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January 27, 2011

**VIA ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, DC 20554

Re: Permitted Oral *Ex Parte* Presentation  
IB Docket Nos. 05-20, 02-10 & 07-101

Dear Ms. Dortch:

On January 26, 2011, representatives of The Boeing Company met with representatives of the International Bureau to discuss the technical and operational rules for the Aeronautical Mobile-Satellite Service (“AMSS”), Earth Stations Onboard Vessels (“ESVs”) and Vehicle-Mounted Earth Stations (“VMES”). Participating in the meeting on behalf of the International Bureau were Howard Griboff, Andrea Kelly, Sean O’More, Jennifer Balatan, Paul Locke and Sankar Persuad. Participating in the meeting on behalf of Boeing were Audrey Allison, Alan Rinker and the undersigned.

The discussion during the meeting largely reflected the attached talking points, which were distributed during the meeting, along with Boeing’s prior written submissions in each of the referenced proceedings. The Boeing representatives emphasized that some of the technical and operational restrictions that have been imposed on VMES and ESV networks should not be imposed on AMSS networks because the restrictions are unnecessary to avoid harmful interference and would prevent CDMA-based AMSS networks from making the most efficient use of spectrum to provide broadband services. For example, Boeing’s AMSS network has operated for many years in a manner that, although not consistent with the currently-existing VMES and ESV rules, nevertheless is fully compliant with the Commission’s underlying goals for operations of satellite networks in the Ku-band and has not resulted in any complaints of harmful interference.

If the Commission were to mirror its AMSS rules on the VMES or ESV rules that exist today, the Commission should provide an alternate procedural path toward securing an AMSS license. Specifically,

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the Commission should give AMSS applicants the option to secure a license either by demonstrating compliance with the AMSS rules that are adopted, or by demonstrating compliance with the more technically-neutral standards that exists today in Section 25.220 of the Commission's rules.

Recognizing the growing experience of the satellite industry in operating AMSS, VMES and ESV networks without resulting in harmful interference, the Commission should eventually streamline its technical and operational rules for all three services to remove spectrally inefficient restrictions (such as the requirement to operate 1 dB below the off-axis e.i.r.p. density mask) and technically non-neutral requirements (such as the  $10 \cdot \log(N)$  rule). This could be done in the context of the petitions for reconsideration that are currently pending in the VMES and ESV proceedings and in the context of a further notice and, thereafter, a second order, in the AMSS proceeding.

Please contact the undersigned if you have any questions.

Sincerely,

/s/ Bruce A. Olcott

Bruce A. Olcott

Counsel to The Boeing Company

# MOBILE TERMINALS IN KU-BAND SATELLITE SPECTRUM

## THE BOEING COMPANY

IB Dockets 05-20, 02-10 & 07-101

January 26, 2011

- In adopting service rules for AMSS in the Ku-band, the Commission should facilitate efficient spectrum use and growth in competitive broadband service offerings by:
  - Avoiding technically non-neutral approaches to avoiding harmful interference
  - Discarding unnecessary restrictions on CDMA-based networks previously adopted for ESV and VMES systems
- The Commission should not adopt technically non-neutral requirements addressing such issues as pointing accuracy, transmission cessation, minimum antenna size, antenna tracking performance or tracking accuracy
  - As the Commission concluded in its ESV Order, “[w]e agree with Boeing that adopting off-axis e.i.r.p.-density rules, as opposed to adopting multiple operating restrictions that accomplish the same objective, is the proper approach”
  - The Commission further observed that “in addition to providing simpler service rules, this approach also provides maximum flexibility to ESV operators in implementing the two-degree spacing limits”
- The  $10 \cdot \log(N)$  rule is equally unnecessary, inefficient and prevents network operators from providing a variety of competitive broadband data-rate options and pricing plans
  - By requiring that each customer be apportioned an equal percentage of network transmit power, the  $10 \cdot \log(N)$  rule precludes sales to multiple aircraft sizes and terminal classes such as higher data-rate terminals and lower data-rate terminals
  - Dynamic power CDMA-based systems should instead be authorized on an ALSAT basis to operate up to the aggregate off-axis EIRP spectral density mask without the  $10 \cdot \log(N)$  rule and without a 1 dB reduction in power level
- Unlike FDMA or TDMA systems, dynamic power CDMA-based mobile networks can allow more than one transmitter to concurrently use the same frequency channel without exceeding the off-axis EIRP density limits, thereby more efficiently using spectrum
  - Boeing’s mobile Ku-band network employs a “bandwidth-on-demand” dynamic power control that varies the transmit power levels of individual terminals based on capacity needs while complying with aggregate off-axis EIRP density limits
  - Boeing has successfully operated its dynamic power control Ku-band network for many years without resulting in harmful interference to adjacent networks

- The Commission should employ this same approach to address the inconsistent and incomplete rules adopted and released on July 31, 2009 for ESV and VMES networks
  - o The VMES rules unnecessarily restrict the spectral efficiency and commercial viability of CDMA-based VMES networks
    - The aggregate EIRP-density of such networks is inefficiently restricted to at least 1 dB below the off-axis EIRP-density mask
    - Such networks are precluded from being licensed on an ALSAT basis
  - o The ESV rules also impair the growth of CDMA-based mobile networks
    - The  $10 \cdot \log(N)$  rule for ESVs does not address networks using variable power terminals, defining N only for CDMA-based ESV networks “that have the same EIRP” for each terminal