

EXHIBIT C

ICEYE ORBITAL DEBRIS MITIGATION PLAN¹

Requirement Number	Requirement Text	Compliance and Reference
4.3-1	Debris passing through LEO – released debris with diameters of 1 mm or larger.	COMPLY Section III.A.
4.3-2	Debris passing near GEO – released debris with diameters of 5 mm or larger.	COMPLY Section III.A.
4.4-1	Limiting the risk to other systems from accidental explosions during deployment and mission operations while in orbit about Earth or the Moon	COMPLY Section III.B.
4.4-2	Design for passivation after completion of mission operations while in orbit about Earth or the Moon	COMPLY Section III.C.
4.4-3	Limiting the long-term risk to other systems from planned breakups for Earth and lunar missions	COMPLY Section III.B.
4.4-4	Limiting the short-term risk to other systems from planned breakups for Earth orbital missions	COMPLY Section III.B.
4.5-1	Limiting debris generated by collisions with large objects when in Earth orbit	COMPLY Section III.D.
4.5-2	Limiting debris generated by collisions with small objects when operating in Earth orbit	COMPLY Section III.D.
4.6-1	Disposal for structures in or passing through LEO	COMPLY Section IV.A.
4.6-4	Reliability of post-mission disposal operations in Earth orbit	COMPLY Section IV.A.
4.7-1	Limit the risk of human casualty	COMPLY Section IV.B.

¹ All ICEYE calculations and analysis set forth herein utilized NASA’s Debris Assessment Software version 3.0.1 (“DAS”).

ORBITAL DEBRIS MITIGATION PLAN

I. Program Management and Mission Overview

Please see Sections I and II of the Narrative Statement.

II. Satellite and Launch Information

A. Launch Information

Please see Section II.C of the Narrative Statement

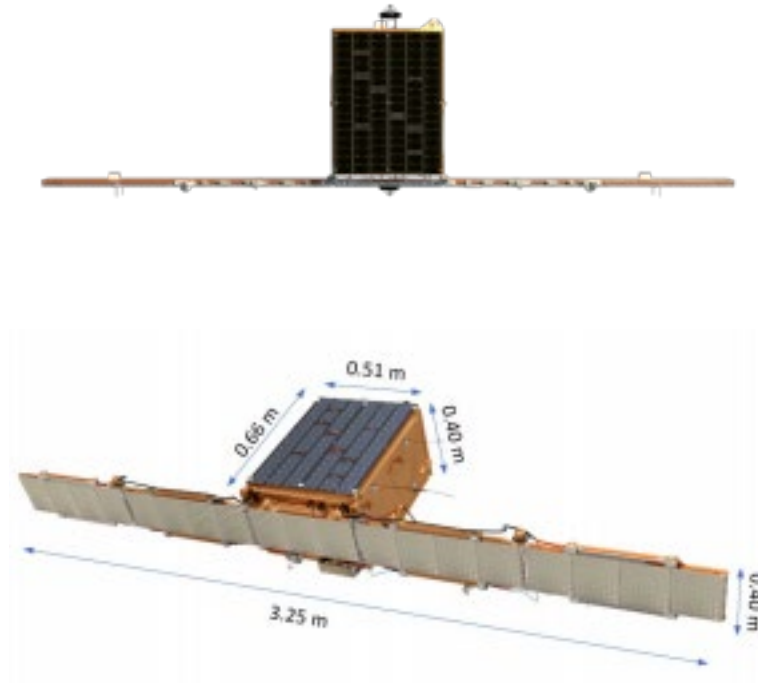
B. Satellite Information

Please see Section II.A of the Narrative Statement. Additional information is provided below.

The power system for each satellite consists of a set of solar panels producing a 300W peak, and a Li-Poly battery pack. The battery pack has a 1.4 KWh capacity and a 30V nominal voltage.

The Attitude Determination and Control System (“ADCS”) for each satellite consists of a GPS, Inertial Management Units, magnetometers, star trackers, torque rods, and reaction wheels, and is capable of achieving a pointing accuracy of less than +/- 0.1 degrees, and a GPS accuracy of better than 5 meters. During normal operations, the phased arrays will be Earth facing with look angles between 10 and 30 degrees relative to nadir. Phased arrays will be side looking with a 90-degree offset from the velocity vector.

Detailed illustrations of the satellite are provided in the figures below.



Each satellite is equipped with a low thrust propulsion system that uses a solid metal propellant and produces a max delta V of 400 meters per second. During normal propulsive operations, the solid metal is heated and becomes the ion source; ions are then accelerated by an electric field to generate thrust. The satellite propulsion system does not include any volatile chemical propellants or pressurants. Propulsion will be utilized for station-keeping and collision avoidance maneuvers. ICEYE has no plans to perform any proximity or docking operations.

As discussed in more detail below, in the unlikely event of a projected collision, ICEYE would have the ability to command the satellite to undertake an avoidance maneuver utilizing the propulsion system. During de-orbiting, the propulsion system will be powered off and rendered

inert. There are no fluids or high-pressure vessels aboard the satellite, and the satellites do not contain any pyrotechnic devices or radioactive materials, further reducing any risk.

