Exhibit 2
FCC Form 312
Orbital Debris Mitigation
HawkEye 360, Inc. Cluster 3

This report is presented in compliance with NASA-STD-8719.14, APPENDIX A.

Document Data is Not Restricted.
This document contains no proprietary, ITAR, or export controlled information.
DAS Software Version Used in Analysis: v3.1.0

Change Log

ODAR Version	Date	DAS Version Used
Cluster 3+	January 14, 2021	v3.1.0

INTRODUCTION

1. HawkEye 360, Inc. (“HE360”), a US company headquartered in Herndon, Virginia, plans to launch a commercial constellation of up to 80 microsatellites (the “Hawk satellites”). The satellites will fly in groups of 3-4 in proximate formation and work together to form a single observation platform (“cluster”). Nominal orbit lifetime is 3 years, and maximum time to de-orbit after end of mission is less than 22.6 years.

2. The satellites are designed to operate in circular orbits with a nominal altitude of 575 km and inclination between 5 and 97 degrees and are calculated to re-enter the Earth’s atmosphere and burn up completely in 22.6 years or less post mission. Due to its composition and small size, the entire satellite will burn up and be consumed due to atmospheric heating. There is 0% probability of human casualty as no large or small pieces of the spacecraft will survive to the Earth’s surface.

3. The NASA Debris Assessment Software confirmed that the HE360 satellites satisfy all of the Requirements for Limiting Orbital Debris including:

   a. Mission-Related Debris Passing Through LEO
   b. Mission-Related Debris Passing Near GEO
   c. Long-Term Risk from Planned Breakups
   d. Probability of Collision with Large Objects
   e. Probability of Damage from Small Objects
   f. Post-mission Disposal
   g. Casualty Risk from Reentry Debris

4. HE360 confirms that the satellites will not undergo any planned release of debris during their normal operations. In addition, all separation and deployment mechanisms, and any other potential source of debris will be retained by the spacecraft or launch vehicle. HE360 has also assessed the probability of the space stations becoming sources of debris by collision with small debris or meteoroids of less than one centimeter in diameter that could cause loss of control and prevent post-mission disposal. HE360 has taken steps to limit the effects of such collisions through shielding, the placement of components, and the use of redundant systems.

5. HE360 has assessed and limited the probability of accidental explosions during and after completion of mission operations through a failure mode verification analysis. As part of the satellite manufacturing process, HE360 has taken steps to ensure that debris generation will not result from the conversion of energy sources on board the satellites into energy that fragments the satellites. All sources of stored energy onboard the spacecraft will have been depleted or safely contained when no longer required for mission operations or post-mission disposal.

6. HE360 has assessed and limited the probability of the space stations becoming a source of debris by collisions with large debris or other operational spacecraft. HE360 does not intend to place any satellites in an orbit that is identical to or very similar to an orbit used by other space

stations, and, in any event, will work closely with the cluster launch providers to ensure that the satellites are deployed in such a way as to minimize the potential for collision with any other spacecraft. This specifically includes minimizing the potential for collision with manned spacecraft.

7. The HE360 satellites will perform station-keeping maneuvers to maintain separation between the Hawks in the cluster and sustain the desired geometry. Typical inter-satellite distances between the satellites will be approximately 125 km and maintenance maneuvers will be conducted relatively infrequently – approximately once a week. However, the cluster will not maintain the satellites' inclination angles, apogees, perigees, and right ascension of the ascending node to any specified degrees of accuracy beyond the goals of maintaining the cluster geometry.

8. HE360's disclosure of the above parameters, as well as the number of space stations, the number and inclination of orbital planes, and the orbital period to be used, can assist third parties in identifying potential problems. This information also lends itself to coordination between HE360 and other operators located in similar orbits.

9. The ODARs associated with clusters 1 and 2 appear in previously approved HE360 applications. *See* Letter from Tony Lin, Counsel to HE360, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-AMD-20200728-00090 (filed Sept. 23, 2020); Application of HE360, ELS File No. 0024-EX-CN-2017, at ODAR (filed Mar. 10, 2017).

1. Self Assessment of the ODAR using the format in Appendix A.2 of NASA-STD-8719.14 Revision A with Change 1

A self-assessment is provided below in accordance with the assessment format provided in Appendix A.2 of NASA-STD-8719.14.

Table 1: Orbital Debris Self-Assessment Report Evaluation for the HE360 Commercial Constellation

Req		Spacecraft			Comments
#	Description	Compliant or N/A	Not Compliant	Incomplete	
4.3-1a	Debris-LEO	x			No debris released in LEO.
4.3-1b	Debris-LEO	x			No debris released in LEO.
4.3-2	Debris-GEO	x			No debris released near GEO.
4.4-1	Explosions	x			
4.4-2	Passivation	x			
4.4-3	Long-term risk	x			No planned breakups.
4.4-4	Short-term risk	x			No planned breakups.
4.5-1	Debris from collisions-large obj	x			
4.5-2	Debris from collisions-small obj	x			
4.6-1a	Disposal by re-entry	x			
4.6-1b	Disposal by maneuvers	x			
4.6-1c	Disposal by retrieval	x			No planned retrieval.
4.6-2	Disposal near GEO	x			LEO orbits only.
4.6-3	Disposal btwn LEO,GEO	x			LEO orbits only.
4.6-4	Reliability of disposal	x			No planned disposal operations.
4.7-1	Risk of human casualty	x			

2. Assessment Report Format

ODAR Technical Sections Format Requirements:

As HawkEye 360, Inc. is a US company, this ODAR follows the format recommended in NASA-STD-8719.14 Revision A with Change 1, Appendix A.1 and includes the content indicated at a minimum in each section 2 through 8 below for the satellites in the commercial constellation. Sections 9 through 14 apply to the launch platform and are not covered here.

3. ODAR Section 1: Program Management and Mission Overview

Project Manager: HawkEye 360, Inc.

