

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

In the Matter of)	
)	
Petition for Rulemaking to Reform the Commission's Regulatory Framework for the Terrestrial Use of the Big LEO MSS Band)	RM-11685
)	
Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525–1559 MHz and 1626.5– 2660.5 MHz, 1610–1626.5 MHz and 2483.5– 2500 MHz, and 2000–2020 and 2180–2200 MHz)	ET Docket No. 10-142
)	
Amendment of Parts 1, 21, 73, 74 and 101 Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advance Services in the 2150–2162 and 2500–2690 MHz Bands)	WT Docket 03-66
)	
Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550–3650 MHz Band)	GN Docket 12-354
)	

To: The Commission

EIBASS Reply Comments To the Globalstar Petition for Rulemaking

1. Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby respectfully submits its comments in response to the November 30, 2012, Public Notice 2971 regarding a November 13, 2012, Petition for Rulemaking submitted by Globalstar, Inc. (Globalstar). That petition asks the Commission to create a new radio service that Globalstar refers to as the Advanced Wireless Services 5/Terrestrial Low-Power Service (AWS-5/TLPS). In effect, another commercial mobile radio service (CMRS) band. The comment deadline was extended to January 14, 2013, giving a January 29 reply comment deadline.¹ Therefore these EIBASS comments are timely filed.

¹ DA 12-2026.

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I. Filings by 2.4 GHz Part 15 Wi-Fi Proponents

2. Three 2.4 GHz Wireless Fidelity (Wi-Fi) proponents, the Bluetooth Special Interest Group (BSIG), the Wi-Fi Alliance (Wi-Fi Alliance), and Wireless Internet Service Providers Association (WISPA), filed comments expressing concern about interference from the proposed AWS-5/TLPS operations to 2,400–2,483.5 MHz Part 15 Wi-Fi operations. Yet none of these groups acknowledged in their comments that their 2,400–2,483.5 MHz Part 15 Wi-Fi use is secondary to 2,450–2,483.5 MHz TV Broadcast Auxiliary Service (BAS) stations, or that a Part 15 device may not cause interference to, and must accept interference from, any licensed station.² EIBASS finds such apparent unfamiliarity with spectrum allocations and the difference between unlicensed, unprotected Part 15 operation vs. licensed, protected Part 74 stations as both surprising and disappointing.

3. Thus, BSIG, Wi-Fi Alliance, and WISPA should be far more concerned about interference from up to 65 dBm EIRP TV Pickup stations than from up to 36 dBm EIRP TLPS stations or from up to possibly 62.1 dBm EIRP AWS-5 base stations. Likewise, BSIG, Wi-Fi Alliance, and WISPA should be concerned that if the Commission starts aggressively enforcing the Section 15.5(b) requirement that a Part 15 device not cause interference to a licensed station, the larger metro areas would become off-limits to Wi-Fi. That is, those areas with co-channel TV BAS A8 and A9 stations, which 2.4 GHz Wi-Fi users are obligated to protect.³

4. In order to make re-farming of the 2.5 GHz TV BAS band attractive to incumbent broadcasters, it would probably be necessary to clear from the 2,450–2,483.5 MHz portion chronically-interfering Wi-Fi operations. Perhaps the recently opened-up 3,550–3,650 MHz band,⁴ or an expanded band for Part 15 devices at 5 GHz, would be good candidates.⁵ In any event, until TV BAS Channels A8 and A9 are restored to the same low noise floor that 2 GHz band TV BAS Channels A1 through A7 enjoy, a re-farming of the 2.5 GHz TV BAS band, to create three 12-MHz wide digital channels and thus allow clearing grandfathered A10 stations

² Section 15.5(b) of the Commission's Part 15 rules states:

Operation of an intentional, unintentional, or incidental radiator is subject to the condition that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific or medical (ISM) equipment, or by any incidental radiator.

³ The Universal Licensing System (ULS) shows 568 TV BAS A8 and A9 stations, of which 491 are TV Pickup licenses.

⁴ General Docket 12-354.

