## Engineers for the Integrity of Broadcast Auxiliary Services Spectrum

#### EIBASS Co-Chairs

DANE E. ERICKSEN, P.E., CSRTE, 8-VSB, CBNT Consultant to Hammett & Edison, Inc. San Francisco, CA 707/996-5200 dericksen@h-e.com

RICHARD A. RUDMAN, CPBE Remote Possibilities Santa Paula, CA 805/921-0382 rar01@mac.com

#### **EIBASS Members**

KENNETH J. BROWN Broadcast Technical Consultant Carneys Point, NJ

PAUL B. CHRISTENSEN, Esq., CPBE, CBNT, 8-VSB, AMD Law Office of Paul Christensen Jacksonville, FL

GERRY DALTON, CBRE, CBNT Communications Consultant Dallas, TX

HOWARD FINE SCFCC Database Administrator Los Angeles, CA

MICHAEL G. McCARTHY, CSRE McCarthy Radio Engineering Chicago, IL

MICHAEL S. NEWMAN CSI Telecommunications, Inc. San Francisco, CA

> WILLIAM F. RUCK NCFCC Chairman San Francisco, CA

KARL VOSS Frequency Coordinator Scottsdale, AZ

BURT I. WEINER Broadcast Technical Services Glendale, CA FILED AS AN INFORMAL OBJECTION USING THE ELS

July 29, 2015

Mr. Julius Knapp Chief Engineer Office of Engineering and Technology 445 12th Street SW Washington, DC 20554

Re: Space Exploration Technologies Corporation experimental license application WH2XWB, File Number 0356-EX-PL-2015

Dear Mr. Knapp:

Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) is making this Informal Objection against the above identified pending experimental application because that application proposes using 2,077.5-2,105.5 MHz with 11M6G1D emission at 51 dBm EIRP for an S-band uplink at Redmond, Washington. This operation would be co-channel with all or portions of TV Broadcast Auxiliary Services (BAS) Channels A5 (2,073.5-2,085.5 MHz), A6 (2,085.5-2,097.5 MHz), and A7 (2,097.5-2,109.5 MHz). EIBASS requests that the "SBE Clause"<sup>1</sup> be placed on the experimental authority, if granted.

We note that the Space Exploration Technologies Corporation ("Space X") application does not acknowledge that its requested uplink frequencies would be co-channel with TV BAS electronic news gathering (ENG) operations, or that

<sup>1</sup> The SBE Clause states:

Operation is subject to prior coordination with the Society of Broadcast Engineers, Inc. (SBE); ATTEN: Executive Director, 0;0;2;atNonths Manidianospreer, coSudinat205, withdinapodisty JM 162;adcasteleggioneers;66fr632-4;222; FAXEN:317E;246(12120;Directed; 9102 North Meridian Street, Suite 305, Indianapolis, IN 46260; telephone 866-632-4222; FAX, 317-846-9120; e-mail: executivedir@sbe.org; information: www.sbe.org.

Redmond is in the Seattle TV market, the 14th largest TV market in the United States, and a Category II ENG market.<sup>2</sup> We further note that the application indicates that an omnidirectional transmitting antenna is specified, although we question whether the application is correct or if Space X made a mistake in filling out the application. We further note that no technical details regarding the make and model of the S-band uplink antenna were provided in the Space X application.

On July 22, 2015, EIBASS contacted the Above-1 GHz BAS Frequency Coordinator for the Seattle area, Mr. Greg Thies, who advised that he had not been contacted by Space X or anyone representing Space X concerning an Sband uplink at Redmond. Mr. Thies expressed concern that a Redmond Space X transmitter site would have unobstructed line-of-sight to Seattle area ENG receive-only sites.

Because all experimental operations must be conducted on a non-interference basis (NIB) to all licensed operations, EIBASS takes a tolerant view towards experimental licensees wishing to operate on broadcast or BAS frequencies as summarized on the attached list. We therefore share concerns about conditions as expressed in the July 9, 2015, Informal Objection by Intelsat License LLC (Intelsat) against the Space X experimental application namely, "the fact that Space X is required to operate on a non-protection, non-harmful interference basis is of little comfort to GSO operators if the source of the interference cannot be determined." Similarly, BAS licensees will lose a valuable tool for protection of their operations if the source of co-channel interference to Seattle-area ENG operations cannot be determined.

It may be that the limited duty cycle of the proposed Space X S-band uplink, the judicious placing of the uplink center frequency to not straddle ENG channels, and the provision of a hot line "stop buzzer" telephone number that could be called in the event of interference or a major news event in the

<sup>&</sup>lt;sup>2</sup> As categorized by SBE, and as adopted in the July 3, 2002, ET Docket 95-18 Second R&O, the four categories of 2 GHz BAS use are:

**Category I:** "Los Angeles" or "LA." Extremely heavy use, mostly split channel. There is lots of itinerant use and channel borrowing and sharing; even so, seven channels aren't enough.

