

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)	
)	
HawkEye 360, Inc.)	File No. SAT-MOD-_____
)	
Modification Application for Authority to)	Call Sign: S3042
Launch and Operate a Non-Geostationary)	
Satellite Orbit System in the Earth-)	
Exploration Satellite Service)	

MODIFICATION APPLICATION

HawkEye 360, Inc. (“HE360”) hereby requests that the International Bureau modify the company’s partially granted space station license¹ (“Commercial Constellation”), as follows:

- Add an additional antenna (rabbit) capable of sensing radio frequency (“RF”) spectrum in the 840-960 MHz and 1280-1410 MHz bands, starting with cluster 3 or later.² HE360 will inform the FCC in writing once the satellites with the new rabbit antenna are deployed;
- Use a new propulsion system, *Enpulsion IFM06-002*, starting with cluster 3 or later.³ HE360 will inform the FCC in writing once the satellites with the new propulsion system are deployed; and

¹ See Stamp Grant, HE360, IBFS File No. SAT-LOA-20190102-00001 (granted in part Dec. 10, 2019) (“Initial License”); Stamp Grant, HE360, IBFS File No. SAT-AMD-20200728-00090 (granted Dec. 14, 2020 and reissued Dec. 17, 2020) (“Amended License”).

² HE360 expects to add this antenna on its satellites beginning with cluster 3. However, due to potential schedule delays, the company may not be able to deploy the antenna on its satellites until later clusters and, accordingly, requests the flexibility to do so.

³ HE360 expects to add this new propulsion system on its satellites beginning with cluster 3. However, due to potential schedule delays, the company may not be able to deploy the system on its satellites until later clusters and, accordingly, requests the flexibility to do so.

- Commence deployment of the previously authorized spiral-backed antenna (enabling sensing from 600 MHz to 10 GHz), starting with cluster 4 *or later*.⁴ HE360 will inform the FCC in writing once the satellites with the spiral-backed antenna are deployed.

For the FCC’s convenience, the attached Exhibit summarizes the authorized and requested passive RF antennas and sensed spectrum ranges for HE360’s Commercial Constellation.

The new rabbit antenna and propulsion system do not materially affect HE360’s Orbital Debris Assessment Report (“ODAR”), and the satellite remains compliant with the Commission’s orbital debris mitigation requirements.⁵ At the target 575 km deployment altitude and 97 degree inclination,⁶ the satellites would be expected to de-orbit in less than 25 years after the nominal 3-year mission lifetime and have no risk of casualty (*i.e.*, no pieces of the spacecraft will survive re-entry).⁷

The new propulsion system will increase the satellites’ delta-v capability almost threefold. Such increased delta-v capacity adds margin for potential collision avoidance and end-of-life disposal maneuvers. Further, because the propulsion system is primarily composed of aluminum, it will completely demise upon the satellites’ atmospheric re-entry.

⁴ Pursuant to the Amended License, the FCC granted HE360 authority to replace the molded button antenna (currently sensing from 1.4 GHz to 7.0 GHz) with a spiral-backed antenna (enabling sensing from 600 MHz to 10 GHz), *starting with cluster 4*. HE360 expects to replace the molded button antenna on its satellites beginning with cluster 4. However, due to potential schedule delays, the company may not be able to commence replacement of the antenna on its satellites until later clusters and, accordingly, requests the flexibility to do so.

⁵ Specifically, the modifications will not materially change the spacecraft’s overall mass, external volume, or shape and result in no material changes to its area-to-mass ratio.

⁶ HE360 satellites have authority to operate up to an altitude of 650 km. *See, e.g.*, Amended License.

⁷ *See* Exhibit 2, ODAR at 4, 18.

Grant of the application serves the public interest. The requested authorization will expand the physical capabilities of the HE360 satellites and the RF sensing capabilities of the system, enhancing the range of services HE360 is able to provide its customers. Moreover, there are no RF interference⁸ or orbital debris mitigation concerns.

For these reasons, HE360 requests that the FCC grant the application to allow HE360 to make the proposed changes before the company's next launch in June 2021.

Respectfully submitted,

/s/ Michael Mineiro

Tony Lin
George John
HOGAN LOVELLS US LLP
555 13th Street, NW
Washington, DC 20004
+1 202-637-5795

Counsel for HawkEye 360, Inc.

Michael Mineiro
VP Legal, Regulatory, and
Government Affairs
HAWKEYE 360, INC.
196 Van Buren Street, Suite 450
Herndon, VA 20171
+1 571-203-0360

Dated: January 14, 2021

⁸ The FCC has consistently concluded that using receive-only signals cannot cause harmful interference because the signals will be present regardless of the reception by the satellite license applicant. *See, e.g., Iridium Constellation LLC*, Order and Authorization, 31 FCC Rcd 8675 ¶ 21 (2016); Stamp Grant, Spire Global, Inc., IBFS File No. SAT-AMD-20161114-00107 (granted in part Apr. 7, 2017) (authorizing satellite reception of AIS 1, AIS 2, AIS 3, AIS 4, ASM 1, ASM 2, and ADS-B signals).

EXHIBIT

Table of FCC Authorized and Requested Passive RF Antennas and Sensed Spectrum Ranges

Status	Antenna Types	Frequency Ranges	Intended Use
Authorized	VHF Dipole	100-182 MHz	AIS processing and signal geolocation
Authorized	UHF Dipole	382-422 MHz	EPIRB processing and geolocation
Authorized	ADS-B Patch	1090 MHz (on frequency only)	L-band signal geolocation
Authorized	GNSS Antenna	1575.42 MHz (L1) 1227.60 MHz (L2) 1176.45 MHz (L5)	Geolocation of L-band signals from terrestrial sources
Authorized	L-band Patch	1.6-1.7 GHz	L-band signal geolocation
Authorized	S-band Patch	2.9-3.1 GHz	S-band signal geolocation
Authorized	Molded Button Antenna or Spiral-Backed Antenna (cluster 4+) ¹	1.4-7.0 GHz or 600 MHz to 10 GHz	Broadband spectrum scanning and monitoring; signal occupation and ID
Authorized	Horn Antenna	6.0-18.0 GHz	Marine X-Band RADAR and Ku-band SATCOM geolocation and signal metadata
Requested	Rabbit (cluster 3+) ²	840-960 MHz and 1280-1410 MHz	Industrial, scientific, and medical, and L-band signal geolocation

¹ HE360 expects to replace the molded button antenna on its satellites beginning with cluster 4. However, due to potential schedule delays, the company may not be able to commence replacement of the antenna on its satellites until later clusters.

² HE360 expects to add this antenna on its satellites beginning with cluster 3. However, due to potential schedule delays, the company may not be able to deploy the antenna on its satellites until later clusters.

ATTACHMENT
Technical Certification

I, Nicole Hilliard, hereby certify, under penalty of perjury, that I am the technically qualified person responsible for the preparation of the engineering information contained in the technical portions of the foregoing application and the related attachments, that I am familiar with Part 25 of the Commission's rules, and that the technical information is complete and accurate to the best of my knowledge and belief.

/s/ Nicole Hilliard

Nicole Hilliard
Space Systems Program Manager
HAWKEYE 360, INC.
196 Van Buren Street, Suite 450
Herndon, VA 20171
+1 571-203-0360

Dated: January 14, 2021