG147 reads as follows:

In the band 2483.5–2,500 MHz stations in the fixed and mobile services that are licensed under Part 74 (Television Broadcast Auxiliary Stations), part 90 (Private Land Mobile Radio Services), or Part 101 (Fixed Microwave Services) of the Commission's Rules, which were licensed as of July 25, 1985, and those whose initial applications were filed on or before July 25, 1985, may continue to operate on a primary basis with the mobile-satellite and radiodetermination-satellite services, and in the segment 2495–2500 MHz, these grandfathered stations may also continue to operate on a primary basis with stations in the fixed and mobile except aeronautical

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pursuant to Section 74.602(a)(2) of the Part 74, Subpart F, TV BAS rules.<sup>2</sup> As earlier-in-time, co-primary stations, no MSS ATC deployment is possible without protecting these stations. Because about 80 of the approximately 100 grandfathered TV BAS Channel A10 licenses are mobile TV Pickup stations, this means, as a practical matter,<sup>3</sup> that no MSS ATC deployment can occur until TV BAS operations have first been re-farmed so that they would no longer be co-channel with MSS ATC.

3. In its IB Docket 02-364 comments, SBE proposed a solution that would solve both the MSS ATC problem, and the Broadband Radio Service (BRS) Channel 1 (BRS1) conflict with grandfathered, co-primary TV BAS Channel A10 operations: Refarm the three 2.5 GHz TV BAS Channels (A8, 2,450–2,467 MHz; A9, 2,467–2,483.5 MHz, and A10) from 17-MHz and 16.5-MHz wide analog channels to 12-MHz wide digital channels, and re-pack those narrowed channels starting at 2,450 MHz. As shown by the attached Figure 1, this would then make the top of TV BAS Channel A10d<sup>24</sup> 2,486 MHz, thus providing a 1.5-MHz guard band to the 2,487.5 MHz lower edge of the present MSS ATC band.

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mobile services that are licensed under part 27 (Miscellaneous Wireless Communication Services) of the Commission's Rules.

<sup>2</sup> Section 74.602(a)(2) reads as follows:

In the band 2483.5–2,500 MHz, no applications for new stations or modifications to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, and licensees whose initial applications were filed on or before July 25, 1985, are grandfathered and their operations are on a co-primary basis with the mobile-satellite and radiodetermination-satellite services, and in the segment 2495–2500 MHz, their operations are also on a co-primary basis with part 27 fixed and mobile except aeronautical mobile service operations.

The restriction on not submitting an application to increase the number of TV BAS Channel A10 transmitters has no meaning, because for grandfathered fixed, point-to-point BAS stations, Section 74.602(c) stipulates that fixed link stations will be authorized to operate on one channel only; that is, the licensing framework for fixed, point-to-point TV BAS links is already limited to one transmitter per station license, and no new licenses for fixed link Channel A10 stations are permitted. However, for TV Pickup station licenses, the number of authorized transmitters is unlimited (see *Wireless Telecommunications Bureau (WTB) and Media Bureau Announce Licensing Procedures To Facilitate the Transition of BAS, CARS, and LTTS Licenses to the 2025–2110 MHz Band and WTB Addresses SBE Petition for Declaratory Ruling*, DA 05-2223, dated July 29, 2005). Further FCC Form 601 does not allow specifying the number of transmitters for a TV Pickup station, nor does the Universal Licensing System (ULS) track this information. Thus, no application to increase the number of Channel A10 transmitters authorized by a grandfathered TV BAS Channel A10 TV Pickup license would ever be necessary, or possible.

<sup>3</sup> The Commission long ago determined, in ET Docket 95-18, that TV BAS and MSS cannot share the same spectrum in the same area at the same time. Indeed, this reality is the whole basis for the refarming of the 2 GHz TV BAS band from 1,990–2,110 MHz to 2,025–2,110 MHz. When portions of the 1,990–2,025 MHz MSS band were further re-allocated to other Commercial Mobile Radio Services (CMRS) that could actually make use of 1,990–2,025 MHz spectrum in a timely manner, the Commission included CMRS operations as another use that is mutually exclusive with BAS use of the same spectrum. Thus, there can be no doubt that MSS use of 2,483.5–2,500 MHz for ATC is mutually exclusive with TV BAS mobile operations using that same band.

