

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

In the Matter of)	
)	
Terrestrial Use of the 2473–2495 MHz Band for)	IB Docket No. 13-213
Low-Power Mobile Broadband Networks;)	RM-11685
Amendments to Rules for the Ancillary Terrestrial)	
Component of Mobile Satellite Service Systems)	
Amendment of Parts 1, 21, 73, 74 and 101)	
Commission's Rules to Facilitate the Provision of)	WT Docket 03-66
Fixed and Mobile Broadband Access, Educational)	
and Other Advance Services in the 2150–2162)	
and 2500–2690 MHz Bands)	

To: The Commission

EIBASS *Ex Parte* Comments

1. Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby respectfully submits its *ex parte* comments in response to the reply comments of two parties to the IB Docket 13-213 Notice of Proposed Rulemaking (NPRM) regarding the Terrestrial Low-Power Service (TLPS) and Advanced Wireless Service Band 5 (AWS-5) proposed by Globalstar, Inc. (Globalstar).

I. S-G_TLPC Reply Comments

2. The reply comments of Samuelson-Glushko Technology Law & Policy Clinic (S-G_TLPC) correctly state, at page iii, that

Licensed providers, unlike unlicensed providers, have interference protection rights that the Commission must consider before approving Globalstar's TLPS. However, of the licensed users in the S band, only Broadcast Auxiliary Service ("BAS") providers have expressed concern about potential interference from TLPS.

3. No argument there. But S-G_TPLC then demonstrates its ignorance by adding

Moreover, BAS operates primarily below 2483.5 MHz and already successfully coexists with Wi-Fi.

S-G_TLPC is misinformed. As was documented in the January 14, 2013, EIBASS filing to RM-11685 (the predecessor rulemaking to IB Docket 13-213), the existence of Wi-Fi emissions at

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2,450–2,483.5 MHz have so chronically raised the noise floor on TV BAS Channels A8 (2,450–2,467 MHz) and A9 (2,467–2,483.5 MHz) as to make those 2.5 GHz TV BAS channels far less desirable than the 2 GHz TV BAS channels (*i.e.*, A1 through A7, at 2,025–2,110 MHz). Indeed, in some areas, effectively unusable. See Figure 4, which was a spectrum analyzer display showing an 8 dB worse noise floor for A8 and A9 versus grandfathered A10 in the Phoenix area.

4. S-G_TLPC then further demonstrates its ignorance by stating, at page 19, that "BAS and unlicensed users have expressed only speculative claims about the effect of TLPS on their systems" and "no commenter has proven any demonstrable harm."

5. EIBASS can only conclude the S-G_TLPC also missed the EIBASS filings¹ to the ET Docket 10-142 "MSS Flexibility" rulemaking regarding Open Range, a fortunately now defunct scheme to similarly use the 2,483.5–2,495 MHz S-band Mobile Satellite Service (MSS) not for its originally allocated and intended space-to-Earth mode, but rather for terrestrial wireless communications; that is, ancillary terrestrial component (ATC), which Globalstar wants to support its now economically flawed MSS. That is, Globalstar is doing its best to ensure that the MSS "gating criteria" gets so diluted as to be an open gate, making MSS ATC just another terrestrial commercial mobile wireless service, but one with the huge economic advantage of not paying any spectrum auction fees.

6. The EIBASS Docket 10-142 filing documented interference from S-band ATC to grandfathered TV BAS Channel A10 operations at 2,483.5–2,500 MHz in both Chicago and Sacramento. Further, the EIBASS filing documented that the Chicago interference was confirmed by the FCC's Enforcement Bureau. EIBASS obtained a copy of the case report under the Freedom of Information Act (FOIA), and included the pertinent portions as exhibits to its filing. The Open Range operation was probably² a high-power base station at around 60 dBm³ equivalent isotropic radiated power (EIRP), whereas TLPS/AWS-5 would be relatively low-power (up to 36 dBm EIRP) Wi-Fi transmitters, a difference of 24 dB. It would take just 250 TLPS/AWS-5 Wi-Fi units simultaneously transmitting in the same area to cause similar interference. According to S-

¹ See the May 27, 2011, EIBASS ET Docket 10-142 *Petition for Reconsideration*, and the follow-up EIBASS July 8, 2011, comments. The ECFS links are <http://apps.fcc.gov/ecfs/document/view?id=7021673451> and <http://apps.fcc.gov/ecfs/document/view?id=7021691421>.

² EIBASS can only make an informed estimate of the Open Range base station power, because Open Range requested, and unfortunately the International Bureau granted, confidentiality regarding the technical details of the Open Range special temporary authority (STA), IB File Number SAT-STA-20100625-00147. When the interference was finally tracked to Open Range by EIBASS. Open Range declined to reveal its technical parameters.

³ Section 25.254(a)(1) places an upper limit of 62 dBm EIRP in 1.25 MHz for MSS ATC stations.

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G_TLPC, there are already "billions" of Wi-Fi transmitters in use.⁴ Even if it's really only millions of Wi-Fi transmitters, and just thousands in a particular market, that is still a serious interference threat to grandfathered TV BAS Channel A10 operations if in the same market.