Foreign government or space agency participation: No foreign government or space agency participation is anticipated.

Schedule of upcoming mission milestones:
Launch: No earlier than June 2021

Mission Overview:
The satellites comprising each cluster will be launched and will rapidly be deployed from their restraint mechanisms and commissioned. The cluster will then begin payload operations that will continue for at least 3 years.

ODAR Summary: No debris released in normal operations; no credible scenario for breakups; the collision probability with other objects is compliant with NASA standards; and the estimated nominal post-mission de-orbit lifetime is less than 22.6 years, as calculated by DAS 3.1.0.

Launch vehicle and launch site: Launch vehicle and site are to be determined for each HE360 cluster. One or more clusters of 3-4 satellites will be launched together on one launch vehicle in order to obtain the desired cluster formation. There are several launch vehicle options that are capable of launching the HE360 clusters of 3-4 satellites into the desired orbits. HE360 will select launch vehicles for each cluster based on vehicle and site availability, as well as cost and reliability.

Proposed launch date: No earlier than June 2021.

Mission duration: Nominal orbit lifetime is 3 years. Nominal maximum post-mission de-orbit lifetime is less than 22.6 years.

Launch and deployment profile, including all parking, transfer, and operational orbits with apogee, perigee, and inclination: The HE360 satellites will deploy from the launch vehicle into a low Earth orbit at altitudes between 500km and 650km. The nominal deployment altitude is 575 km.

Nominal Insertion Case: Apogee: 575 km; Perigee: 575 km
Inclination: 5 degrees, 46.5 degrees, or 97 degrees
LTDN: 10:30

The HE360 satellites have propulsion for station-keeping and cluster formation establishment and collision avoidance. There is no parking or transfer orbit. They are directly inserted to their mission orbits by the launch vehicle.

Reason for selection of operational orbit(s): Orbits were chosen to maximize global coverage and ground station communication opportunities.

Identification of any interaction or potential physical interference with other operational spacecraft: The HE360 commercial constellation is not expected to interact or interfere with other operational spacecraft.

4. ODAR Section 2: Spacecraft Description

Physical description of the spacecraft:
The HE360 satellites are microsatellites, each with a launch mass of approximately 30 kg.

Basic physical outside dimensions are 300 mm x 300 mm x 450 mm.

The spacecraft is composed of an aluminum structure with deployable solar arrays.

Power storage is provided by six prismatic Lithium-Ion cells. The batteries will be recharged by solar cells mounted on both deployed arrays and on the body of the satellite.

Detailed illustration of the entire spacecraft in the mission operation configuration with clear overall dimensional markings: Figures 1-4 show the external layout of the HE360 spacecraft with dimensional markings.