<sup>4</sup> To accommodate concerns by Sprint Nextel that refarming of the 2.5 GHz TV BAS band not delay the ongoing refarming of the 2 GHz TV BAS band, SBE amended its proposal for TV BAS Channel A10 to be refarmed in two steps. In Step 1, TV BAS Channel A10 would be converted to Channel A10d1, where it would be a 12-MHz wide digital channel, but with its center frequency shifted downward by 2.25 MHz,

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4. If the entire 2,483.5–2,500 MHz MSS ATC band were to be opened up to Globalstar operations, or the operations of other MSS entities, this would perpetuate the overlap with TV BAS Channel A10, even once refarmed to Channel A10d2. Thus, SBE opposes that aspect of RM-11339. However, SBE would have no objection to Globalstar being allowed to utilize MSS ATC down to 2,486 MHz, the top of the final stage refarmed TV BAS Channel A10d2, once that refarming has occurred. Since such a re-allocation would eliminate the 1.5-MHz guard band that would otherwise exist, SBE would condition this loss of a guard band on the out-of-band emission (OOBE) limit for MSS ATC base stations being increased from the present -44.1 dBW/30 kHz dB suppression requirement specified in Section 25.254(a)(2) of the MSS ATC rules, to a  $67 + 10\log(\text{TPO}_{\text{watts}})$  dB suppression requirement; that is, the same OOBE suppression requirement proposed by SBE in its WT Docket 04-356 comments (Service Rules for 2 GHz AWS Stations), if a 2 GHz AWS base station would be located within 0.5 km of an existing 2 GHz ENG receive only (ENG-RO) site. SBE notes that this is the OOBE suppression required for BRS base stations, which is still not as strict as the -110 dBc requirement that full-service DTV stations must meet.

5. Similarly, if the entire 2,483.5–2,500 MHz MSS ATC band were to be opened up to Globalstar operations, or the operations of any other MSS entity, this would perpetuate the overlap with BRS1, at 2,496–2,502 MHz. It should be obvious that, just as a cellular-like MSS ATC base station architecture cannot operate on the same frequencies in the same area and at the same time as TV BAS mobile operations, a cellular-like MSS ATC base station architecture cannot share spectrum in the same area with an also cellular-like BRS system. Thus, SBE proposes that Globalstar's MSS ATC spectrum be extended to no higher than 2,496 MHz; that is, from 2,487.5–2,493 MHz to 2,486–2,496 MHz. This would give Globalstar 10.0 MHz of MSS ATC spectrum, or almost double its present 5.5 MHz of 2.5 GHz MSS ATC spectrum.

## II. Frequency Coordination Issues

6. SBE also wishes to address frequency coordination issues. As a newcomer user, Globalstar is obligated to protect incumbent, co-primary licensees; that is, grandfathered TV BAS Channel A10 licensees. Unfortunately, Globalstar's record in this regard is not good.

7. In its March 1, 2005, application for MSS ATC authority, E970381, Globalstar acknowledged its obligation to protect the Radio Astronomy Service (Exhibits B and B-5); the

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from 2,491.75 MHz to 2,489.5 MHz. This would keep Channel A10d1 entirely within Channel A10, while solving the BRS1 conflict. TV BAS Channels A8 and A9 would therefore not need to be refarmed at this point. Then, in Step 2, all three of the 2.5 GHz TV BAS channels would be narrowed and repacked.

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Radio-Navigation-Satellite/Aeronautical Radio-Navigation Services (Exhibits B and B-6); the Table Mountain Radio Receiving Zone at Boulder County, Colorado (Exhibit B); the National Radio Astronomy Observatories at Green Bank, WV and Sugar Grove, WV (Exhibit B); and all FCC Monitoring Stations (Exhibit B). But nowhere in its application did Globalstar even mention the existence of co-channel TV BAS Channel A10 operations, with their co-equal priority, and earlier-in-time status. For that reason, on May 16, 2005, SBE was compelled to file an Informal Objection to the Globalstar MSS ATC application.

