

March 26, 2018

**FILED VIA ECFS**

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, S.W., Room TW-B204  
Washington, D.C. 20554

**Re:   *Ex Parte* Notification  
      GN Docket No. 17-183  
      RM-11791**

Dear Ms. Dortch:

The Broadband Access Coalition (“BAC”) hereby responds to the technical analysis submitted with the March 2, 2018 *ex parte* filing by SES Americom, Inc. (“SES”).<sup>1</sup> According to SES, its technical analysis “demonstrates that significant separation distances [between terrestrial *mobile* base stations and fixed-satellite service earth stations in the 3700 – 4200 MHz band (“C-band”)] would be needed to prevent unacceptable interference to ... C-band satellites ....”<sup>2</sup> The SES technical analysis makes incorrect assumptions and thus fails to address the BAC’s proposal to share the C-band between point-to-multipoint (“P2MP”) *fixed* wireless broadband links and FSS earth stations on a frequency- and geography-coordinated basis that protects incumbent C-band earth stations. Properly considered, sharing the C-band among P2MP *fixed* links and C-band earth stations is quite feasible.

The SES technical analysis is inapplicable to sharing with fixed P2MP services for the following reasons.

First, and most importantly, SES broadly assumes that multiple antenna sectors are configured for omnidirectional coverage. Although this may be the case for *mobile* base stations, it is not at all the case for *fixed* wireless base stations, which most often operate on a directional, sectorized basis to serve customers in fixed locations and to leverage the benefits of frequency re-use. Standard beam antennas can be constrained to avoid pointing in the direction of earth stations, while more advanced beam forming antennas can go further by placing nulls in the direction of earth station locations. Given that earth station locations are static and can be well known (even in advance of P2MP network planning), directional avoidance is a simple, common and highly effective method for co-existence.

Second, SES incorrectly assumes that each of the earth stations considered in the Virginia Beach area is using all 500 megahertz of the C-band. Such usage is highly unlikely. In fact, it is more likely that each earth station is using only a portion of the C-band. This false assumption demonstrates, yet again, why it is imperative for the Commission to collect data on the actual

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<sup>1</sup> The SES technical analysis is set forth in the Technical Annex attached to the SES *Ex Parte* Letter, GN Docket No. 17-183, filed March 2, 2018 (SES *Ex Parte*).

<sup>2</sup> SES *Ex Parte* at 1 (emphasis added).

frequencies currently being used by FSS C-band earth stations.<sup>3</sup> Moreover, although C-band earth stations may have the ability to access the entire 500 megahertz, users are not entitled to interference protection for frequencies that they are not using.

Third, the Technical Annex mistakenly posits that exclusion zones of 60 – 75 kilometers are required around each FSS earth station, regardless of whether co-channel or adjacent-channel protection is necessary. For example, if an FSS earth station is receiving at 3700 – 3736 MHz, a co-channel terrestrial link would have to be at least 60 kilometers away to avoid creating harmful interference, assuming that SES's technical analysis is correct.

By contrast, the exclusion zones for non-co-channel operations are significantly smaller. The ITU's November 2010 report (ITU-R S.2199) studied the compatibility of broadband wireless access systems ("BWA") and FSS earth stations operating in the 3400 – 4200 MHz band.<sup>4</sup> That report found that adjacent channel sharing between BWA and FSS would require an exclusion zone of "a few km" to protect against out-of-band emissions, and "a few to several km" to protect against FSS receiver saturation.<sup>5</sup> And this was a worst case analysis, which assumed no shielding and no other interference mitigation techniques.<sup>6</sup>

The SES Technical Annex provides no information on what frequencies the studied Virginia Beach earth stations are actually using, and therefore, the analysis is not useful for assessing the opportunities for adjacent channel sharing within the C-band. Obviously, there is a huge difference between a 60 – 75 km exclusion zone and an exclusion zone of "a few to several km." When considering the BAC's proposals, the latter exclusion zone must be examined.

Fourth, SES assumes power levels that are higher than the BAC proposed in its petition for rulemaking. The BAC proposed a +50 dBm (+20 dBW) EIRP cap and a 1 watt (+30 dBm, 0 dBW) conducted power cap. By contrast, the SES Technical Annex used mobile macrocell power of +58 dBm (+28 dBW) EIRP and 20 watts (+43 dBm, +13 dBW) conducted. Because it fails to take into account the maximum power limits the BAC proposed for fixed P2MP services, SES's Technical Annex is incomplete.

Fifth, SES assumes a 25 meter HAAT, which, in the flat Virginia Beach area, generally translates into 25 meter height Above Ground Level (AGL), a height that is higher than fixed wireless providers typically use. In rural areas, fixed wireless providers often use silos or grain legs which can be at 25 meters AGL, but in some areas access points are located on poles or rooftops, which are much lower than 25 meters.

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<sup>3</sup> See Broadband Access Coalition Ex Parte Letter, Attachment 1, Proposal to Update the International Bureau Filing System, filed January 24, 2018, in GN Docket No. 17-183 and RM-11791; see also, AT&T Services, Inc. *Ex Parte* Letter, filed March 12, 2018, in GN Docket No. 17-183.

<sup>4</sup> Report ITU-R S.2199 (Nov. 2010), Studies on compatibility of broadband wireless access systems and fixed-satellite service networks in the 3400 – 4200 MHz band ("2010 ITU Report").

<sup>5</sup> 2010 ITU Report, Section 8(d), Conclusions, at 18.

<sup>6</sup> *Id.*

In conclusion, the SES Technical Annex makes assumptions that are not relevant to sharing with frequency- and geographically-coordinated fixed P2MP services. These services could operate in the C-band without causing harmful interference to incumbent earth stations that are entitled to protection.

Respectfully submitted,

**Broadband Access Coalition**

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