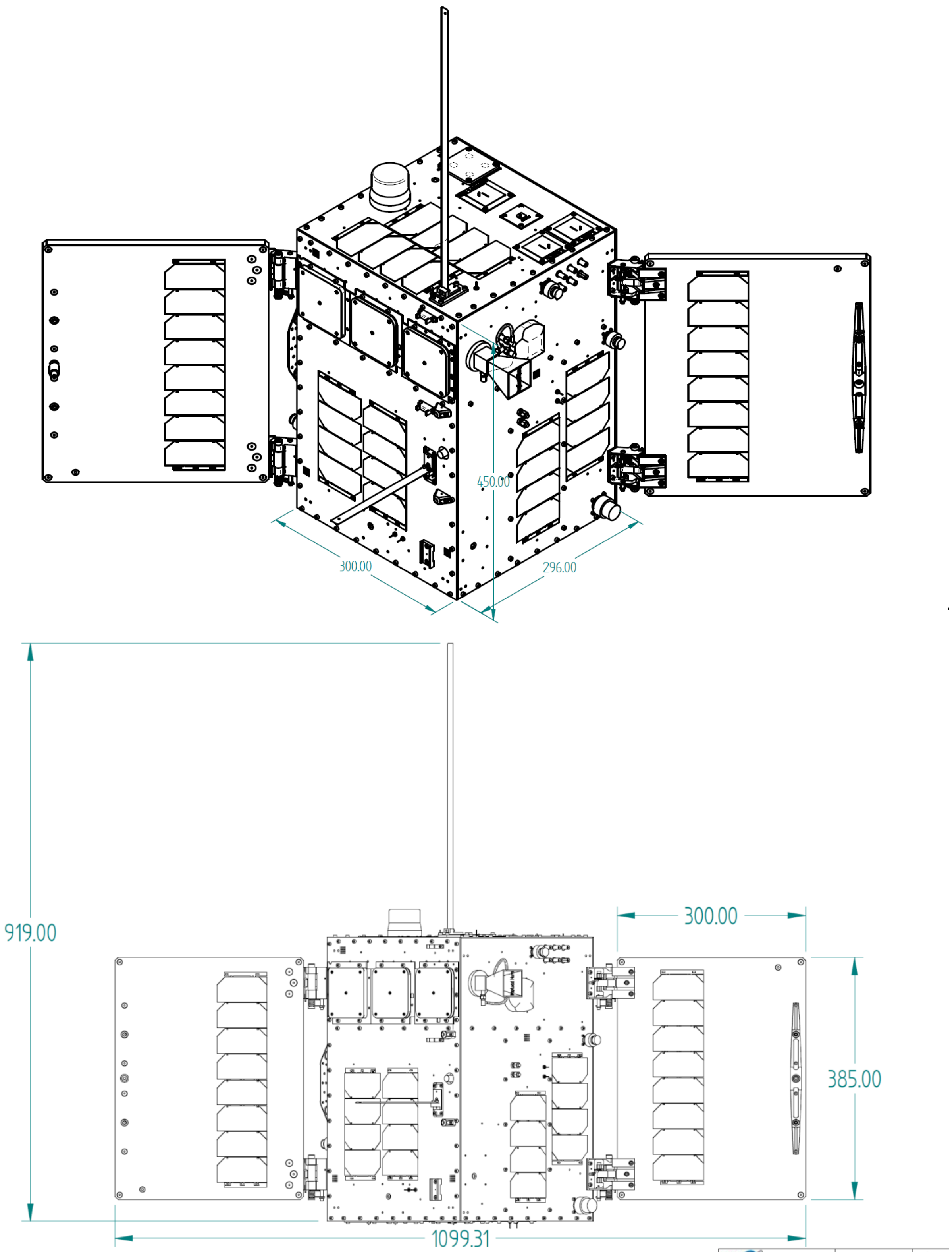

Figure 1: HE360 External Layout – Baseline Design

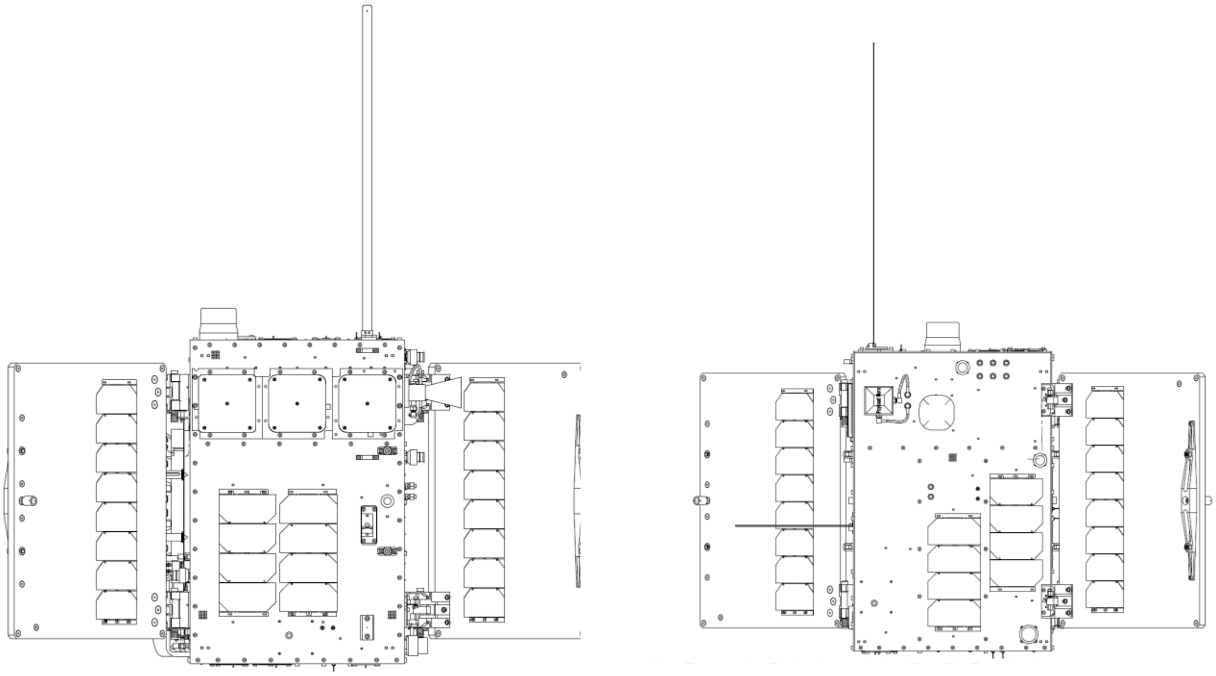

Figure 2: HE360 External Layout +X and +Y views – Baseline Design

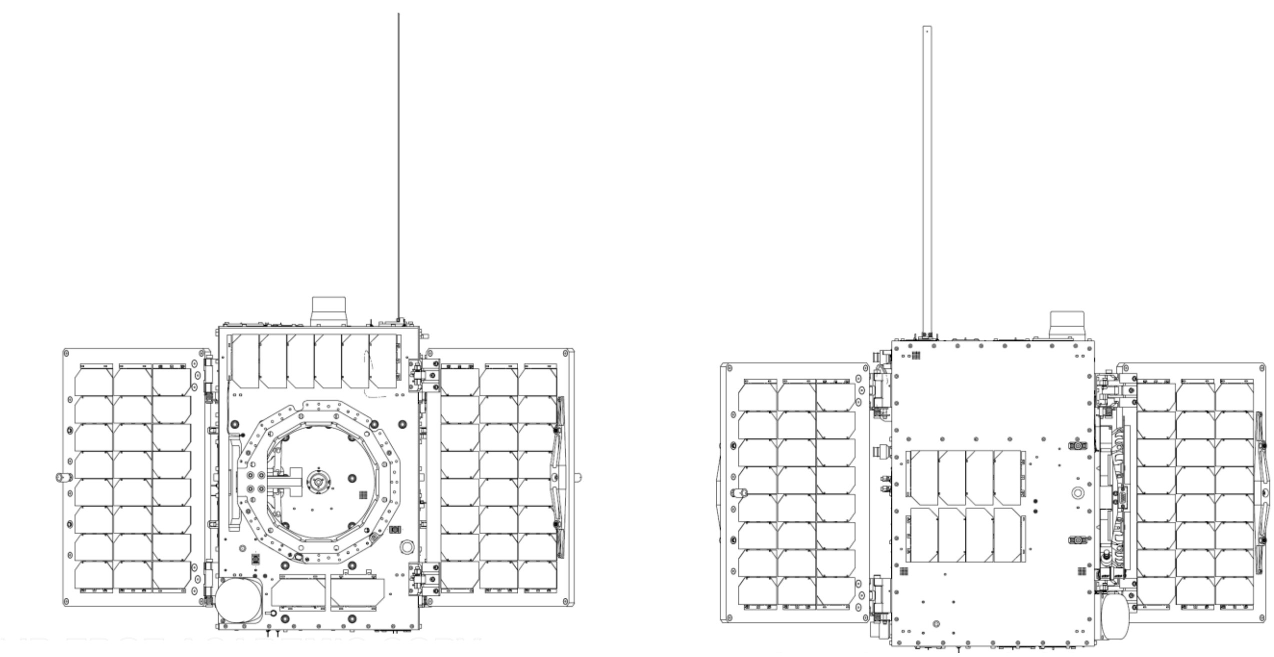

Figure 3: HE360 External Layout -Y and -X Views – Baseline Design

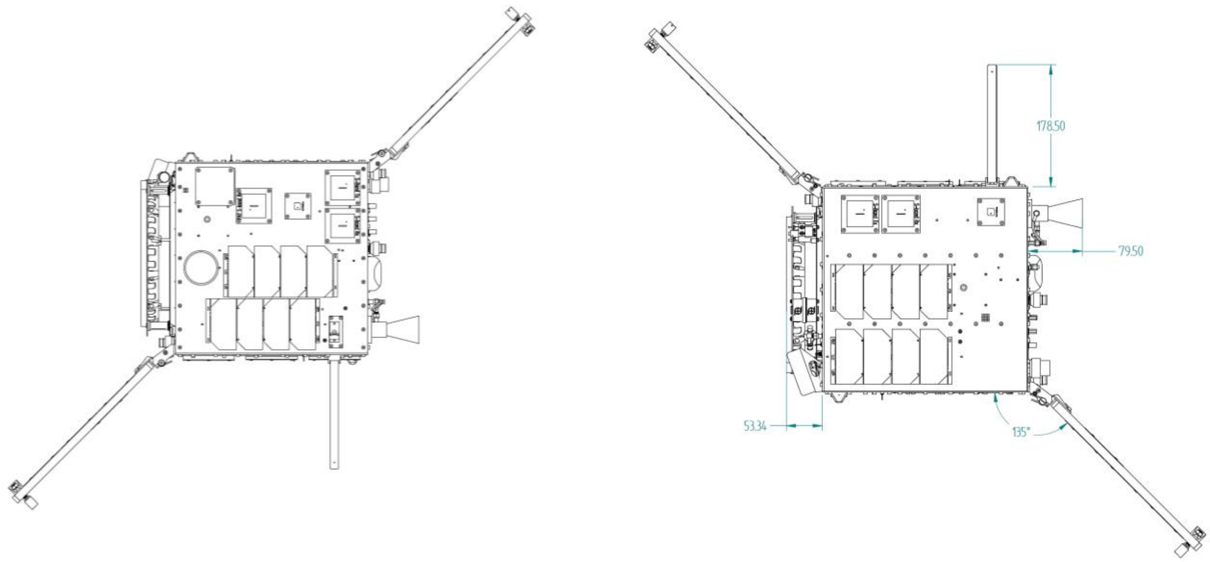

Figure 4: HE360 External Layout +Z and -Z Views – Baseline Design

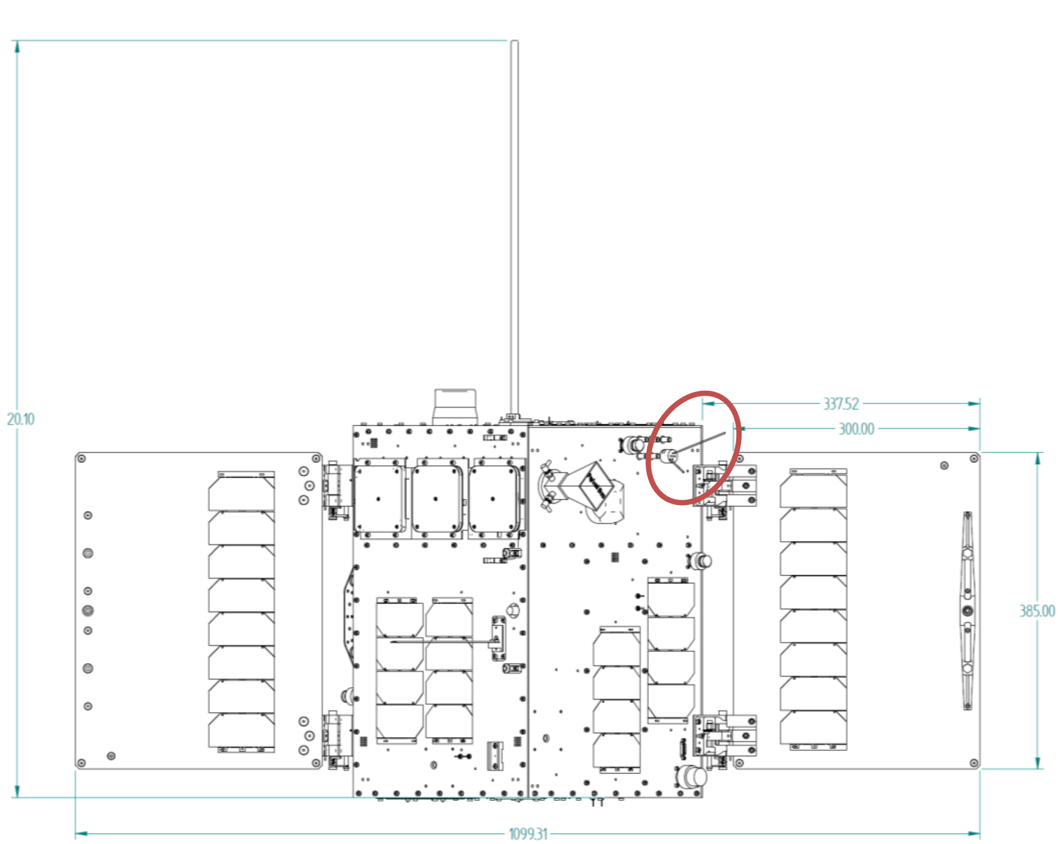

Figure 5: Added Rabbit Antenna on Cluster 3+

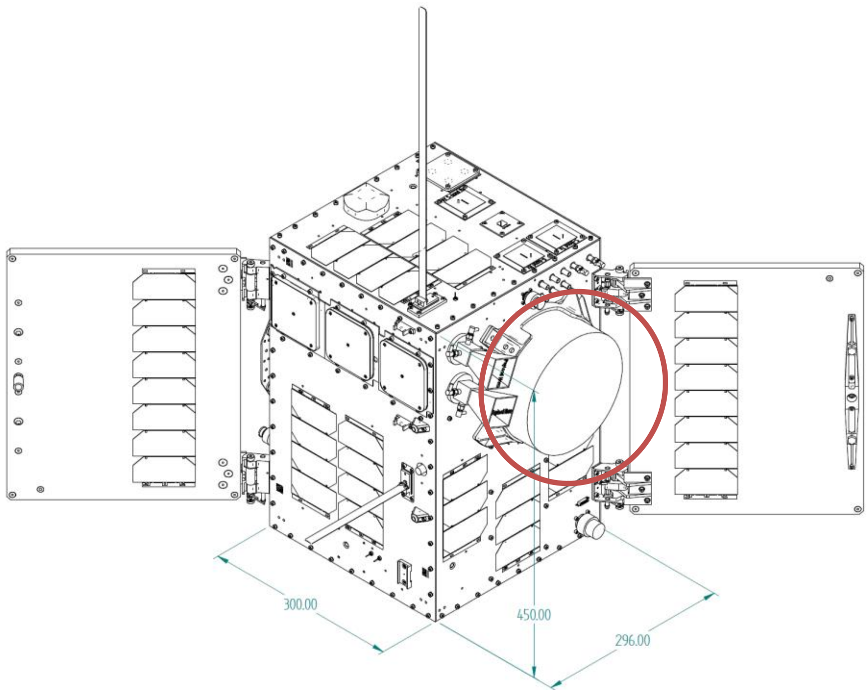

Figure 6: Added Cavity-Backed Spiral Antenna on Cluster 4+

Total satellite mass at launch, including all propellants and fluids: 31.446kg including launch adapter

Dry mass of satellites at launch, excluding propellant: 31.226 kg

Description of all propulsion systems (cold gas, mono-propellant, bi-propellant, electric, nuclear): Field-emission electric propulsion (FEEP) system.

Identification, including mass and pressure, of all fluids (liquids and gases) planned to be on board and a description of the fluid loading plan or strategies, excluding fluids in sealed heat pipes: None.

Fluids in Pressurized Batteries: None. The satellites use heritage, unpressurized, standard COTS Lithium-Ion battery cells from SAFT.

Description of attitude control system and indication of the normal attitude of the spacecraft with respect to the velocity vector:
Satellite attitude is controlled by magnetorquers and reaction wheels. The nominal attitude is an align/constrain sun-tracking mode where a particular fixed body-frame vector, chosen to maximize power generation, is aligned with the sun, and rotation about the sun vector is