8. SBE is heartened to read, at pages 21/22 of Globalstar's June 20 filing, that

For example, Globalstar has made clear that its ATC system is being designed to protect (1) the Radionavigation Satellite Service (RNSS), (2) the Television Broadcast Auxiliary Service (BAS), (3) Radio Astronomy operations, and (4) grandfathered licenses operating fixed and mobile facilities in the upper portions of the 2.4 GHz band services to the extent required under the Commission's rules.

This is a big step forward: Globalstar now acknowledges the existence of co-primary TV BAS Channel A10 operations. Unfortunately, SBE suspects that it and Globalstar are still far apart on the extent of the protection required by the Commission's rules. In that regard, SBE notes that on May 22, 2006, it filed a Petition for Reconsideration of the Commission's April 27, 2006, IB Docket 02-364 *Order on Reconsideration and Fifth Memorandum Opinion and Order; and Third Memorandum Opinion and Order; and Second Report and Order*, on the grounds that decision was based on the flawed conclusion that the number of TV BAS Channel A10 TV Pickup station transmitters could not increase. Thus, Globalstar's reliance on the April 27, 2006, IB Docket 02-364 decision is premature.<sup>5</sup>

9. For example, at page 7 of its June 20 filing, Globalstar notes that in the Summer of 2002, it conducted MSS ATC test transmissions pursuant to an experimental license it had obtained, WC2XXD. SBE's research reveals that this experimental license was first issued on July 9,

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<sup>5</sup> Since that filing SBE has learned that in preparation for WRC2007, the U.S. Government has submitted a June 7, 2006, *Draft Proposal for the Work of the Conference Agenda Item 1.9*. This proposal states, at Page 2, that:

In general, co-frequency sharing between MSS and terrestrial services has been found to be difficult by the ITU-R studies. The SG-8, for example, studied the feasibility of sharing between MSS and MS for IMT-2000 and concluded that co-frequency/co-coverage sharing is not feasible.

The Draft Proposal document is reproduced as Figure 2 to these SBE comments. Thus, SBE concludes that this U.S. Government document refutes the decision reached in the April 27, 2006, IB Docket 02-364 Order, and supports the May 22, 2006, SBE Petition for Reconsideration of that Order. SBE notes that in its July 19, 2006, *Petition for Partial Reconsideration of the WT Docket 03-66 Second Report & Order*, Bellsouth Corporation reached an identical conclusion regarding MSS ATC sharing spectrum with BRS Channel 1 stations.

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2002, and that the most recent version was issued on July 25, 2006 (to change the licensee from Globalstar, Inc. to Globalstar Licensee LLC). The WC2XXD experimental license authorizes up to two 2.5 GHz MSS ATC base stations within 40 km of reference coordinates located in New York City; Arlington, VA (essentially the Washington, DC, area); San Diego, CA; and San Jose, CA. An ERP of 100 watts (164 watts EIRP) is authorized for the 2.5 GHz base stations, with no limitation on the height of the transmitting antennas of those base stations.

10. The possible existence of up to two 164-watt EIRP 2.5 GHz MSS ATC base stations in NYC, Washington DC, San Diego and San Jose raised SBE's concern, because it was not aware of interference reports to TV BAS Channel A10 operations in those locations. SBE's research into the WC2XXD situation has revealed that the experimental operation occurred only in NYC and Washington DC, and then only for one day at each location, and then only for a few hours during the day. Also, only a single base station was involved. The single-day Washington DC experimental operation occurred on July 18, 2002, and the single-day NYC experimental operation occurred on July 23, 2002. No experimental operations ever occurred in San Diego or San Jose. Thus, no claim can be made by Globalstar that WC2XXD "proved" that 2.5 MHz MSS ATC and TV BAS Channel A10 operations can co-exist. The experimental operation lasted for a few hours, using a low-height transmitting antenna, on dates and times when there was no indication that electronic news gathering (ENG) or sports operations on TV BAS Channel A10 in NYC or Washington DC were simultaneously taking place. Even if simultaneous TV BAS Channel A10 operations had occurred in NYC or Washington, DC, the interference potential of a single MSS ATC base station radiating from a low height would not be comparable to the interference potential of all the MSS ATC base stations necessary to cover an entire metropolitan area using typical CMRS base station antenna heights of 12 to 20 meters AGL.