Category II: "Metro." Spectrum is heavily used, especially during the news hours. There is some split channel use, not a lot, and some itinerant use. There is regular channel borrowing and sharing.

**Category III:** "Light." There is some electronic news gathering (ENG), some fixed link, maybe even some channels mostly vacant most of the time. Typically, a small-market, low-competition situation.

**Category IV: "Rural."** ENG is unheard of, the use is for fixed, long-haul relays to smallmarket TV stations, to TV translator stations, and to cable television headends. In some areas not all channels are even used.

### Informal Objection to Space X WH2XWB Experimental Application, page 3 July 29, 2015

Redmond area, and finally the use of a directional rather than omnidirectional transmitting antenna, would be sufficient to allow successful frequency coordination between Space X and Seattle area 2 GHz TV BAS licensees. Or it may be necessary for Space X to find a more remote, terrain-obstructed uplink site, as was done by Skybox Imaging for its 2 GHz Earth Exploration Satellite Service (EESS) uplink, E130037. Skybox originally proposed a Mountain View, California, venue for its uplink, but that location would have had unobstructed line-of-sight to multiple San Francisco Bay Area ENG-RO sites. Instead, a terrain-obstructed site at Half Moon Bay, California, was found, allowing both the Skybox uplink operation and Category I ENG operations in the San Francisco-Oakland-San Jose TV market. Thus, even though EESS use of 2 GHz TV BAS spectrum is secondary, broadcasters still cooperated with Skybox. EIBASS has always supported spectrum sharing proposals when they are credible, reasonable and conducted in accordance with all applicable FCC rules. We likewise vigrorously oppose proposals that are not.

In summary, based on reasons stated herein, EIBASS respectfully requests that the SBE Clause be placed on any experimental authority or authorities granted to Space X, if such experimental operation includes broadcast or BAS frequencies.

Respectfully,

## /s/ Dane E. Ericksen

/s/ Richard A. Rudman

Dane E. Ericksen

Richard A. Rudman

Enclosure

cc: Mr. Greg Thies, by e-mail: gthies@king5.com
Mr. Howard Fine, by e-mail: howard@pactv.com
Mr. Carl R. Frank, Esq., by e-mail: cfrank@wileyrein.com
Mr. Henry Goldberg, Esq., by e-mail: general@g2w2.com
Mr. David J. Den Herder, by e-mail: daid.denherder@spacex.com
Mr. John Poray, by e-mail: jporey@sbe.org
Mr. Joseph Snelson, by e-mail: joe.snelson@meredith.com
Mr. Dennis Wallace, by e-mail: dennis.wallace@mswdtv.com

# Frequency Bands Requested by SBE to be Subject to the "SBE Clause" for OET Experimental Licenses and Experimental STAs

Frequency	Service(s)
535–1,705 kHz	AM broadcast
25.85–26.49 MHz	HF RPU & Subpart H LPA
54-72 MHz	VHF low band TV & Subpart H LPA
76–88 MHz	VHF low band TV & Subpart H LPA
88-108 MHz	FM
152.85–153.36 MHz	VHF RPU
160.85–161.80 MHz	VHF RPU
166.25 MHz	VHF RPU
170.15 MHz	VHF RPU
174-216 MHz	VHF high band TV & Subpart H LPA
450.00–451.00 MHz	UHF RPU & Subpart H LPA
455.00–456.00 MHz	UHF RPU & Subpart H LPA
470–698 MHz	UHF TV & Subpart H LPA
944–952 MHz	Aural BAS and Subpart H LPA
2,025–2,110 MHz	2 GHz TV BAS
2,450–2,500 MHz <sup>1</sup>	2.5 GHz TV BAS
6,425–6,525 MHz	6.5 GHz TV BAS
6,875–7,125 MHz	7 GHz TV BAS
12,700–13,250 MHz	13 GHz TV BAS
17,700–19,700 MHz	18 GHz Aural & TV BAS

Example of the "SBE Clause," taken from a recent FCC OET experimental grant:

Operation is subject to prior coordination with the Society of Broadcast Engineers, Inc. (SBE); ATTN: Executive Director; 9102 North Meridian Street, Suite 150; Indianapolis, IN 46260; telephone, (866) 632-4222; FAX, (317) 846-9120; e-mail,executivedir @ sbe.org; information, www.sbe.org.

<sup>&</sup>lt;sup>1</sup> Includes grandfathered TV BAS Channel A10, 2,483.5–2,500 MHz, still extensively used by broadcasters.