constrained to point a second fixed body-frame axis to nadir. Other possible attitude modes include: nadir-pointing, target-tracking, tumble/de-tumble and low/high drag profiles.

Description of any range safety or other pyrotechnic devices: No pyrotechnic devices are used.

Description of the electrical generation and storage system: Standard COTS Lithium-Ion battery cells are charged before payload integration and provide electrical energy during the mission. The cells are recharged by triple-junction GaAs solar cells. A battery protection circuit protects against over and undercharge conditions.

Identification of any other sources of stored energy not noted above: None.

Identification of any radioactive materials on board: None.

5. ODAR Section 3: Assessment of Spacecraft Debris Released during Normal Operation

Identification of any object (>1 mm) expected to be released from the spacecraft any time after launch, including object dimensions, mass, and material: There are no intentional releases.

Rationale/necessity for release of each object: N/A.

Time of release of each object, relative to launch time: N/A.

Release velocity of each object with respect to spacecraft: N/A.

Expected orbital parameters (apogee, perigee, and inclination) of each object after release: N/A.

Calculated orbital lifetime of each object, including time spent in Low Earth Orbit (LEO): N/A.

Assessment of spacecraft compliance with Requirements 4.3-1 and 4.3-2 (per DAS v3.1.0):

Requirement 4.3-1: Mission Related Debris Passing Through LEO. a. Requirement 4.3-1a: All debris released during the deployment, operation, and disposal phases shall be limited to a maximum orbital lifetime of 25 years from date of release (Requirement 56398). b. Requirement 4.3-1b: The total object-time product shall be no larger than 100 object-years per mission (Requirement 56399). The object-time product is the sum of all debris of the total time spent below 2,000 km altitude during the orbital lifetime of each object. (See section 4.3.4.2 for methods to calculate the object-time product.)
Compliance Statement: COMPLIANT

There are no intentional releases.

Requirement 4.3-2: Mission Related Debris Passing Near GEO. For missions leaving debris in orbits with the potential of traversing GEO (GEO altitude +/- 200 km and +/- 15 degrees latitude), released debris with diameters of 5 cm or greater shall be left in orbits which will ensure that within 25 years after release the apogee will no longer exceed GEO - 200 km (Requirement 56400).
Compliance Statement: COMPLIANT No released debris.

6. ODAR Section 4: Assessment of Spacecraft Intentional Breakups and Potential for Explosions

Potential causes of spacecraft breakup during deployment and mission operations:
There is no credible scenario that would result in spacecraft breakup during normal deployment and operations.

Summary of failure modes and effects analyses of all credible failure modes which may lead to an accidental explosion: In-mission failure of a battery cell protection circuit could lead to a short circuit resulting in overheating and a very remote possibility of battery cell explosion. The battery safety systems discussed in the FMEA (see requirement 4.4-1 below) describe the combined faults that must occur for any of seven (7) independent, mutually exclusive failure modes to lead to explosion.