11. SBE further notes that Globalstar was obligated by Section 5.111(a)(2) of the rules governing Experimental Radio Service (Other Than Broadcast) stations to "ensure that the radio frequency energy emitted will not cause harmful interference to the services carried on by stations operating in accordance with the Table of Frequency Allocations..." The most direct and obvious way for Globalstar to have done so would have been to contact the above-1 GHz BAS frequency coordinators for NYC and Washington DC. Yet SBE checks with the NYC and Washington DC BAS frequency coordinators reveal that neither were ever contacted by a Globalstar representative. SBE can only hope that Globalstar's compliance with its obligations under the FCC rules will improve in the future.

**III. A Newcomer Co-Primary Station Must Protect an Earlier-in-Time Co-Primary Station**

12. Because of the policy established in ET Docket 98-142 (7 GHz MSS downlinks, sharing the 7 GHz TV BAS band), and re-affirmed in ET Docket 03-254 (Frequency Coordination Rules for 7 GHz MSS uplinks and downlinks, and 13 GHz MSS Gateway Uplinks, and Terrestrial 7 & 13 GHz TV BAS, CARS and POFS stations), namely that between co-equal users the newcomer user must protect the first-in-time user, it is clear that MSS ATC is required to protect Channel A10 TV BAS operations. But, the primary TV BAS Channel A10 use in the major metropolitan areas is by mobile/itinerant TV Pickup (TVPU) stations, whose location continuously varies. Although some of this grandfathered Channel A10 use is for known-in-advance, scheduled events, such as car races, golf tournaments, marathons, and large sporting events, Channel A10 also includes the coverage of un-scheduled news events. Because it would be impractical for Globalstar to simply shut down its later-in-time ATC operation when an earlier-in-time grandfathered TVPU station needed to operate in the same area, it is clear that for at least seven of the ten largest U.S. cities where the Globalstar MSS ATC application indicates it will first deploy MSS ATC, but where there are grandfathered Channel A10 TV Pickup stations, any such deployment would be secondary to the rights of those earlier-in-time, co-primary TV Pickup stations.

13. If Globalstar can accept such already encumbered spectrum, and if practical, realistic means are established for any system of MSS ATC base stations to promptly shut down when notified that TV BAS Channel A10 operations require the use of 2,483.5–2,500 MHz, then SBE would withdraw its Informal Objection to the Globalstar MSS ATC application. Lacking that, however, SBE believes that it would be in Globalstar's own interest to back the latest SBE Petition for Reconsideration, and encourage the Commission to adopt forthwith SBE's proposed solution to the conflict between TV BAS Channel A10, MSS ATC, and BRS1, by refarming the three 2.5 GHz TV BAS channels as suggested by SBE.

14. Finally, SBE would like to point out an inconsistency in Globalstar's June 20 filing: Although on the one hand Globalstar assures the Commission that it will meet all of its obligations regarding the protection of grandfathered TV BAS Channel A10 stations, at page 8 of its filing Globalstar describes Globalstar Emergency Management Communications Systems, or GEMCOMS, that would fit in the back of a pickup truck or SUV or in a small boat. These GEMCOMS are further described as having "all the functionality of a cellular base station." Yet nowhere does Globalstar address its frequency coordination obligations to TV BAS Channel

## **RM-11339: Expanded MSS ATC Spectrum**

A10 ENG operations that might well be going on in the very same area, covering the very same emergency event that triggered the need for GEMCOMS. Fortunately, this fundamentally incompatible sharing of spectrum between TV BAS and MSS ATC can be solved by refarming the 2.5 GHz TV BAS channels as suggested by SBE. Then, at last, Globalstar would not be stuck with spectrum encumbered by co-primary and earlier-in-time, and therefore higher priority, stations.

