Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of Viasat, Inc. Applications for Earth Station Licenses	)	File Nos. SES-LIC-20210323-00557; SES-LIC-20210323-00558; SES-LIC-20210323-00559; SES-LIC-20210402-00613; SES-LIC-20210402-00614; SES-LIC-20210402-00609; SES-LIC-20210402-00610; SES-LIC-20210402-00611; SES-LIC-20210416-00706; SES-LIC-20210416-00707; SES-LIC-20210416-00708; SES-LIC-20210416-00709; SES-LIC-20210416-00713; SES-LIC-20210416-00715; SES-LIC-20210719-01082; SES-LIC-20210719-01083; SES-LIC-20210416-00714 Call Signs: E210056; E210057; E210058; E210067; E210068; E210063; E210064; E210065; E210094; E210095; E210096; E210097; E210098; E210100; E210128; E210129; E210099

REPLY IN SUPPORT OF VERIZON'S PETITION

The International Bureau's guidance on siting methodologies for earth stations operating in Upper Microwave Flexible Use Service bands makes clear that "[a]pplicants should *not* use statistical models to estimate clutter loss when there are more accurate means of estimating clutter loss" (which there are here).[1] The Bureau's guidance also makes clear that "[a]pplicants should provide a list of input parameters and formulas used to calculate the PFD contours or protection zones to allow for independent verification of . . . the PFD contours and protection zones."[2] Viasat's Applications fail on both fronts: Viasat used a statistical model to estimate

[1] Public Notice, *International Bureau Issues Guidance on Siting Methodologies for Earth Stations Seeking to Operate in the 24.75-25.25 GHz, 27.5-28.35 GHz, 37.5-40 GHz, 47.2-48.2 GHz, and 50.4-51.4 GHz Frequency Bands to Demonstrate Compliance with Section 25.136*, 35 FCC Rcd 6347 at 3 (2020) (emphasis added).

[2] *Id.*

clutter loss. And, Viasat has refused to provide information regarding the assumptions it used in that model for Verizon to verify its earth stations' contours.

The Bureau's guidance is critical to ensuring that—as the Commission intended—terrestrial licensees have certainty regarding the operating parameters of earth stations in their license area.[3] And Verizon's Petition showed why the use of accurate data and verifiable assumptions in calculating an earth station's contour is important: if the use of a statistical clutter model artificially reduces the size of the contour, this could have a significant impact on whether the earth station satisfies Section 25.136's criteria for operating on a protected basis.[4] Viasat claims that it "has amply demonstrated that its proposed earth stations satisfy the criteria in Section 25.136(a)."[5] But Viasat ignores that its Bremen, Georgia earth station touches a passenger railway. Again, there is no *de minimis* exception to Section 25.136, so this earth station's contour violates the Commission's rules. Further, five of Viasat's earth stations are located near interstates and principal arterials, and Viasat's Edinburg, Virginia earth station requires a wall.[6] If Viasat's use of a statistical clutter model has artificially reduced the size of these earth stations' contours, under more realistic assumptions, the interference zones could also encompass areas prohibited by the Commission's rules.[7]

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[3] *See* Report and Order and Further Notice of Proposed Rulemaking, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 31 FCC Rcd 8014, ¶ 60 (2016) (the Commission's rules seek to "provide predictability to terrestrial licensees").

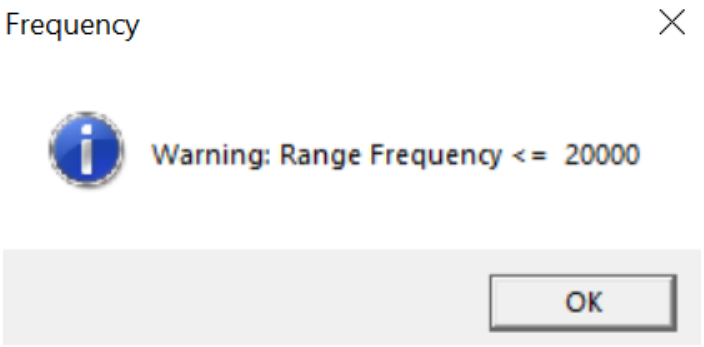
[4] *See* Petition of Verizon, IBFS File No. SES-LIC-20210323-00557 *et al*. at 4-5 (Sept. 3, 2021) ("Verizon Petition").

[5] Opposition of Viasat, IBFS File No. SES-LIC-20210323-00557 *et al*. at 1 (Sept. 16, 2021) ("Viasat Opposition").

[6] *See* Verizon Petition at 4-5.

