

Response to May 24 Additional Information Request  
Reference Nos. 62159 & 62571  
File No. 0061-EX-CM-2021  
June 11, 2021

*Questions and Answers:*

- (1) *In part b) of the EG-3 ODAR response, you state you may maintain altitude and inclination during the 3-year mission after reaching an altitude of 650 km. Please provide the tolerances (+/- km off 650 km, and +/- degrees off 96 degrees) the satellite will be maintaining.*

As EchoStar Global previously stated, EG-3 is not subject to orbital tolerance requirements, and thus no station-keeping is planned once the satellite reaches its intended mission orbit. EchoStar Global also noted that any fuel remaining after EG-3 reaches its planned mission orbit *may or may not* be used for additional maneuvers, including for orbital adjustment and maintenance to extend the mission life, end-of-life de-orbiting, and collision avoidance. Thus, such additional maneuvers, although possible, are not planned for the nominal mission. More specifically, station-keeping maneuvers are not planned to maintain the spacecraft within any tolerance of the intended mission orbit. Consequently, as EchoStar Global further indicated, EG-3 is expected to operate as close to its intended mission orbit as possible, subject to natural forces experienced on orbit and the spacecraft's mechanical ability to compensate.

- (2) *In part d) of the EG-3 ODAR response, you clarified that the spacecraft will operate at 650 km, not 550 km. This confirmation, along with the information from part b) that altitude and inclination will be maintained at 650 km, 96 degrees has an impact on the DAS analyses previously provided. In the ODAR document dated 2/24/2021, all the DAS analyses show that the satellite will not be maintaining its altitude or inclination (you set "Station-Kept" to false). Additionally, the mission duration was set to 5 years while the actual mission duration is 3 years as indicated in Table 1-2. Please redo the appropriate DAS calculations (large object collision risk, orbital lifetime, etc.) with "Station-Kept" set to true and a duration of 3 years.*

Because station-keeping maneuvers are not planned to maintain the spacecraft within any tolerance of the intended mission orbit, all DAS calculations were properly performed with "Station-Kept" set to false, along with assumptions of normal orbital decay from natural forces, such as gravity, atmospheric drag, and solar pressure.

Additionally, the DAS calculations show that post-mission disposal of the spacecraft by atmospheric re-entry will be completed by 2047, within the benchmark 25-year period following the mission lifetime. Consequently, these DAS calculations remain the same, regardless of whether the mission duration is set to 3 or 5 years.

- (3) *In part e) of the EG-3 ODAR response, the original question was aimed at the EG-3 transiting through the ISS altitude as it decays during its post-mission timeframe. Are there any plans to perform collision avoidance when transiting through the ISS altitude during its*

*post-mission timeframe? Will there be coordination with any agencies, such as the 18th SPCS, NASA or others for purposes of tracking the spacecraft as it transits through this altitude range during the post-mission timeframe?*

As noted in Sections 6.0 and 7.1 of the EG-3 ODAR, post-mission disposal of the spacecraft is expected to be implemented by uncontrolled atmospheric re-entry. Accordingly, EchoStar Global does not expect to track or control the spacecraft as it decays and transits through the ISS altitude during the post-mission timeframe. EchoStar Global understands, however, that the Joint Space Operations Center (“JSpOC”) ordinarily tracks space objects and coordinates with NASA if any spacecraft or other space object is expected to be within 5 km of the ISS. Moreover, in the unlikely event that EG-3 can be tracked and controlled during post-mission disposal, EchoStar Global plans to coordinate with JSpOC and NASA to ensure safe de-orbiting of the spacecraft.