### **IV. ATC Would Create the Same Terrestrial Vulnerability That Applies to Conventional SMR, Cellular, PCS and 3G Base Stations**

15. The June 20 Globalstar filing states that a constellation of MSS satellites "are largely unaffected by ground-based disasters that can disrupt terrestrial services." SBE agrees with this claim. But then Globalstar proposes to add a system of ground-based terrestrial base stations, which would be subject to the very same disruptions that 800 MHz Specialized Mobile Radio (SMR), 900 MHz cellular, 1.9 GHz PCS, and 2 GHz Third Generation (3G) base stations are subject to. Thus, to add a system of ATC base stations to MSS, especially if it results in a smaller constellation of MSS satellites over time, would seem to be counterproductive if the goal is to ensure a completely separate, and backup, communications system.

### **V. Summary**

16. SBE disagrees with Globalstar's claim that "There is no practical or technical reason for preventing Globalstar from using all of its assigned spectrum for ATC services." To the contrary, there is a plethora of practical reasons why even the current 2,487.5–2,493 MHz MSS ATC spectrum cannot yet be deployed, and why future deployment beyond 2,486–2,496 MHz should never be allowed.

## RM-11339: Expanded MSS ATC Spectrum

### List of Figures

17. The following figures or exhibits have been prepared as a part of these RM-11339 comments:

1. Existing vs SBE proposed 2.5 GHz TV BAS band plan
2. Copy of June 7, 2006, U.S. WARC 2007 Draft Proposal Regarding 2.5 GHz MSS.

Respectfully submitted,

Society of Broadcast Engineers, Inc.

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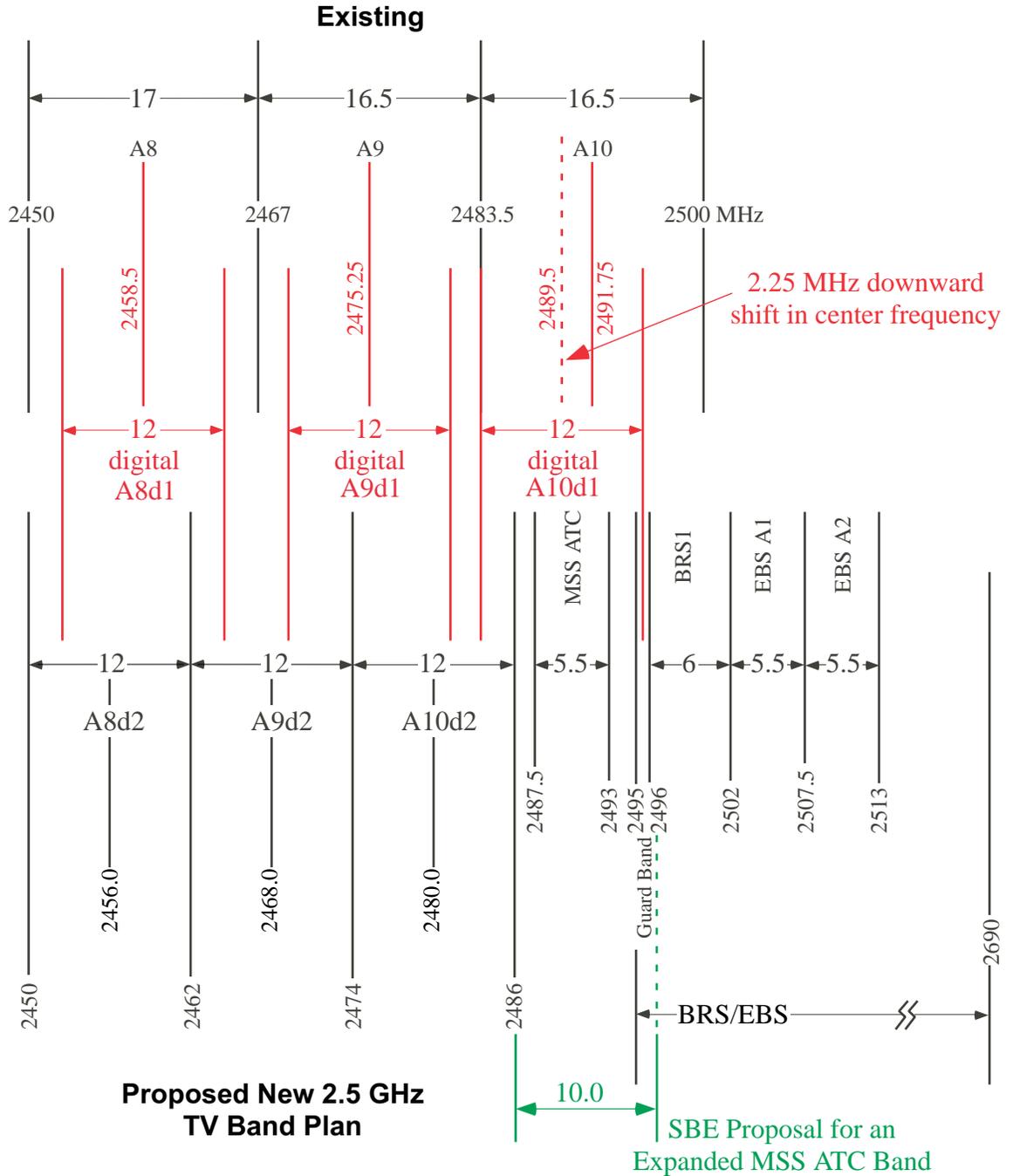
/s/ Christopher D. Imlay, Esq.  
General Counsel