⁵ See the January 9, 2013, FCC news release, *FCC Chairman Julius Genachowski Announces Major Effort to Increase Wi-Fi Speeds and Alleviate Wi-Fi Congestion at Airports, Convention Centers, and in Homes with Multiple Devices and Users*.

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from 2,483.5–2,500 MHz, may prove not attractive to broadcasters. But until grandfathered A10 stations can be relocated, the MSS S-band, and BRS Channel 1 stations as well, will have to live with restrictions on where they can deploy. This is because there are grandfathered A10 licensees in many of the top metropolitan areas, as shown by the attached Figure 1.⁶

5. In the WT Docket 10-153 “BAS Flexibility” rulemaking, the Commission opened up the 7 and 13 GHz TV BAS bands to Part 101 Fixed Service (FS) stations, but only for paths outside the operational areas all TV Pickup stations in the same band. That is, a single TV Pickup station authorized for a single 7 GHz TV BAS channel precludes the entire 7 GHz TV BAS band to newcomer FS stations, and a single TV Pickup station authorized on a single 13 GHz TV BAS channel precludes the entire 13 GHz TV BAS band to newcomer FS stations. The preclusion is that no portion of the new FS path can touch the TV Pickup station’s operational area of record. Thus, many of the larger metropolitan areas are precluded to new FS stations, although this still leaves large portions of the U.S. that are outside the operational areas of all 7 and 13 GHz TV Pickup stations. EIBASS points out this policy to demonstrate how important the Commission has deemed protection of mobile TV Pickup station operations (*i.e.*, electronic news gathering (ENG) operations) to be. Protection of 2.5 GHz TV ENG operations should be no less important.

6. A re-farming of the 2.5 GHz TV BAS band would also be the appropriate time to address coordination with medical telemetry devices using unprotected, secondary, 2.4 GHz Wi-Fi frequencies. As EIBASS commented in the ET Docket 09-36 Rulemaking regarding Medical Micropower Network Service (MMNS) devices proposing to share the 450-451 MHz Part 74 Subpart D Remote Pickup (RPU) band, use of radio frequencies for medical applications should only be on a protected basis, whereas the MMNS use was proposed as a secondary use. The 3.6 GHz band, or an expanded 5 GHz Wi-Fi band, with a portion reserved only for medical use, and not sharing spectrum with high-power ENG operations, are again possible frequencies for should-not-be-at-risk medical applications. That is, if Part 15 medical use is nevertheless to be continued, at least migrate that use to spectrum where the operation will not be at risk of interference from much higher power licensed stations. In the mean time, a re-farming of the 2.5

⁶ The ULS shows that there are also 12 grandfathered TV Intercity Relay (ICR) stations and one TV Translator Relay station licensed operating on former TV BAS Channel A10. While it is conceivable that these fixed, point-to-point links could share spectrum the proper frequency coordination efforts, since a fixed link must use a directional receiving antenna meeting at least FCC Category B criteria, frequency coordination with a co-channel mobile service is generally not feasible. This is particularly the case for ENG operations, with their often unknown-in-advance venues and the use of high-elevation, high-sensitivity receive sites with steerable receiving antennas.

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GHz TV BAS band to three 12-MHz wide digital channels would allow establishing liaison between health care facilities using 2,450–2,483.5 MHz and ENG operations.

II. Association of Home Appliance Manufacturers Comments

7. The Association of Home Appliance Manufacturers (AHAM) filed comments noting that Globalstar would have “no more rights than any other user of the 2,400–2,500 MHz bands, and cannot complain about harmful interference caused by ISM devices, including microwave ovens, to its service.”⁷ EIBASS agrees, and notes that TV BAS stations likewise enjoy no immunity from Part 18 Industrial, Scientific and Medical (ISM) devices. However, even 2.45 GHz ISM devices have limits on their radiation within the ISM band.⁸ And while ISM devices, like Wi-Fi devices, are intentional generators of radio frequency energy, ISM devices are not intentional communicators. That is, an ISM device generates RF to perform a certain task, generally heating. To the extent RF is emitted into the environment, it is RF energy that is wasted for the task at hand. So ISM devices have an incentive to minimize their emissions. Whereas Wi-Fi devices are trying to radiate as far and wide as possible, sometimes using unauthorized, higher-gain transmitting antennas.

