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ELECTRONICALLY FILED

April 4, 2003

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Dear Ms. Dortch:

SBE hereby files a Petition for Partial Reconsideration of the November 13, 2002, Report and Order to ET Docket 01-75 (Updating of the Part 74 BAS Rules).

Sincerely,

/s/ Dane E. Ericksen

Dane E. Ericksen

Enclosure

cc: All SBE FCC Liaison Committee members
All SBE Officers and Directors

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

In the Matter of	)	
	)	
Revision of the Broadcast Auxiliary Service	)	ET Docket No. 01-75
	)	
Digital Modulation for all TV BAS Bands	)	RM-9418
	)	
Low-Power Video Assist Devices	)	RM-9856

To: The Commission

Petition for Partial Reconsideration

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 Petition for Partial Reconsideration of the Report & Order to ET Docket 01-75, concerning updating of the Broadcast Auxiliary Service (BAS) Rules.

I. Filing is Timely

1. The November 13, 2002, ET Docket 01-75 Report & Order (R&O) was not published in the Federal Register until March 17, 2003. Thirty days thereafter is April 16, 2003. Therefore this Petition for Partial Reconsideration ("Petition") is timely filed.

II. Use of Single Emission Designator for Hybrid Analog-Digital Radios Is Technically Flawed and Should Be Changed

2. The R&O decided to use the emission designator 25M0F9W for hybrid analog-digital links such as the Microwave Radio Corporation ("MRC") TwinStream or the Nucomm DualStream radios operating in the 7 and 13 GHz TV BAS bands. SBE believes this to be a technically flawed decision and urges the Commission to reconsider it, in favor of the more accurate dual emission designator proposed by SBE (namely, 15M0F3W/10M0D7W for a hybrid STL with its analog component on the low side of the channel, or 10M0D7W/15M0F3W for a hybrid STL with its analog component on the high side of the channel). SBE further asks the Commission to allow each emission designator to have separate and therefore different equivalent isotropic radiated power ("EIRP") values, for the reasons given in the next paragraph.

3. The R&O stated that the EIRP for hybrid analog-digital radios should be the combined power of both the analog and digital signals. This approach is also technically flawed, and it guarantees inaccurate results for PCN studies. This is because the analog and digital power levels for hybrid radios are different. For example, for the TwinStream radio, the analog power is 33 dBm but the digital power is just 25 dBm. A power addition would give a combined transmitter power output ("TPO") of 33.6 dBm. Therefore, for the analog signal this would give a D/U ratio that would be 0.6 dB too high, and 8.6 dB too high of a D/U ratio for the digital portion of the STL. SBE asks that the Commission reconsider its decision and not to adopt a system with such built in errors.

4. Under the protocol adopted by the R&O for hybrid analog-digital radios such as the TwinStream, parties would have no way of knowing if a low-side or high-side analog configuration had been adopted. This is because Item 12 ("Transmitter Model") of the FCC Form 601 *Frequency Data* page would only reveal that a dual-modulation radio was being used, but not whether the radio had been configured with its analog signal on the low side or on the high side of the channel. Nor could this critical information be devined from the inappropriate 25M0F9W emission designator. Accordingly, SBE asks that the Commission re-consider its decision regarding dual-modulation radios, and separately show the analog and digital emissions and EIRPs.

5. Finally, after reading the R&O, SBE is concerned that the Commission seems to be substituting the ULS for the FCC Rules and Regulations. That is, taking the position that licenses or operations permitted by the Part 74 BAS rules cannot be granted because of the limitations of the ULS. SBE believes that the FCC should never say "no" because its computer software is unable to accommodate how broadcasters actually use their BAS frequencies. SBE is seeing such "no, because the ULS can't handle it" excuses in many of the rulemakings involving BAS frequencies, especially at 2 and 2.5 GHz, and is therefore saying that if broadcasters must use Form 601 for BAS applications, then that form really needs to be made "universal;" that is, broadcasters are entitled to have a version of Form 601 that accommodates actual BAS uses and operations at least as well as the September 1996 version of the now discontinued FCC Form 313 did (a form designed specifically for BAS applications).