August 28, 2006

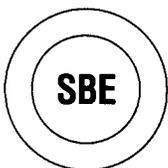
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# RM-11339 Expanded MSS ATC Spectrum

## Existing vs SBE Proposed New 2.5 GHz TV BAS Band Plan (IB Docket 02-364)



All frequencies and bandwidths are in MHz.



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**SOCIETY OF BROADCAST ENGINEERS, INC.**  
Indianapolis, Indiana



VII MEETING OF PERMANENT  
CONSULTATIVE COMMITTEE II:  
RADIOCOMMUNICATIONS  
INCLUDING BROADCASTING  
June 20 to 23, 2006  
Lima, Peru

OEA/Ser.L/XVII.4.2  
CCP.II-RADIO/doc. 1009/06  
7 June 2006  
Original: English

**DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE**  
**AGENDA ITEM 1.9**  
**(WSG-2)**  
**(Item on the Agenda: 4.1)**

**(Document submitted by the delegation of United States of America)**

**Agenda Item 1.9:** *to review the technical, operational and regulatory provisions applicable to the use of the band 2 500-2 690 MHz by space services in order to facilitate sharing with current and future terrestrial services without placing undue constraint on the services to which the band is allocated;*

**Background:**

**Issue A: Necessary Power Flux Density Limits**

There are three space services allocated in portions of the 2 500-2 690 MHz band. In addition to MSS there are allocations to BSS and FSS. At WRC-03 the issue of sharing between terrestrial services and BSS (Sound) was resolved as reflected in RR Nos. **5.417A** and/or **5.418**. The sharing between BSS and terrestrial services not included in these two provisions was not addressed at WRC-03 and need to be considered. WRC-03 recognized the need review the technical, operational and regulatory provisions applicable to the use of the band 2 500-2 690 MHz by space services in order to facilitate sharing with current and future terrestrial services (see Res. **802 (WRC-03)**, Agenda Item 1.9). To that end, CPM06-1 established the Joint Task Group 6-8-9 (JTG 6-8-9) with the purpose to conduct studies on this issue.

