Exhibit A

Technical Analysis

The Commission's rules permit GSO FSS use of the 27.5-28.35 GHz band segment for gateway-type earth stations on a secondary basis to Upper Microwave Flexible Use Service ("UMFUS"). Viasat submits the following showing to demonstrate that the proposed gateway-type earth station, or satellite access node ("SAN") is compatible with UMFUS operations in accordance with Section 25.136.

In selecting the site, Viasat relied on both computer database and RF measurement surveys conducted by Comsearch at the actual earth station location. The field measurements showed no measurable radio-frequency activity in the 27.5-28.35 GHz frequencies (see attached Comsearch report). The Comsearch report includes photographs and maps of the earth station location. Additionally, a Prior Coordination Notice (PCN) has been sent out to coordinate with the terrestrial licensees in and around the coverage contour. No terrestrial licensees have objected.

Viasat conducted a technical analysis to determine the region around the earth station where the power flux density (PFD) at a height of 10 m above ground level would be equal to or greater than -77.6 dBm/(m^2 * MHz).

The analysis was performed both using a simple spreadsheet approach as well as by using the Visualyse Pro software to perform an area analysis around the earth station.

In the case of the spreadsheet analysis, the parameters used were taken from the FCC Form 312 application and supporting exhibits.

Antenna Diameter	4.1	m
Antenna Gain	59.6	dB(i)
Antenna Input Density	-25.8	dB(W/MHz)
EIRP Density	33.8	dB(W/MHz)
EIRP Density	9.8	dB(W/4 kHz)
Antenna Disc toward Horizon	70.8	dB
Density toward Horizon	-37.0	dB(W/MHz)
Density toward Horizon	-61.0	dB(W/4 kHz)
Additional losses toward victim	10.0	dB
Boundary Limit in flux density	-107.6	dB(W/(m^2*MHz))
Required distance	301.9	m

Table 1 – Required Distance to -77.6 dBm/(m^2 * MHz) Limit

The distance calculated is in Table 1 is along the azimuth of the main lobe of the antenna. The formula used to calculate the required distance is:

SQRT(10^((Density toward horizon - Additional losses – Boundary Limit)/10) / (4 * PI()))

The above calculation provides a simple baseline estimate of the required separation distance in the direction of the main lobe of the antenna. An additional loss of 10 dB over free space is also included to account for clutter. This conservative estimate is well below the median value for clutter loss for the distance as calculated by the statistical model of Recommendation ITU-R P.2108.

To perform a more detailed analysis of the other directions around the antenna, the software tool Visualyse Pro by Transfinite Systems, Ltd[1] was used.

To perform the analysis, the 4.1 m antenna pattern was imported into Visualyse, then a link defined to use appropriate power per MHz reflecting the values used in the FCC license application. The antenna was configured to point at the ViaSat-2 satellite at 69.9° W.L. in order to establish the operational azimuth and elevation angles.

To measure the PFD in the area around the Viasat SAN antenna, a reference antenna was created in Visualyse with 50.4 dBi gain. This is needed because Visualyse performs its calculation using power density not PFD. The 50.4 dBi gain effectively converts the power density value to a PFD value so Visualyse displays the results in terms of PFD. The gain of a meter square area at 28.1 GHz is calculated in dBi as $G = 10 * \log(4 * \pi / \lambda^2)$, where $\lambda = 1.06$ cm at 28.1 GHz

As Visualyse works in dBW rather than dBm, the -77.6 dBm/(m^2 * MHz) is converted to dBW/(m^2 * MHz) by subtracting 30 dB.

An area analysis region is created around the SAN earth station and the reference antenna is then moved in small steps all around the area to measure the value of received power at each location step. The display settings of the area analysis are set to -107.6 to reflect the PFD limit in dBW. Once the area analysis has been completed, the contour can be exported as a .kmz file for viewing in Google Earth or other GIS mapping software such as MapInfo or ArcGIS.

Figure 1 shows the contour as calculated by Visualyse and imported into GIS mapping software. When importing the contour into GIS mapping software it can be observed that the earth station contour is located entirely within Luzerne county. A search of the IBFS database for other earth stations licensed in the 27.5-28.35 GHz band indicates that there are no other earth stations licensed in these bands in this county.

The contour covers portions of four different census blocks (2000, 2005, 2010, and 2011). Block 2000 has a population of 61, block 2005 has 47, and blocks 2010 and 2011 have zero population. The total population of these four census blocks is 108.

The population for Luzern county is 320,918 which is less than 450,000, so the 450 population limit of 25.136(a)(1)(ii) applies. As seen in Figures 1 and 2 below, the contour covers only a portion of each of the four census blocks. However, even if the contour covered the entire geographic area of those census blocks (which it clearly does not), the total population of 108 is

[1] https://www.transfinite.com/content/professional

well below the 450 population limit. Thus, the actual population in the partial coverage of the contour is well within that limit. No further analysis of actual population covered is required.

Figure 1 – Census block view of contour

The area covered by the -77.6 dBm/(m^2 * MHz) contour does not contain any major event venue, urban mass transit route, passenger railroad, or cruise ship port. The predicted contour covers a portion of a road, but the road is not identified as an Interstate, Other Freeway or Expressway, or Other Principal Arterial on the Federal Highway Administration Office of Planning, Environment, and Realty Executive Geographic Information System map.[2] In any event, by inspection in Google Earth in Figure 2, the buildings to the northeast are expected to provide shielding and thus, the contour is not expected to extend in the direction of the roadway.

[2] https://hepgis.fhwa.dot.gov/fhwagis/#

Figure 2 – Scranton -77.6 dBm/(m^2 * MHz) PFD contour