



May 19, 2021

FILED VIA IBFS

Alyssa Roberts
Policy Branch
International Bureau
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

Subject: Response to FCC questions
Astro Digital US, Inc.
SAT-MOD-20210319-00036

Dear Alyssa:

By this letter, Astro Digital US, Inc. (“Astro Digital”) responds to your questions regarding the above-referenced satellite modification application.¹ For your convenience, the questions are reproduced below in italics:

- 1. Is the Globalstar terminal on Demo9 a simplex terminal? If not, please explain why there is no indication of a 2.4 GHz Globalstar to Astro Digital link in the narrative (pp 4-5, Table 2).*

Correct, the Globalstar terminal on Demo9 is a simplex terminal.

- 2. For the Demo8 planned orbital maneuvers, in its April 9, 2021 letter, Astro Digital states it will be imaging an in-orbit object and conducting various maneuvers to reach the particular location. Please state what the object is. In addition, please provide specific information as to the distance of the closet approach, how long Demo8 will remain at the closest approach, and whether Demo8 will return to its prior orbit or a new orbit. Please provide additional detail regarding how Astro Digital will share information regarding the Demo8 location with 18 SPCS and other operators during the close approach. How frequently will the information be updated? Additionally, please provide a detailed expected timeline for the maneuvers.*

¹ See Email from Alyssa Roberts, Satellite Policy Branch, International Bureau, Federal Communications Commission, to Chris Bidy, CEO, Astro Digital US, Inc. (May 17, 2021).



The planned orbital maneuvers for the Demo8 mission are to demonstrate rendezvous and proximity operations capability by picking a location in space (a simulated object), calculating a trajectory to reach that location and then conducting the associated maneuvers to reach that location.

A mission stretch goal is to conduct orbital maneuvers to perform a fly-by of an object and imaging the object during the closest approach to the object. Commencement of the stretch goal is contingent on permission from the owner of the object and successful demonstration of the Demo9 primary mission objectives mentioned above, including demonstration of propulsion system performance. Astro Digital will submit a modification application to the FCC seeking authorization for the close approach prior to commencement of the mission stretch goal.

The primary mission demonstrations summarized above will be conducted such that maneuvers will not result in an increase to the apogee of the satellite at its deployment orbit, which is expected to be, at worst, 550 km, as stated in the Orbital Debris Assessment Report (“ODAR”) submitted in the application.

All planned, propulsive maneuvers will be coordinated with the USSF 18th SPCS and with NASA CARA (Conjunction Assessment and Risk Analysis) and will be screened by the USSF 18th SPCS for collision avoidance purposes. Astro Digital will provide propulsive maneuvers information through the 18th SPCS Space Track website at least 5 days prior to performing the maneuver. As stated in the ODAR, a sufficient amount of propellant will be reserved to support an end-of-mission set of de-orbit maneuvers to accelerate the passive de-orbit of the satellite, as well as for collision avoidance maneuvers.

For completeness, Astro Digital notes that it plans to image the Sherpa-LTE1 Orbital Transfer Vehicle with the Demo8 satellite immediately following deployment from the Sherpa-LTE1 Orbital Transfer Vehicle. No propulsive maneuvers will be conducted by the Demo8 satellite during this post-deployment imaging phase. (As stated in the application, we are aware of and will obtain NOAA license approval for any imaging of artificial resident space objects and have already secured permission to image the Sherpa-LTE1 from its owner, Spaceflight Inc., as required under NOAA regulations).

Please do not hesitate to contact me if you have any further questions.

Sincerely,

s/ Chris Biddy

Chris Biddy
CEO
Astro Digital US, Inc.



Astro Digital Inc.
3171 Jay St, Santa Clara CA 95054

CC: Merrisa Velez
Sam Karty