The JTG 6-8-9 has developed a methodology for estimating the satellite pfd values required to protect terrestrial services. Based on this methodology, the USA has determined that pfd values at the surface of the Earth produced by the emissions of MSS, BSS and FSS satellites of -136 dBW/m<sup>2</sup>/MHz for angles of arrival below 5° and -122 dBW/m<sup>2</sup>/MHz for angles of arrival greater than 25° would yield tolerable levels of interference to the Fixed and non IMT-2000 mobile services.

There are definite advantages to having a uniform regulatory regime for all space services in the 2 500-2 690 MHz band, based on the specification of a power flux density limits in RR **Article 21**. First it would ensure long term safeguard of terrestrial systems in the band 2 500-2 690 MHz from satellite interference and could also be beneficial to the long-term development of space services as a defined set of pfd limits would be established and finalized. Additionally, a hard limit regulatory regime would alleviate coordination burden and provide regulatory certainty to all services in the band.

In short, the proposed regulatory approach would ensure that existing and planned satellite networks are not overly constrained while existing and future terrestrial services are adequately protected.

**Issue B: Mobile Satellite Service (MSS)**

MSS and terrestrial sharing is "not feasible."

The band 2 500-2 520 MHz is allocated to MSS (space-to-Earth) paired with MSS (Earth-to-space) allocation in the band 2 670-2 690 MHz.<sup>1</sup> The terrestrial services in these bands include the Mobile and the Fixed Services (including IMT-2000). Both the terrestrial Mobile and Fixed Services have been rapidly evolving to encompass high-speed mobile Internet services requiring sensitive receiving equipment, which may be highly susceptible to interference.

In general, co-frequency sharing between MSS and terrestrial services has been found to be difficult by the ITU-R studies. The SG-8, for example, studied the feasibility of sharing between MSS and MS for IMT-2000 and concluded that co-frequency/co-coverage sharing is not feasible. A new regulatory provision is proposed that would limit MSS downlinks in the 2 500-2 520 MHz band to national and regional systems only. Under the proposed regulatory provision, administrations seeking to implement

<sup>1</sup> In accordance with RR **5.403**, the band 2 520-2 535 MHz may also be used for MSS (space-to-Earth) for operation limited to within national boundaries.

MSS will be allowed to do so while other administrations will be able to implement terrestrial services, all without the undue regulatory constraints. In case of a national system, the service area of the MSS system would be limited to the territory under the jurisdiction of the notifying administration. In case of a regional system, the following Radio Regulations Board's decisions would apply<sup>2</sup>:

- (1) No. 5.2.1 applies to the interpretation of the word "regional" without a capital "R".
- (2) When an administration submits a coordination request for a service area that covers its national territory and extends beyond it, the responsible administration, before it notifies the relevant assignments under Article 11, will have to obtain agreements from those administrations whose territories are included in the service area. When the responsible administration notifies these assignments under Article 11, it shall submit the list of administrations that agreed to form the regional system and shall adjust the service area accordingly. If no agreement is obtained, the service area shall be limited to its national territory.

It is also important to note that this rule of procedure clearly stipulates that the service area of a national or regional satellite system does not extend beyond the territory of administration(s) that agreed to be included in that service area.

**Proposals associated with Issue A:**

USA/ /1 MOD

ARTICLE 21

TABLE 21-4 (WRC-03)

Frequency band	Service*	Limit in dB(W/m <sup>2</sup> ) for angles of arrival (δ) above the horizontal plane			Reference bandwidth
		0°-5°	5°-25°	25°-90°	
2 500-2 690 MHz	Fixed-satellite	-152	<del>-152 + 0.75(δ - 5)</del>	-137	4 kHz
2 520-2 670 MHz	Broadcasting-satellite	<u>-136</u>	<u>-136 + 0.7(δ - 5)</u>	<u>-122</u>	<u>1 MHz</u>
2 500-2 516.5 MHz (No. 5.404)	Radiodetermination-satellite				
<u>2500-2535</u>	<u>Mobile Satellite (Space to Earth)</u>				
3 400-4 200 MHz	Fixed-satellite (space-to-Earth) (geostationary-satellite orbit)	-152	-152 + 0.5(δ - 5)	-142	4 kHz