Detailed plan for any designed spacecraft breakup, including explosions and intentional collisions: There are no planned breakups.

List of components which shall be passivated at End of Mission (EOM) including method of passivation and amount which cannot be passivated: None. At end of mission, any remaining propellant will be used to decay orbit as much as possible, therefore depleting propellant. The six batteries will not be passivated at End of Mission due to the low risk and low impact of explosive rupturing, and the extremely short lifetime at mission conclusion. The maximum total chemical energy stored in the battery is approximately 543kJ.

Rationale for all items which are required to be passivated, but cannot be due to their design: The battery charge circuits include overcharge protection to limit the risk of battery failure. However, in the unlikely event that a battery cell does explosively rupture, the small size, mass, and potential energy, of these small batteries is such that while the spacecraft could be expected to vent gases, most debris from the battery rupture should be contained within the vessel due to the lack of penetration energy. This electrical power system has already been flight qualified on the GHGSat-D mission. Further, the battery technology baselined on HE360 spacecraft has flown on over a dozen UTIAS Space Flight Labs (SFL) spacecraft without failure.

Assessment of spacecraft compliance with Requirements 4.4-1 through 4.4-4:

Requirement 4.4-1: Limiting the risk to other space systems from accidental explosions during deployment and mission operations while in orbit about Earth or the Moon. For each spacecraft and launch vehicle orbital stage employed for a mission, the program or project shall demonstrate, via failure mode and effects analyses or equivalent analyses, that the integrated probability of explosion for all credible failure modes of each spacecraft and launch vehicle is less than 0.001 (excluding small particle impacts) (Requirement 56449).
Compliance Statement: COMPLIANT Expected probability: 0.000

Supporting Rationale and FMEA details:
Battery explosion:

Effect: All failure modes below might theoretically result in battery explosion with the possibility of orbital debris generation. However, in the unlikely event that a battery cell does explosively rupture, the small size, mass, and potential energy, of the selected COTS batteries is such that while the spacecraft could be expected to vent gases, most debris from the battery rupture should be contained within the vessel due to the lack of penetration energy. Furthermore, each battery has a pressure relief burst disc that prevents catastrophic battery enclosure failure.
Probability: Extremely Low. It is believed to be a much less than 0.1% probability that multiple independent (not common mode) faults must occur for each failure mode to cause the ultimate effect (explosion).

Failure mode 1: Internal short circuit.
Mitigation 1: Qualification and acceptance shock, vibration, thermal cycling, and vacuum tests followed by maximum system rate-limited charge and discharge to prove that no internal short circuit sensitivity exists.
Combined faults required for realized failure: Environmental testing AND functional charge/discharge tests must both be ineffective in discovery of the failure mode.

Failure Mode 2: Internal thermal rise due to high load discharge rate.
Mitigation 2: Cells were tested in lab for high load discharge rates in a variety of flight-like configurations to determine likelihood and impact of an out of control thermal rise in the cell. Cells were also tested in a hot environment to test the upper limit of the cells capability. No failures were seen.
Combined faults required for realized failure: Spacecraft thermal design must be incorrect AND external over-current detection and disconnect function must fail to enable this failure mode.

Failure Mode 3: Excessive discharge rate or short circuit due to external device failure or terminal contact with conductors not at battery voltage levels (due to abrasion or inadequate proximity separation).
Mitigation 3: This failure mode is negated by a) qualification-tested short circuit protection on each external circuit, b) design of battery packs and insulators such that no contact with nearby board traces is possible without being caused by some other mechanical failure, c) obviation of such other mechanical failures by proto-qualification and acceptance environmental tests (shock, vibration, thermal cycling, and thermal-vacuum tests).
Combined faults required for realized failure: An external load must fail/short-circuit AND external over-current detection and disconnect function failure must all occur to enable this failure mode.

Failure Mode 4: Inoperable vents.
Mitigation 4: Battery vents are not inhibited by the battery holder design or the spacecraft.
Combined effects required for realized failure: The final assembler fails to install proper venting.

Failure Mode 5: Crushing.
Mitigation 5: This mode is negated by spacecraft design. There are no moving parts in the proximity of the batteries.
Combined faults required for realized failure: A catastrophic failure must occur in an external system AND the failure must cause a collision sufficient to crush the batteries leading to an internal short circuit AND the satellite must be in a naturally sustained orbit at the time the crushing occurs.

Failure Mode 6: Low level current leakage or short-circuit through battery pack case or due to moisture-based degradation of insulators.
Mitigation 6: These modes are negated by a) battery holder/case design made of non-conductive plastic, and b) operation in vacuum such that no moisture can affect insulators.
Combined faults required for realized failure: Abrasion or piercing failure of circuit board coating or wire insulators AND dislocation of battery packs AND failure of battery terminal insulators AND failure to detect such failure modes in environmental tests must occur to result in this failure mode.

Failure Mode 7: Excess temperatures due to orbital environment and high discharge combined.
Mitigation 7: The spacecraft thermal design will negate this possibility. Thermal rise has been analyzed in combination with space environment temperatures showing that batteries do not exceed normal allowable operating temperatures which are well below temperatures of concern for explosions. This design has been verified through the GHGSat-D and other SFL missions.
Combined faults required for realized failure: Thermal analysis AND thermal design AND mission simulations in thermal-vacuum chamber testing AND over-

current monitoring and control must all fail for this failure mode to occur.

Requirement 4.4-2: Design for passivation after completion of mission operations while in orbit about Earth or the Moon. Design of all spacecraft and launch vehicle orbital stages shall include the ability to deplete all onboard sources of stored energy and disconnect all energy generation sources when they are no longer required for mission operations or post-mission disposal or control to a level which cannot cause an explosion or deflagration large enough to release orbital debris or break up the spacecraft (Requirement 56450).
Compliance statement: COMPLIANT Onboard sources of energy include onboard batteries for energy storage. The battery charge circuits include overcharge protection to limit the risk of battery failure. And as previously mentioned, the integrated burst disc should prevent any explosion altogether. However, in the unlikely event that a battery cell does explosively rupture, the small size, mass, and potential energy, of these small batteries is such that while the spacecraft could be expected to vent gases, most debris from the battery rupture should be contained within the vessel due to the lack of penetration energy. There is no expectation of producing orbital debris or spacecraft breakup from an unlikely battery explosion.

