

The application indicates that the SC1 satellite will be deploying a cube attached with a tether.

() Some of the items identified for Assessment for Special Classes of Space Missions that apply to **tethers** were not included in the ODAR. Specifically, the minimum size of object(s) that could sever the tether, probability of tether colliding with large space objects (this is separate from the standard spacecraft large object collision risk and requires separate calculations), probability of tether being severed during mission or after post-mission disposal, maximum orbital lifetime of each severed tether fragment, etc.

() What types of materials is the tether made of?

() Is the tether retractable and will the tether and cube be retracted to the spacecraft once the mission is completed?

() What is the maximum length of this tether?

The application describes utilizing a NPC Spacemind ARTICA **drag sail** in their technical description. However, this drag sail was not address in the ODAR.

() What types of materials is the sail made of?

() What is the maximum length and width of this sail?

() What is the area-to-mass ratio of the satellite with a deployed sail?

() What is the probability of the sail colliding with large space objects (pretty sure this is separate from the standard spacecraft large object collision risk and requires separate calculations), probability of sail being severed after post-mission disposal, maximum orbital lifetime of each severed sail fragment, etc.

() ODAR shows one area-to-mass ratio of 0.1783 m<sup>2</sup>/kg for the operational case. Additionally, we would like to see a non-deployable solar panel and tumbling spacecraft scenario area-to-mass ratio and associated large collision risk probability value.

In page 26, ODAR Section 7: Assessment of Spacecraft Reentry Hazards

Name	Qty	Material	Body Type	Mass (kg)	Diameter / Width (m)	Length (m)	Height (m)	Demise Alt	Total DCA	KE
SC1CUBEWHEEL PM ID Flywheel	1	Steel ISI 410	Box	0.278	0.1	0.1	0.05	0	0.41	87.34

The risk of human casualty is 1:126,400 from DAS.

() Please provide any information concerning the steps taken to design for demise for the spacecraft that were considered and why the current design was chosen. Were alternate designs considered in an effort to reduce or eliminate all risk? If so, explain in detail why they were not chosen.

Radio Frequency Questions:

() For the planned WiFi communication in the 2.4GHz band between module inside the spacecraft, how is the applicant ensuring that the radio frequency emission are contain within the spacecraft structure? Is there any chance that the RF emission can be leak out from inside the spacecraft?

() What is the WiFi maximum EIRP density of the RF emission being used?

() Please provide a power-flux density showing in the 2200-2290 MHz band demonstrating compliance with Article 21.16, Table 21-4 limit.

We note that in the FCC Form 442 for the 2264 MHz band, the EIRP given as 0.38 Watt that calculates to an EIRP -2.1 dBW. However, the EIRP in the SpaceCap API file, calculates to an EIRP of 5 dBW.

() Please review the differences in EIRP values of -2.1 dBW (Form 442) and 5 dBW (SpaceCap API) and adjust one of the value for technical consistency.