**Reasons:** Studies have shown that a satellite pfd value of -136 dBW/m<sup>2</sup>/MHz at angles below 5°, and -122 dBW/m<sup>2</sup>/MHz at angles greater than 25° yielded acceptable levels of interference to terrestrial services in the 2500-2690 MHz band. The proposed power flux density limits would facilitate FSS, BSS

<sup>2</sup> See comments under the Rules of Procedure concerning No. 5.415 and 5.416

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and MSS sharing with current and future terrestrial services in the band 2500-2690 MHz and provide necessary safeguard for the terrestrial (FS and MS) systems in the band. The proposed modification would also provide regulatory certainty to satellite services as a defined set of pfd limits would be known and extensive coordination with uncertain outcome would not be required.

USA/ /2 MOD

APPENDIX 5 (Rev. WRC-03)  
ANNEX 1

TABLE 5-2 (WRC-03)

Frequency band (MHz)	Terrestrial service to be protected	Coordination threshold values				
		GSO space stations		Non-GSO space stations		
		pfd (per space station) calculation factors (NOTE 2)		pfd (per space station) calculation factors (NOTE 2)		% FDP (in 1 MHz) (NOTE 1)
		<i>P</i>	<i>r</i> dB/degrees	<i>P</i>	<i>r</i> dB/degrees	
2 500-2 520	Analogue FS telephony (NOTE 5)	-146 dB(W/m <sup>2</sup> ) in 4 kHz and -128 dB(W/m <sup>2</sup> ) in 1 MHz	0.5	-146 dB(W/m <sup>2</sup> ) in 4 kHz and -128 dB(W/m <sup>2</sup> ) in 1 MHz	0.5	
	All other cases	-128 dB(W/m <sup>2</sup> ) in 1 MHz	0.5	-128 dB (W/m <sup>2</sup> ) in 1 MHz	0.5	25
2 520-2 535	Analogue FS telephony (NOTE 5)	-154 dB(W/m <sup>2</sup> ) in 4 kHz and -136 dB(W/m <sup>2</sup> ) in 1 MHz	75	-146 dB(W/m <sup>2</sup> ) in 4 kHz and -128 dB(W/m <sup>2</sup> ) in 1 MHz	0.5	
	All other cases	-136 dB(W/m <sup>2</sup> ) in 1 MHz	0.75	-128 dB(W/m <sup>2</sup> ) in 1 MHz	0.5	25

**Reasons:** Consequential to adding pfd limit for MSS to Article 21, Table 21-4 per USA/ /1. Limits in Article 21 eliminate the requirement for coordination with terrestrial systems in the band 2 500-2 535 MHz.

**Proposals associated with Issue B:**

**USA/ 13 MOD**

ARTICLE 5

**Frequency allocations**

Section IV – Table of Frequency Allocations

**2 500-2 520 MHz**

Allocation to services		
<b>2 500-2 520</b> FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-Earth) 5.351A 5.403  5.405 5.407 5.412 5.414	<b>2 500-2 520</b> FIXED 5.409 5.411 FIXED-SATELLITE (space- to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-Earth) 5.351A 5.403 <u>ADD 5.AAA</u> 5.404 5.407 5.414 5.415A	<b>2 500-2 520</b> FIXED 5.409 5.411 FIXED-SATELLITE (space- to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-Earth) 5.351A 5.403 5.404 5.407 5.414 5.415A

**USA/ 14 ADD**

**5.AAA** The use of the band 2 500-2 520 MHz by the mobile-satellite service is limited to national and regional systems, subject to agreement obtained under No. **9.21**.

**Reasons:** Restricting MSS to national and regional systems would further facilitate sharing between MSS and terrestrial services. This restriction would not constrain MSS, as there are no global coverage systems planned for this band, but would ensure that MSS systems service areas are limited to territories of the administrations seeking to implement MSS. This restriction, however, would not fully address the issue of MSS interference to terrestrial systems and must be implemented in conjunction with the appropriate PFD limits for MSS (see proposed modifications to Article **21**).