

Large Object Collision Probability DAS Calculation

1102-EX-CN-2023 ref 83418

The planned release orbit for the RAY Satellite, file 1102-EX-CN-2023, has changed from 500 km to 510 km. FCC requested the probability of large object collision be re calculated based on this new altitude.

As shown below, the probability = 6.2693E-6, which meets the requirement that it be less than 0.001.

The screenshot shows the DAS software interface with the following components:

- Left Panel:** A tree view showing the process for limiting orbital debris, with Requirement 4.5-1 (Probability of Collision With Large Objects) highlighted.
- Input Section:** A table for "Limiting Debris Generated by Collisions with Large Objects" with the following data:

Space	Perigee	Apogee	Inclination	RAAN	Argument ...	Mission	Final Area-To-M...	Final
Structure	(km)	(km)	(deg)	(deg)	Perigee (d...	Duration (yrs)	Ratio (m ² /kg)	Mass (kg)
Ray_1.0	Payload	510	510	97.4		11	.00476	63.44
- Buttons:** "Run", "Requirement", and "Help".
- Output Section:** A table showing the collision probability:

Space	Compliance	Collision	
Structure	Status	Probability	
Ray_1.0	Payload	Compliant	6.2693E-06
- Messages:** A message box stating "Requirement 4.5-1: Compliant - Ray_1.0".