[7] Viasat states that Verizon's claim "that the actual contours could exceed Viasat's predictions and potentially infringe on restricted roadways and railway lines is entirely unsupported and is contradicted by Viasat's demonstrations of compliance." Viasat Opposition at 3. However, it is *Viasat's* burden to demonstrate compliance with the Commission's earth station siting rules, and whether Viasat's Applications demonstrate compliance with those rules is exactly the question. It is not sufficient for Viasat to baldly state that it used a "conservative" analysis, which, moreover, is unlikely for the reasons Verizon's Petition explained.

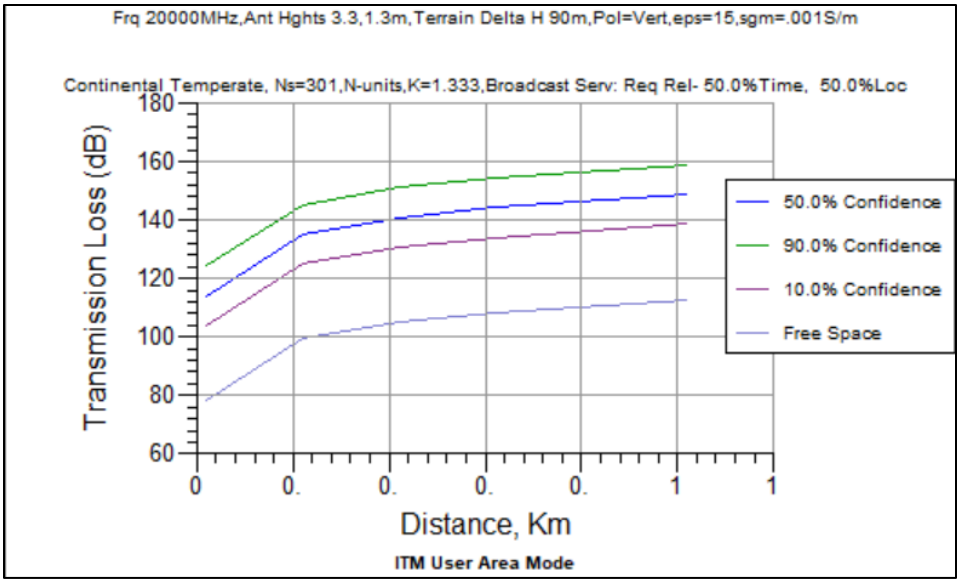
Viasat defends its use of NTIA's Irregular Terrain Model ("ITM") as "transparent."[8] But Viasat's purported transparency does not change the fact that the ITM model is from 1984 and for frequencies between 20 MHz and 20 GHz. Indeed, when Verizon attempted to recreate the earth stations' contours using an executable version of the model on NTIA's website, the model would not run for frequencies above 20 GHz and the following error message appeared:



Even if Viasat's use of the ITM model were justified (which it is not), Viasat has not been transparent in providing the assumptions that it used to model clutter loss, or the outputs of the model that its Applications reflect. For example, Viasat failed to disclose statistical parameter inputs required to run the model, such as the percentage of time and percentage of locations, as well as other inputs such as surface refractivity, conductivity of ground, and dielectric constant of ground. Even if Verizon could deduce these inputs (which it cannot), Viasat also failed to provide the confidence level that its transmission loss reflects. Below is a sample output from the ITM model showing the variability in results at 20 GHz depending on the confidence level assumed.[9]

[8] Viasat Opposition at 2.

[9] As mentioned above, the ITM model does not run for frequencies above 20 GHz, so Verizon used 20 GHz for illustrative purposes only.



Finally, Viasat claims that it has provided "the input parameters and calculations to produce the measured gain patterns for the proposed earth stations."[10] Irrespective of whether this is true, Viasat is incorrect to suggest that this is all the information Verizon needs to verify an earth station's PFD contour. Thus, the Commission should defer Viasat's Applications until Viasat has provided updated contours that do not rely on a statistical clutter loss model, as well as the assumptions and data upon which its calculations are based. And, if Viasat's updated contours encompass interstates, freeways, principal arterials, or passenger railroads (as its Bremen, Georgia earth station does), Viasat must use sufficient shielding to reduce the size of its earth stations' contours to comply with Section 25.136 and operate without providing interference protection.

[10] Viasat Opposition at 3.

Respectfully submitted,

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AFFIDAVIT

Pursuant to 47 C.F.R. § 25.154, I hereby certify that I am the qualified person responsible for preparation of the information contained in this filing, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the information submitted in this filing, and that it is complete and accurate to the best of my knowledge and belief.

Respectfully submitted,

/s/ Roy T. Smith
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CERTIFICATE OF SERVICE

I hereby certify that on September 28, the foregoing Reply was served by via First Class mail on the following:

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