III. Clearwire Comments

8. The Clearwire comments address interference issues involving Broadband Radio Service (BRS) Channel 1 at 2,496–2,502 MHz. While EIBASS appreciates that at least Clearwire acknowledged the existence of grandfathered A10 TV BAS stations, and the SBE proposal to solve the A10 vs. BRS1 conflict by re-farming the 2.5 GHz TV BAS band to three 12-MHz wide digital channels,⁹ Clearwire fails to mention that as the newcomer service BRS licensees are obligated to pay all reasonable and prudent relocation costs of clearing broadcasters from the 2,496–2,500 MHz portion of BRS Channel 1. Either that, or, like S-band Mobile Satellite Service (MSS) Ancillary Terrestrial Component (ATC), be precluded from operating in the areas shown in Figure 1.

⁷ AHAM comments, at page 4.

⁸ For example, Section 18.305 of the ISM rules specifies a general limit of 25 uVolts/meter at 300 meters for ISM devices of 500 watts or less power.

⁹ Clearwire comments, at pages 10 and 11.

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IV. GPS Industry Council Comments

9. The GPS Industry Council (GPSIC) comments state that it “sees no significant issues relating to Globalstar’s proposed TLPS service,” and mentions adjacent-band ISM operations as the only possible complication. EIBASS is disappointed that the GPS Industry Council seems as ununiformed about broadcaster’s use of the 2.5 GHz band as are the 2.4 GHz Wi-Fi user groups.

V. Iridium Comments

10. Iridium, LLC (Iridium), opposes the Globalstar proposal because of the proposal to allow Globalstar to avoiding “gating” requirements to actually use satellites for MSS. Iridium argues that it has been providing a viable S-band MSS service for years, and that Globalstar should have the same obligations if it wants to use MSS spectrum. Iridium is guilty of the same oversight as SIG, Wi-Fi Alliance, WISPA and GPSIC in not mentioning licensed TV BAS operations at 2,450–2,500 MHz. Iridium explains that since it operates in the 1.6 GHz Big LEO band and does not operate in the 2.4 GHz Big LEO band, it takes “no position” on the Globalstar TLPS proposal.¹⁰ Iridium states that Globalstar’s AWS-5 proposal for Long-Term Evolution (LTE) use is “so vague as to warrant summary dismissal.”¹¹ EIBASS agrees that the Globalstar petition for rulemaking leaves many questions unanswered, but these unanswered questions could be addressed at the Notice of Proposed Rulemaking (NPRM) stage, should the Commission decide to proceed with either the Globalstar AWS-5 proposal, the Globalstar TLPS proposal, or both. As long as that next stage includes re-farming of the 2.5 GHz TV BAS band, and steps to migrate interfering Wi-Fi operations to 3.6 or 5 GHz, EIBASS supports progressing to the NPRM stage.

VI. Fairness Issue

11. EIBASS notes that Section 1.405(c) of the Commission’s Rules governing Rulemaking Proceedings states

No additional pleadings may be filed unless specifically requested by the Commission or authorized by it.

In fairness to all interested parties, the Commission needs to either not grant permission to any party to submit additional comments to RM-11685, or, if such permission is granted to one party, then allow any interested party to also submit additional comments.

¹⁰ Iridium comments, at page 23.

¹¹ Iridium comments, at page 19.

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VII. Summary

12. Grandfathered TV BAS Channel A10 stations are co-primary with MSS, and there is no sunset to their grandfather rights. As the earlier-in-time service, newcomer users of 2,483.5–2,500 MHz are obligated to either protect grandfathered A10 stations, or pay all costs to relocate those stations. In order to provide no loss in service and capacity, the only way to do that is to re-farm the 2.5 GHz TV BAS band to three 12-MHz wide digital channels, as proposed by SBE in 2004. The problem of chronic interference from Part 15 Wi-Fi devices needs to be addressed. Finally, medical devices using unprotected Part 15 Wi-Fi frequencies should be migrated to safer bands, where such use will not be at risk of interference from much higher power and co-channel TV Pickup stations.

