

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

In the Matter of	)	
	)	
Allocation of 3G Spectrum below 3 GHz	)	ET Docket No. 00-258
	)	
Mobile Satellite Service	)	ET Docket 95-18
	)	
Policy & Service Rules for 2 GHz MSS	)	IB Docket 99-81
	)	

To: The Commission

**Petition for Reconsideration**

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members worldwide, hereby respectfully submits its Petition for Reconsideration of the April 11, 2006, ET Docket 00-258 Fourth Memorandum Opinion and Order (MO&O) regarding Department of Defense (DoD) uplinks relocated to the 2,025–2,110 MHz TV Broadcast Auxiliary Services (BAS) band.

**I. The Fourth MO&O Appears To Abandon the Noise Floor Protection Criteria  
Adopted in the ET 00-258 Seventh R&O**

1. SBE was shocked to read, at the last sentence of Footnote 43 to Paragraph 17 of the Fourth MO&O, the statement

Finally, the Commission noted that, during on-going coordination, receiver threshold degradation, on which this worst case analysis was based, may be supplanted by less stringent criteria which fully consider actual ENG power, modulation, performance, or other requirements.

SBE can find no language in the October 21, 2004, ET Docket 00-258 Seventh Report & Order (R&O) relieving DoD uplinks of the requirement to demonstrate that their newcomer operations will protect incumbent TV BAS stations. SBE was, and still is, concerned that high-power DoD uplinks, *co-channel* to TV Pickup stations used for electronic news gathering (ENG), will interfere with co-equal and earlier in time TV BAS operations, including ENG-RO sites. It was because of

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the stringent protection criteria<sup>1</sup> described in Footnote 63 in Paragraph 29 of the Seventh R&O that the November 24, 2004, SBE Petition for Reconsideration only raised four issues:

1a. That the SBE comments stating sharing of the 2 GHz TV BAS band could be made to work if *two* conditions existed: First, the conversion of 2 GHz TV BAS operations from analog to digital, where a 30 dB less stringent protection requirement would likely apply between co-channel digital signals, is required. Second, the transmitting antennas used by the eleven DoD tracking, telemetry and commanding (TT&C) uplinks must have their side lobe suppression improved to at least -90 dBc. Doing so would then likely allow frequency re-use, as opposed to frequency sharing.

1b. DoD uplinks must demonstrate the protection of ENG receive-only (ENG-RO) sites, in addition to protecting the receive ends of fixed-link 2 GHz TV BAS stations.

1c. The interference threat would be only one-way; that is, *from* co-channel DoD uplinks *to* ENG-RO sites. Because of the much lower power of TV Pickup stations (on the order of 60 dBm EIRP, versus 115 dBm EIRP for a DoD uplink) and because an ENG truck transmitting antenna is directional, and thus radiates little energy toward the sky, terrestrial 2 GHz band TV BAS transmitters would not, using any interpretation of commonly recognized good engineering practice, be an interference threat to 2 GHz receivers on board military spacecraft.

1d. If DoD is unable to demonstrate the required protection of 2 GHz TV BAS receivers it cannot circumvent the process by simply asking for “arbitration” between the National Telecommunications and Information Administration (NTIA) and the FCC, on the grounds that no “reasonable” frequency coordination had been achieved.

2. The language of Footnote 43 appears to abandon the requirement that a newcomer DoD uplink must be able to demonstrate that it would degrade the noise floor of an ENG receiver by no more than 0.5 dB is alarming. This protection requirement was acceptable from SBE’s perspective and therefore was not challenged in the 2004 SBE Petition for Reconsideration. In effect, a  $\leq 0.5$  dB noise floor degradation permits frequency re-use, which SBE has never opposed. This is in contrast to incompatible frequency sharing, which SBE opposed in its initial comments, in its reply comments, in its original Petition for Reconsideration, and in this instant Petition for Reconsideration. Because the interference would be one-way, from DoD uplinks to BAS receivers,

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<sup>1</sup> SBE notes that the protection criteria adopted by the Seventh R&O of no greater than a 0.5 dB noise floor degradation is more stringent than the no greater than 1 dB noise floor degradation specified in Section 2.5.5 of TIA-EIA Telecommunications System Bulletin TSB-10F (“Interference Criteria for Microwave Systems”). TSB-10F is cited in Section 101.105(c) of the FCC Rules as an acceptable interference methodology; in effect, a “safe harbor” method.

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DoD would have no incentive to conduct advance frequency coordination, to say nothing of ongoing, real-time frequency coordination, which of necessity broadcasters routinely do in the most congested TV markets. Therefore, SBE relied heavily on the strict “no greater than 0.5 dB noise floor” degradation criteria given in the Seventh R&O. To now read that the 0.5 dB noise floor degradation limit can be dispensed with, in favor of “less stringent criteria,” is unacceptable.

3. SBE takes some solace at this point that the language of Footnote 43 perhaps was not meant to disavow the interference criteria established in the Seventh R&O. If the MO&O is intended to state that for allocation conditions that exist at a future date, when a particular DoD uplink moves into the 2 GHz TV BAS band, that the sum total of all mitigation measures by the DoD uplink must end up resulting in a 2 GHz TV BAS receiver noise threshold degradation of no more than 0.5 dB, then this would not be a concern, notwithstanding the apparent provocative language at the end of Footnote 43. But, if Footnote 43 means that DoD can simply dispense with the 0.5 dB noise threshold protection requirement if it proves inconvenient, or even impossible, to meet, and operate in the 2 GHz TV BAS band anyway, then this is an abandonment of a reasonable and necessary interference protection provision and constitutes an impermissible rulemaking “end run.”

## **II. Summary**

4. SBE agreed with the stringent “frequency re-use” interference criteria for coordination between DoD and BAS users adopted by the Seventh R&O, and is concerned with the apparent degradation of that criteria to “frequency sharing.” Frequency sharing can only happen successfully if the sharing entities have an equal stake in the outcome, which is not the case between DoD and BAS. Unfortunately, the Fourth MO&O could be interpreted such that the 0.5 dB receiver noise threshold protection requirement cited in the Seventh R&O could be dispensed with. This dispensation would rest on a single footnote that SBE believes flies in the face of established good engineering practice. So long as DoD uplinks have to demonstrate a receiver noise threshold degradation of no more than 0.5 dB, SBE would agree that there would be no harmful interference to ENG operations. Therefore, SBE respectfully requests that the last sentence of Footnote 43, which is new material found for the first time in the Fourth MO&O, be clarified as SBE suggests, or reconsidered and deleted in a subsequent Order.

Respectfully submitted,  
Society of Broadcast Engineers, Inc.

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