III. Assessment of Potential Satellite Debris, Breakups, Explosions and Collisions

A. Satellite Debris

Under no circumstances will the satellites release any objects at any time after launch. This constraint ensures that all satellites comply with the requirements of 4.3-1 and 4.3-2.

B. Breakups and Potential Explosions

ICEYE has conducted an in-depth analysis of all potential causes of satellite breakup during deployment and mission operations. ICEYE has no plans for any intentional breakup of any of the satellites, leaving accidental explosions as the only remotely possible cause of satellite breakup. Accordingly, the satellites are compliant with the requirements of 4.4-3 and 4.4-4.

ICEYE has identified the battery as the only component that has an isolated chance of causing accidental breakup of the satellite. Li-Poly battery cell failures are typically due to (1) overcharging the battery cells or (2) a short circuit external to the cells. ICEYE has conducted thorough assessments of each of these battery failure scenarios and has put rigorous mitigation strategies in place in order to ensure that the probability of accidental explosion is well below the 0.0005 threshold.

ICEYE has implemented solutions in compliance with requirement 4.4-1 that mitigate the risk of accidental breakup or explosion due to overcharging of the battery cells. First, the satellites include battery charge management systems that ensure that the entire battery voltage is maintained at or below the maximum allowable voltage. The voltage charge limits can be set by

command while the satellite is on-orbit to allow for tailoring as necessary. Second, each battery cell is also equipped with a Current Interrupt Device (“CID”) that, when activated, results in a disconnect of current flow within the cell. The CID is activated when a maximum pressure level is reached, and acts as a second check to prevent overcharging.

ICEYE has also implemented solutions to mitigate the risk of accidental breakup or explosion due to a short circuit external to the battery cell. Each cell is equipped with a Positive Temperature Coefficient (“PTC”) Safety Device that protects the battery against short circuit conditions occurring outside the cell which can result in unsafe discharge currents and possible battery overheating. The PTC Safety Device is activated when a short is applied on a cell and the discharge current level increases, thereby causing the temperature of the PTC Safety Device to rise. When activated by these increased temperatures, the PTC Safety Device yields a resistance increase, effectuating a decrease in the discharge current. In this way, the PTC Safety Device mitigates the risk of unsafe discharge currents and potential battery overheating brought about by a short circuit.

C. End of Mission Passivation

During de-orbiting, ICEYE, through its Mission Operation Center (“MOC”), will command the satellites to deplete all onboard sources of energy and energy storage devices, in compliance with requirement 4.4-2. The satellite propulsion system utilizes solid metal propellants which require activation to become the ion source. During de-orbiting, the MOC command will cause the propulsion system to be powered off, rendering it inert. Similarly, the battery capacitor will be discharged and disconnected from the power source.

All ADCS will also be passivated during re-orbiting, pursuant to MOC command. Both the magnetometers and reaction wheels will be powered off and spun down at EOM, thereby removing all stored energy. Accordingly, the satellites satisfy requirements 4.4-2.

D. Potential for On-Orbit Collisions

ICEYE has utilized NASA's DAS to assess the probability of a collision with objects larger than 10 centimeters in diameter, and found the probability of collision to be 0.00002.² This collision probability is far less than the collision probability threshold of .001 as set forth in 4.5-1 and demonstrates that the satellites comply with these requirements. Even so, in the unlikely event of a projected collision, ICEYE is able to perform manual collision avoidance maneuvers, effectively eliminating any risk of on-orbit collisions.

Requirement 4.5-2 addresses the probability that a satellite will become disabled and unable to perform end-of-mission tasks, such as disposal maneuvers and passivation, due to collision with smaller objects. The satellites have no critical components that are required for post-mission disposal. As a result, the probability of a collision with objects of sufficient size to that could prevent post-mission disposal of the satellite is 0. The satellites are therefore compliant with requirement 4.5-2.

² ICEYE calculations utilizing NASA's DAS program are based on the underlying assumption that the satellite will have an operational altitude of 550 kilometers and an inclination angle of 97.7 degrees.

IV. Assessment of Post-Mission Disposal and Re Entry Hazards

A. Post-Mission Disposal Plan

Each satellite has an operational on-orbit lifetime of approximately 3 years. At the end of each satellite's operational life, the ICEYE MOC will command the satellite to discontinue all station-keeping and begin a decaying orbit. ICEYE utilized NASA's DAS program to calculate the total orbital lifetime of the satellites. The DAS outputs show that each satellite will naturally decay 2.683 years after the discontinuation of station-keeping, resulting in a total orbital lifetime of 5.683 years. The satellites will be disposed of using the atmospheric reentry method, depending solely on atmospheric drag. The NASA DAS outputs demonstrate that the satellites comply with applicable requirements 4.6-1 and 4.6-4.

B. Reentry Hazards

ICEYE utilized NASA's DAS program to calculate the probability of objects surviving reentry and found that no objects are expected to survive reentry. ICEYE utilized NASA's DAS program to calculate the probability of human casualty after during the period of time when the satellites have begun to de-orbit, after station-keeping activities have ceased. The DAS program outputs demonstrate that the probability of human casualty is 1:65,800, well below the required probability of 1:10,000. Accordingly, the satellites comply with requirement 4.7-1.

END