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VI. List of Figures

13. The following figure has been prepared as a part of these RM-11685 reply comments:
1. Map showing operational areas of grandfathered A10 TV Pickup stations.

Respectfully submitted,

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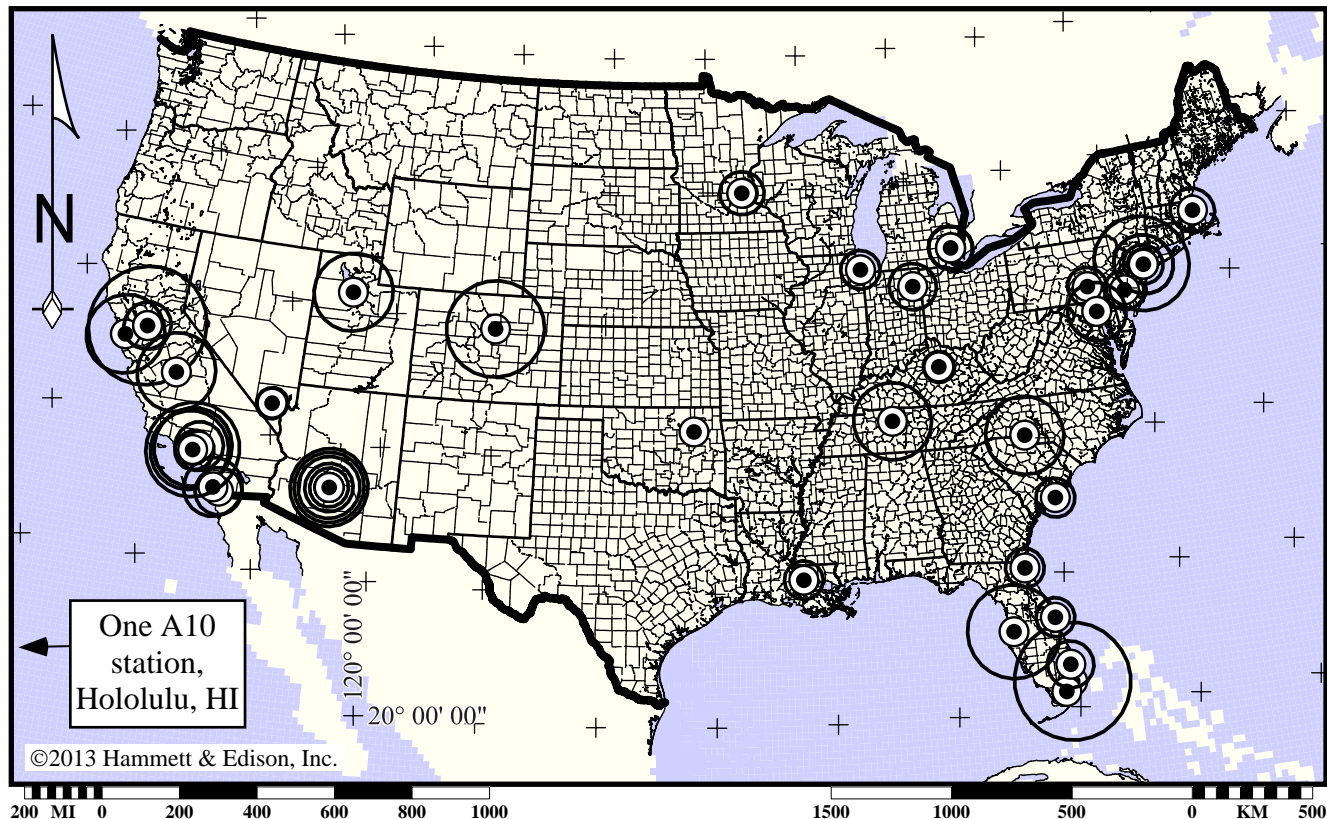
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Operational Areas of Grandfathered TV BAS Channel A10 TV Pickup Stations



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.