6. For example, the Commission, and MSS and 3G/PCS entities, are having difficulty estimating the cost of moving 2 GHz TV BAS operations out of 1,990–2,025 MHz (presently TV BAS Channels A1 and A2) partly because FCC Form 601 does not allow broadcasters to indicate the number of TV Pickup transmitters they employ, or the number of fixed ENG RO

sites that are used. Another example is the use of a single analog emission designator (25M0F9W) for hybrid analog/digital STLs that are so clearly two separate microwave transmitters, one analog and one digital, that just happen to share a common chassis. Such radios should have separate emission designators and EIRPs, and the apparent fact that the ULS software has difficulty with separate emission disignators and EIRPs for a single TV BAS link is not, in SBE's opinion, sufficient justification for adopting a compromise emission designator and aggregate EIRP that does not accurately characterize either signal.

III. Although a Narrowband Channel Plan For Digital TV BAS Would Be Premature, Digital Links That Can Fit Into Less Channel Bandwidth Should Be Allowed

7. At Paragraph 128 of the R&O, the Commission declined to adopt a narrowband channel plan for digital TV BAS operations. The SBE reply comments had stated that it would be premature to adopt a narrowband plan for TV BAS digital links, which can use less bandwidth than a conventional 25-MHz wide analog FM video link. However, this does not mean that the Commission should not routinely grant TV BAS applications that specify less bandwidth than a conventional TV BAS channel (17 MHz at 2 and 2.5 GHz and 25 MHz at 7 and 13 GHz).

8. Nucomm makes a digitally modulated radio called the V-Stream that uses direct 8-VSB modulation. Accordingly, it has an RF bandwidth of just 6.5 MHz. Yet in the past TV stations that have filed applications specifying a V-Stream radio with just a 6.5-MHz bandwidth (*i.e.*, an emission designator of 6M50D7W) have had such applications returned, being informed by WTB staff in Gettysburg that a bandwidth of at least 10 MHz must be proposed for a 25-MHz wide 7 or 13 GHz TV BAS channel, as narrower bandwidths would constitute "underutilization" of the channel and would not be allowed. Indeed, SBE has heard of reports of applicants changing from the 6.5 MHz wide 8-VSB version of the V-Stream digital radio to a quadrature phase shift keying ("QPSK") version of this radio (a more robust, but less spectrally-efficient digital modulation method, of benefit for non-engineered ENG paths but not necessary for an engineered STL or ICR path with adequate Fresnel zone clearances, Category A transmit and receive dishes, and a large fade margin), solely to get the occupied bandwidth above 10 MHz and thus avoid the "less than 10 MHz underutilization" problem (a V-Stream radio using QPSK modulation has a bandwidth of around 15 MHz).

9. Although apparently WTB will now license Nucomm V-Stream radios using 8-VSB modulation and having an occupied bandwidth of less than 10 MHz on a 25-MHz wide 7 or 13 GHz TV BAS channel, SBE would like the Commission to confirm that not only will digital TV

BAS applications specifying bandwidths of less than 25 MHz be routinely granted, but that such applications are encouraged as spectrum efficient. Further, SBE asks the Commission to confirm that more than one narrowband digital TV BAS link can be licensed in a single conventional 25-MHz wide TV BAS channel; that is, that an 8-VSB V-Stream STL with a bandwidth of 6.5 MHz does not have to be in the center of a conventional 25-MHz wide TV BAS channel.

IV. 450/455 MHz RPU Channel Splits

10. Paragraph 114 of the R&O requires Remote Pickup (RPU) stations with bandwidths of 30 kHz or less to comply with the Part 90 technical standards. However, Part 90 Land Mobile technical standards allow maximum channel widths of just 12.5 kHz, with seems inconsistent with the language at the start of Paragraph 114 that the Commission would allow 450 MHz Group N1 and N2 RPU stations to aggregate up to eight 6.25 kHz bandwidth segments, to achieve channel bandwidths of up to 50 kHz. Most if not all narrowband radios currently available in this band are intended for Land Mobile uses, where audio quality standards are far different from broadcast quality. Much live radio remote programming comes into the station via 450 MHz radios, and much of that is done using 25-kHz wide channels, where the audio quality of present analog radios is just acceptable. There has already been significant controversy and disruption of some weather warnings due to the perceived unacceptability of the National Weather Services' "Perfect Paul" digitized voice for broadcast to the general public. Forcing BAS 25 kHz channels to narrowband (meaning digital) with the present state of the art in available digital voice compression, targeted to Land Mobile intelligibility and so different from what the general public is accustomed to hearing, would most likely disrupt radio remote news and sports operations with the same kind of problems.