Requirement 4.4-3. Limiting the long-term risk to other space systems from planned breakups. Planned explosions or intentional collisions shall: a. Be conducted at an altitude such that for orbital debris fragments larger than 10 cm the object-time product does not exceed 100 object-years (Requirement 56453). For example, if the debris fragments greater than 10cm decay in the maximum allowed 1 year, a maximum of 100 such fragments can be generated by the breakup. b. Not generate debris larger than 1 mm that remains in Earth orbit longer than one year (Requirement 56454).
Compliance statement: Not applicable; there are no planned breakups.

Requirement 4.4-4: Limiting the short-term risk to other space systems from planned breakups. Immediately before a planned explosion or intentional collision, the probability of debris, orbital or ballistic, larger than 1 mm colliding with any operating spacecraft within 24 hours of the breakup shall be verified to not exceed 10^-6 (Requirement 56455).
Compliance statement: N/A; There are no planned breakups.

7. ODAR Section 5: Assessment of Spacecraft Potential for On-Orbit Collisions

Assessment of spacecraft compliance with Requirements 4.5-1 and 4.5-2 (per DAS v3.1.0,

and calculation methods provided in NASA-STD-8719.14 Revision A with Change 1, section 4.5.4):

Requirement 4.5-1: Limiting debris generated by collisions with large objects when operating in Earth orbit. For each spacecraft and launch vehicle orbital stage in or passing through LEO, the program or project shall demonstrate that, during the orbital lifetime of each spacecraft and orbital stage, the probability of accidental collision with space objects larger than 10 cm in diameter is less than 0.001 (Requirement 56506).
Compliance Statement: COMPLIANT **Large Object Impact and Debris Generation Probability:** Collision Probability: < 0.00003

Supporting Deployment and Collision Risk Analysis
The above collision probability is a product of NASA's DAS 3.1.0 software. To arrive at a probability for the entire 80 satellite constellation, the above given probability is the sum of the individual collision probabilities of each of the 80 satellites – assuming the desired target of 32 satellites in an orbit at 97 degrees inclination, 40 satellites in an orbit at 45 degrees inclination, and 8 satellites in an orbit at 5 degrees inclination; all at an altitude of 575 km.

Requirement 4.5-2: Limiting debris generated by collisions with small objects when operating in Earth or lunar orbit. For each spacecraft, the program or project shall demonstrate that, during the mission of the spacecraft, the probability of accidental collision with orbital debris and meteoroids sufficient to prevent compliance with the applicable post-mission disposal requirements is less than 0.01 (Requirement 56507).
Compliance Statement: COMPLIANT **DAS Analysis for Small Object Impact and Debris Generation Probability:** COMPLIANT. HE360 satellites do not have any subsystems required for a post-mission disposal maneuver and do not have any subsystems accomplishing passivation.

8. ODAR Section 6: Assessment of Spacecraft Post-mission Disposal Plans and Procedures

Description of spacecraft disposal option selected: The HE360 satellites will be disposed of by atmospheric re-entry.

Identification of all systems or components required to accomplish any post-mission disposal operation, including passivation and maneuvering: Enpulsion IFM06-002 propulsion system for spacecraft in orbits above 575 km in altitude.

Plan for any spacecraft maneuvers required to accomplish post-mission disposal:
At the end of mission, spacecraft above an altitude of 575 km will be maneuvered to set the altitude of perigee at 575 km or less and then will be allowed to decay naturally. The delta-v required for this maneuver, in the worst case of a starting 650 km circular orbit, is less than half the expected remaining delta-v at the end of the mission. For all planned altitudes (between 500 km and 650 km) and inclinations (between 5 deg and 97 deg), the spacecraft will de-orbit by atmospheric re-entry in less than 22.6 years post mission. It should be noted that this presents the worst-case scenario. Any remaining propellant at EOM will be used to further decrease the perigee and significantly reduce the post-operations lifetime.

Calculation of area-to-mass ratio after post-mission disposal, if the controlled reentry option is not selected:

Spacecraft Mass after disposal maneuver: 31.2266 kg
Cross-sectional Area:
Maximum Drag Area: 0.456 m^2 (drag area)
Average Drag Area: 0.273 m^2 (drag area)
Minimum Drag Area: 0.090 m^2 (drag area)

Average area to mass ratio: 0.008743 m^2/kg

Assessment of spacecraft compliance with Requirements 4.6-1 through 4.6-5 (per DAS v3.1.0 and NASA-STD-8719.14 Revision A with Change 1):

Table 2 below shows results from DAS 3.1.0 using the Orbit Lifetime/Dwell Time Science and Engineering Tool. These results use the following common inputs:
Start Year = 2021.0
RAAN = 0
Arg of Perigee = 0

Table 2: DAS v3.1.0 Results for Orbit Lifetime

Perigee Altitude (km)	Apogee Altitude (km)	Area-to-Mass Ratio	Inclination (deg)	Orbital Lifetime (yrs)	Object re-entered?
500	500	0.008743	97	5	Y
500	500	0.008743	46.5	5	Y
500	500	0.008743	5	5	Y
575	575	0.008743	97	15	Y
575	575	0.008743	46.5	15	Y
575	575	0.008743	5	15	Y
575	650	0.008743	97	25	Y
575	650	0.008743	46.5	25	Y
575	650	0.008743	5	25	Y