7. Thus, S-G_TLPC is simply mistaken in its characterization that S-Band MSS ATC interference to TV BAS is "speculative" and that "no commenter has proven any demonstrable harm." EIBASS is accordingly making this filing to correct the IB 13-213 record.

**II. Indefinitely Grandfathered, Co-Primary TV BAS Channel A10 Operations Should
Be Declared as Precluding AWS-5 Operations Inside the Operational Areas of
Those Stations**

8. In its June 4, 2014, IB Docket 13-213 reply comments, Globalstar made the statement, at page 21, that TLPS/AWS-5 (if authorized, of course) would protect TV BAS Channel A10 operations. EIBASS is gratified to read of Globalstar's adherence to and respect for its spectrum protection obligations; that is, the long-established, and eminently fair Commission policy that, between co-primary users, the newcomer must protect the incumbent(s).

9. Since TLPS/AWS-5 would involve hundreds, and perhaps thousands of low-power emitters in a given area, whose duty cycles would be under the user's control, EIBASS believes that the only "frequency coordination" that will ensure protection of incumbent A10 operations is the same one that the Commission adopted in the WT Docket 10-153 "BAS Flexibility" rulemaking. That rulemaking opened up the 7 and 13 GHz Part 74 TV BAS bands to Part 101 Fixed Service (FS) stations under certain conditions. One of those conditions was that no newcomer FS link would be authorized if any portion of the path intersected the operational area of a TV Pickup station in the same band. This preclusion was broad: The Commission clarified that the revised Section 101.147, Note 34, meant that *one* TV Pickup station on a *single* 7 GHz TV BAS channel, or *one* TV Pickup station on a *single* 13 GHz TV BAS channel, precluded *all* channels in the band to newcomer FS links, not just co-channel or first-adjacent channels.⁵

10. EIBASS notes that in its June 13, 2002, comments to IB Docket 01-185, which granted ATC authority to MSS, Globalstar⁶ stated, at page 2, as follows:

⁴ S-G_TLPC reply comments, at page 3.

⁵ Per paragraph 85 of the August 3, 2012, WT 10-153 Second R&O/Second FNPRM/Second NOI/Order on Reconsideration/MO&O.

⁶ Globalstar's name at that time was ICO Global Communications (Holdings) Ltd. Because of the now flawed economic MSS model for a United States with terrestrial cellular virtually everywhere, Globalstar has had to

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The extreme tardiness of the Cingular/Sprint and AWS filings notwithstanding, these filings are notable because the parties readily concede that **co-frequency sharing between MSS and severed terrestrial systems is infeasible or impractical**. The Telcordia and Comsearch Analyses merely bolster **the undisputed fact that MSS and severed terrestrial systems cannot practically share the same frequencies**. In view of this consensus, the Commission must remove from consideration any proposal to permit co-frequency sharing between MSS and severed terrestrial systems.
[bolding added]

EIBASS submits that there is no difference between the infeasibility of co-channel "severed terrestrial systems" in the same area at the same time and the infeasibility of sharing with co-channel TV BAS Channel A10 TV Pickup stations in the same area at the same time. Given the unscheduled nature of electronic news gathering (ENG) use, frequency sharing is not practical for the same reason you don't park in fire station driveways, or in front of fire hydrants: You don't know when the space (or spectrum) will be needed, so you have to keep it clear. The attached Figure 1 demonstrates the consequence of overlooking this fundamental sharing limitation.

11. As noted in the S-G_TLPC reply comments, at page 12, "cognitive radios used by IEEE 802.11 systems" could be used "to prevent Globalstar's TLPS from transmitting on any frequency in use by an existing licensee." Thus, TLPS/AWS-5, if authorized, should come with the restriction to not operate in any of the grandfathered TV BAS Channel A10 operational areas of record. A map showing the operational areas of those grandfathered stations, originally filed with the January 29, 2013, EIBASS comments to the predecessor RM-11685, is attached to these *ex parte* comments. Just like was the case for only allowing FS stations use of the 7 or 13 GHz TV BAS bands if the FS path would be outside the operational area of all TV Pickup stations, this would still leave substantial portions of the county where no grandfathered A10 operations existed. EIBASS has no objection to AWS-5 use in those areas.

III. Summary

12. EIBASS respectfully disagrees with the statement made at page 10 of the S-G_TLPC reply comments, namely "that the lack of concrete technical analysis to this proceeding should not concern the Commission." The S-G_TLPC reply comments are so misinformed regarding S-band MSS ATC interference to grandfathered TV BAS Channel A10 operations as to require this *ex parte* filing. However, EIBASS agrees with S-G_TPLC that the cognitive features of the IEEE

reorganize under bankruptcy laws, using various permutations of the Globalstar name. According to the FCC web site <http://transition.fcc.gov/transaction/ico-globalstar.html>, the permutations were New Globalstar Corporation; Globalstar, L.P.; Globalstar USA, LLC; and ICO Global Communications (Holdings) Limited.

