ASTRA RROCI Satellite
FCC Experimental License Application File No.: 0867-EX-CN-2021

Supplemental Exhibit – Responses to FCC Questions dated February 4, 2022

Correspondence Reference Number: 67282

The FCC sent the following question to the applicant on February 4, 2022:

> Please provide the specifics of the PMD orbit lowering. How long will PMD orbit lowering take once started? What is the target circular orbital altitude you will direct the spacecraft to lower to? If there is sufficient fuel once the target PMD orbit lowering has been achieved, will further lowering of the orbit be performed or not?

ASTRA has completed calculations and is submitting the following response:

How long will the deorbit take?

> The duration of the entire reentry plan is 527.2 days

Target Circular Orbit?

> The thrusters will be used to lower the orbit from 642 to 500 km. Then, RROCI will allow its orbit to naturally decay to 425 km.

Will there be further lowering?

> Then, de-orbit rapidly from 425 to 300km utilizing the MPT thruster to quickly move through the ISS danger zone (still in a circularized orbit, no highly elliptical orbits proposed)

The calculations showing this orbital lowering and decay are in the table below:

		ΔV, m/s	engine	Δm_fuel, kg	Thrust or Drag, μN	duration, days
STEP 1	642km down to 500km	81	MPT	0.132	201.4	85.8
STEP 2	500km down to 425km	44	friction		23.6	398
STEP 3	425km down to 300km	75	MPT	0.122	563.0	28.4
STEP 4	300km down to earth	188	friction		variable	15