Requirement 4.6-1: Disposal for space structures passing through LEO: A spacecraft or orbital stage with a perigee altitude below 2000 km shall be disposed of by one of three methods: (Requirement 56557) a) Atmospheric reentry option: - Leave the space structure in an orbit in which natural forces will lead to atmospheric reentry within 25 years after the completion of mission but no more than 30 years after launch; or - Maneuver the space structure into a controlled de-orbit trajectory as soon as practical after completion of mission. b) Storage orbit option: Maneuver the space structure into an orbit with perigee altitude greater than 2000 km and apogee less than GEO - 500 km. c) Direct retrieval: Retrieve the space structure and remove it from orbit within 10 years after completion of mission
XY Compliance Statement: COMPLIANT **DAS Analysis:** The HE360 satellite disposal plan is COMPLIANT using the atmospheric re-entry option. Results from DAS 3.1.0 analysis show the following: For Worst-Case Orbit: 575* km x 650 km Post-Mission Lifetime: < 22.6 years * 575 km perigee is achieved using propulsion maneuver at end of mission

Requirement 4.6-2: Disposal for space structures near GEO. A spacecraft or orbital stage in an orbit near GEO shall be maneuvered at EOM to a disposal orbit above GEO with a predicted minimum perigee of GEO +200 km (35,986 km) or below GEO with an apogee of GEO – 200 km (35,586 km) for a period of at least 100 years after disposal (Requirement 56563).
Compliance Statement: Not applicable; no orbits planned near GEO.

Requirement 4.6-3: Disposal for space structures between LEO and GEO. a. A spacecraft or orbital stage shall be left in an orbit with a perigee greater than 2000 km above the Earth's surface and apogee less than 500 km below GEO (Requirement 56565). b. A spacecraft or orbital stage shall not use nearly circular disposal orbits near regions of high value operational space structures, such as between 19,200 km and 20,700 km (Requirement 56566).
Compliance Statement: Not applicable; no orbits planned between LEO and GEO.

Requirement 4.6-4: Reliability of Post-mission Disposal Operations in Earth orbit. NASA space programs and projects shall ensure that all post mission disposal operations to meet Requirements 4.6-1, 4.6-2, and/or 4.6-3 are designed for a probability of success as follows: (Requirement 56567)

a. Be no less than 0.90 at EOM. b. For controlled reentry, the probability of success at the time of reentry burn must be sufficiently high so as not to cause a violation of Requirement 4.7-1 pertaining to limiting the risk of human casualty.
Compliance Statement: N/A; No plans for post-mission disposal operations

9. ODAR Section 7: Assessment of Spacecraft Reentry Hazards

Table 3 below shows the major spacecraft components by size, mass, material, and shape. Original location of the components is shown in Figure 5 in Section 4.

Component	Qty	Size (m)	Mass (kg)	Material	Shape
X-Y Panels	4	0.3 x 0.45	1.68 ea	Aluminum	Flat Plate
Z Panels	3	0.3 x 0.3	1.49 ea	Aluminum	Flat Plate
Propulsion tank	1	0.100 x 0.100 x 0.080	0.680	Aluminum	Box
Payload 1	1	0.29 x 0.29 x 0.13	10	Aluminum	Box
Payload 2	1	0.16 x 0.94 x 0.10	5.9	Aluminum	Box
Solar panels	2	0.325 x 0.350	1 ea	Aluminum	Plate
Horn antenna	1	0.043 x 0.08	0.080	Aluminum	Cylinder
Spiral-backed antenna	1	0.173 x 0.085	1.283	6061-T6 Aluminum	Cylinder
GNSS antenna	1	0.089 x 0.025	0.255	6061-T6 Aluminum	Cylinder
Rabbit antenna	2	0.003 x 0.1016	0.0055	Steel AISI 316	Cylinder

Results from DAS 3.1.0 show that no components are expected to survive re-entry with an impacting kinetic energy in excess of 15 joules from any of the planned orbits.

Assessment of spacecraft compliance with Requirement 4.7-1:

Requirement 4.7-1a: Limit the risk of human casualty. The potential for human casualty is assumed for any object with an impacting kinetic energy in excess of 15 joules: a) For uncontrolled reentry, the risk of human casualty from surviving debris shall not exceed 0.0001 (1:10,000) (Requirement 56626).
Compliance Statement: COMPLIANT. Analysis performed using DAS v3.1.0 shows that no part of the satellite is expected to have an impacting kinetic energy in excess of 15 joules, and that the risk of human casualty is zero (0) for all planned orbits and inclinations.

Requirement 4.7-1b: For controlled reentry, the selected trajectory shall ensure that

no surviving debris impact with a kinetic energy greater than 15 joules is closer than 370 km from foreign landmasses, or is within 50 km from the continental U.S., territories of the U.S., and the permanent ice pack of Antarctica (Requirement 56627).
Compliance Statement: Not Applicable; no plans to use controlled re-entry.

Requirement 4.7-1c: For controlled reentries, the product of the probability of failure of the reentry burn (from Requirement 4.6-4.b) and the risk of human casualty assuming uncontrolled reentry shall not exceed 0.0001 (1:10,000) (Requirement 56628).
Compliance Statement: Not Applicable; no plans to use controlled re-entry.

10. ODAR Section 7A: Assessment of Spacecraft Hazardous Materials

HE360 spacecraft do not contain any hazardous materials.

11. ODAR Section 8: Assessment for Tether Missions

Requirement 4.8-1: Mitigate the collision hazards of space tethers in Earth or Lunar orbits. Intact and remnants of severed tether systems in Earth and lunar orbit shall meet the requirements limiting the generation of orbital debris from on-orbit collisions (Requirements 4.5-1 and 4.5-2) and the requirements governing post-mission disposal (Requirements 4.6-1 through 4.6-4) to the limits specified in those paragraphs (Requirement 56652).
Compliance Statement: Not Applicable; there are no tethers in the HE360 mission.

END of ODAR for HawkEye 360