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802.11 standard could be used to preclude at least the AWS-5 portion of TLPS/AWS-5 from activating inside the operational areas of record of indefinitely grandfathered, co-primary, and earlier-in-time TV BAS Channel A10 TV Pickup stations.

IV. List of Figures

13. The following figures have been prepared as a part of these IB Docket 13-213 *ex parte* comments:

1. Figure demonstrating the concept of incompatible sharing.
2. Map showing operational areas of grandfathered TV BAS Channel A10 TV Pickup stations.

Respectfully submitted,

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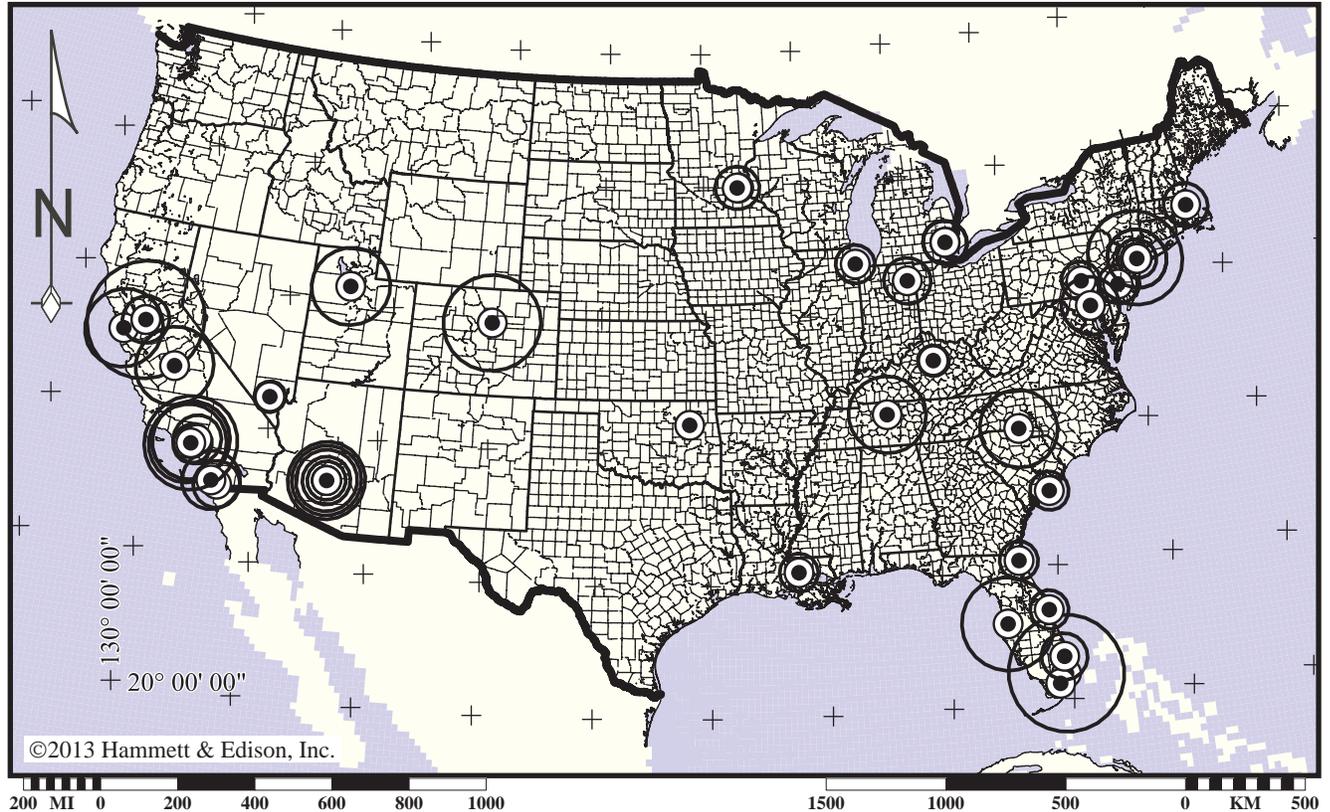
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Terrestrial Low-Power Service/Advanced Wireless Services Band 5 (TLPS/AWS-5)
Fundamentally Incompatible Sharing**



Why there is "no parking" in front of fire hydrants. Like ENG spectrum, you never know in advance when or where it will be needed.

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Operational Areas of Grandfathered TV BAS Channel A10 TV Pickup Stations



Operational areas of grandfathered TV BAS Channel A10 TV Pickup stations. Where the license specifies an ambiguous operational area, the U.S. Atlas reference coordinates for the parent TV station's city of license, and a radius of 90 km, have been used, as the Commission did in the WT Docket 10-153 "TV BAS Flexibility" rulemaking.

Azimuthal equidistant map projection. Map data taken from Sectional Aeronautical Charts, published by the National Ocean Survey. Geographic coordinate marks shown at 5-degree increments. City limits and county lines shown taken from U.S. Census Bureau TIGER/Line 2010 data.