From: Carlos Nalda

To: Nimesh Sangani
Date: February 03, 2021

Subject: Additional Information Request

Message:

Care Weather provides the following responses to inquiry Ref. No. 59735 of Feb. 1, 2021:

1.) All of the components in the DAS survivability section are listed as "New Component" with a number. Please provide the actual component names

Care Weather Response: The ODAR has been updated to Revision B and the individual component names have been provided.

2.) In the Description of Proposed Experimentation document, you state there are deployable solar arrays. The ODAR contains no information regarding either deployable components or stowed/deployed satellite configurations. Please provide the physical dimensions for both satellite configurations, as well as area-to-mass figures, orbital lifetimes, and large object collision risk numbers. As well, are there any additional deployable components beyond the solar arrays?

Care Weather Response: In consultation with its launch provider, Care Weather has made minor adjustments to the Veery-RL1 design that will have no impact on spectrum use or compatibility but will reduce maximum orbital lifetime (from 3.7 to 3.5 years). Rather than deployed solar panels, there will be four deployed drag panels (as well as solar panels on the face of the cubesat). Due to the "whip" deployment of the drag panels (constrained by the walls of the dispenser) the only configuration that can occur on-orbit is the deployed configuration.

Revision B of the ODAR provides an illustration of the satellite with deployed drag panels, as well as physical dimensions, and area-to-mass ratios. Revision B also provides updated DAS outputs, including the collision risk and orbital lifetime, among others. There are no additional deployable components beyond the drag panels. We have also updated the narrative description to reflect the drag panels, as well as a revised description of onboard reaction wheels for attitude control. Again, these minor improvements will have no impact on spectrum use.

3.) The large object collision risk in Section 5 is given as 2.24E-7, while the DAS logs show 3.2538E-7. Please provide the correct large object collision risk for the satellite and explain the inconsistency.

Care Weather Response: We apologize for this inconsistency, which resulted from early edits to the system design not being updated in all the relevant locations in the original ODAR. In Revision B, these analyses have been updated and the relevant values have been cross-checked between the DAS log and the text to ensure consistency.

4.) Please provide an overview of the propulsion operations of the satellite. Will propulsion be used for stationkeeping, and if so, to what tolerances? Will the propulsive maneuvers be used for significant changes to orbital parameters, or to extend the life of the satellite beyond the proposed ~3.7 years? Are there any plans to use remaining fuel to perform orbit lowering at the end of the mission?

Care Weather Response: The satellite propulsion system is for experimental demonstration. It will be the smallest propulsion system ever flown (weighing 34g as compared to 480g for Accion Tile 2). The goal of its inclusion is to evaluate the state of the art in nanosatellite and picosatellite propulsion. Measurements from the IMU accelerometer will validate thruster operation and measure thruster performance. The propulsion system will not be used for stationkeeping or for significant changes to orbital parameters. All

thruster tests will be oriented to lower the orbit, thereby reducing orbit lifetime even further than the inclusion of drag panels, but the magnitude of the additional reduction is not known at this time.

This information, along with an description of onboard reaction wheels for attitude control, has been included in the updated narrative submitted through ELS.

Best regards,
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