11. SBE therefore asks the Commission to clarify whether 450/455 MHz RPU stations now widely used for such purposes as traffic reporting with channel widths of 20 to 25 kHz must reduce their channels to just 12.5 kHz, or whether channels widths of 18.75 kHz (*i.e.*, three 6.25-kHz segments) or 25.0 kHz (*i.e.*, four 6.25-kHz segments) would remain permissible. If not, the SBE asks how the Commission intends to make its decision acceptable to the listening public.

V. TV Pickup Fixed Receive Site Information Is Within the Scope of the Rulemaking

12. SBE comments to this rulemaking pointed out that the ULS currently will not allow specifying a fixed receiving antenna height of more than 6.1 meters (20 feet) AGL for TV Pickup

stations.[1] SBE pointed out that many TV stations use fixed ENG RO sites on tall towers or buildings so as to augment the effective range that an ENG truck can have to relay a usable ENG signal from the rarely known in advance location to an ENG RO site. SBE asked that Form 601 and the ULS be amended to allow entering fixed ENG RO sites (plural: many TV stations use multiple fixed ENG RO sites, all operating pursuant to a single TV Pickup license). The R&O declined to do so, on the grounds that such action would affect multiple services (because Form 601 is intended to be a universal application, applying to multiple radio services), and that such action would be outside the scope of the rulemaking.[2]

13. SBE is surprised by this claim. First, SBE believes that the suggested change was easily within the very broad scope of the rulemaking, which was a general updating, harmonizing and streamlining of the Part 74 BAS Rules. Second, since the proposed change to Form 601 would only impact TV Pickup stations, and would be permissive in that an applicant could always elect not to provide such helpful information (although SBE believes that any TV stations with high-elevation fixed ENG RO sites that didn't avail itself to an opportunity to document the locations and heights of such receiving locations would be shooting itself in the foot), SBE asks the Commission to reconsider its decision not to amend Form 601 and the ULS to allow specifying multiple fixed ENG RO sites and receive antenna heights. The current Form 601 is like going into a store where all clothing is one size on the premise that one size fits all, when in reality the clothing fits no one. By trying to make FCC Form 601 a "universal" form it ends up being a form that is inadequate, at least for Part 74 BAS applications.

14. SBE realizes that rulemakings are not the normal vehicle for developing FCC forms or FCC databases, and therefore is not proposing a further notice of proposed rulemaking ("FNPRM") to accomplish changes it believes are needed to FCC Form 601 or to the ULS database. The FCC Rules, both Parts 17 and 74 as well as FAA Part 77, all currently permit the use of fixed ENG RO antennas mounted on existing structures, so long as the overall structure height is not increased (and even in some specific circumstances when the height is increased). SBE will be pleased to work informally with FCC WTB staff at the Commission's Gettysburg processing center to come up with solutions that can be reasonably implemented.

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[1] This ULS limitation is particularly problematic along international borders, where operations in the other country may be able to protect a fixed receiving antenna height of 20 feet AGL but not a fixed receiving antenna height of 1,500 feet AGL, which would not be unusual for a fixed ENG RO site.

[2] R&O, at Paragraph 128.

VI. Summary

15. Most of the decisions reached in the ET Docket 01-75 R&O SBE either applauds, or at least finds that it can live with. However, there are a few areas where SBE believes that the Commission unfortunately didn't get it quite right, and asks the Commission to reconsider the limited number of items addressed in this Petition for Partial Reconsideration filing.

Respectfully submitted,

Society of Broadcast Engineers, Inc.

/s/ Troy Pennington, CSRE
SBE President

/s/ Dane E. Ericksen, P.E., CSRTE
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General Counsel

April 4, 2003

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