

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

In the Matter of	)	
	)	
HawkEye 360, Inc.	)	File No. SAT-AMD-_____
	)	
Amendment to Application to Modify License	)	Call Sign: S3042
	)	
	)	
	)	

AMENDMENT APPLICATION

HawkEye 360, Inc. (“HE360”) hereby amends its pending modification application.¹ In the modification application, HE360 requested, *inter alia*, authority to add a new, higher-power, wider-bandwidth X-band downlink with a new antenna (“Payload downlink 2”). In this amendment, HE360 revises the technical parameters of its proposed new X-band transmitter by removing the X-band downlink channels centered around 8330 MHz and 8345 MHz and adding an X-band channel centered around 8210 MHz using right-hand circular polarization. The proposed change will ensure that the HE360 satellites better protect adjacent band Deep Space Network operations. HE360 is also updating the list of ground stations that will be communicating with the HE360 constellation and will reach out to affected federal operators to coordinate those stations.² HE360 is not requesting any other changes to its license or pending application beyond those identified above.

¹ See Modification Application, HE360, IBFS File No. SAT-MOD-20220906-00099 (filed Sep. 6, 2022) (“Modification Application”).

² The new ground stations are as follows: Peterborough, Australia; Absheron, Azerbaijan; Plana, Bulgaria; Blonduos, Iceland; Kandy, Sri Lanka; Azores, Portugal; Shetland, United Kingdom.

HE360 is including a revised Schedule S and attaching as an exhibit a revised Table 2-1, in both cases reflecting the changes to Payload downlink 2. HE360 is also attaching as an exhibit a revised Table 3-1 and Table 3-2 reflecting the revised list of ground station locations.

Respectfully submitted,

/s/ Michael Mineiro

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Dated: October 14, 2022

Attachment 2

Table 2-1: FCC Authorized and Requested Communication Links

Frequency Band (MHz)	Use	Transmit Center Frequency (MHz) per cluster¹
X-band: 8025-8400	Payload downlink 1	Channel #1 - 8075 MHz Channel #2 - 8165 MHz Channel #3 - 8255 MHz
X-band: 8025-8400	Payload downlink 2	For satellites twenty-two (22) through sixty (60) and any replacement satellites for any of the twenty clusters: Channel #1 - 8090 MHz Channel #2 - 8210 MHz (LHCP) Channel #3 - 8210 MHz (RHCP)
X-Band: 8025-8400	TT&C downlink	Channel #1 - 8291 MHz Channel #2 - 8297 MHz Channel #3 - 8303 MHz
S-Band: 2200-2290	Emergency Backup TT&C downlink	For satellites one (1) through twenty-one (21): ² Channel #1 - 2242 MHz Channel #2 - 2254 MHz Channel #3 - 2260 MHz
S-Band: 2025-2110	Primary payload uplink	For satellites one (1) through nine (9): Channel #1 - 2068.2 MHz Channel #2 - 2062.7 MHz Channel #3 - 2077.4 MHz For remaining satellites ten (10) through sixty (60) and any replacement satellites for any of the twenty clusters: ³

¹ Each satellite cluster that HE360 launches will be in groups of three satellites. The frequencies provided in this chart identify the center-band frequencies to be used by one satellite in each cluster. The frequency parameters for the three Pathfinder satellites, which were separately authorized (ELS File No. 0024-EX-CN-2017, as modified 0055-EX-CM-2019), are not included in this chart. *See* Stamp Grant, HE360, IBFS File No. SAT-MOD-20210114-00010, at ¶ 3 (granted May 25, 2021).

² These frequencies will not be used beyond satellite 21.

³ For the avoidance of doubt, with respect to the S-band payload uplink frequencies, replacement satellites for any cluster, including the first three clusters, will operate in the frequency channels listed below.

		Channel #1 - 2046.5 MHz Channel #2 - 2049.3 MHz Channel #3 - 2075.0 MHz
S-Band: 2025-2110	TT&C uplink	For satellites one (1) through fifteen (15) and any replacement satellites for these five clusters: Channel #1 - 2063.965 MHz Channel #2 - 2064.965 MHz Channel #3 - 2065.965 MHz For remaining satellites sixteen (16) through sixty (60) and any replacement satellites for these fifteen clusters: Channel #1 - 2052.1 MHz Channel #2 - 2053.0 MHz Channel #3 - 2053.7 MHz
S-Band: 2025-2110	High Speed TT&C uplink	For satellites one (1) through fifteen (15) and any replacement satellites for these five clusters: Sat#1 - 2063.965 MHz Sat#2 - 2064.965 MHz Sat#3 - 2065.965 MHz For satellites sixteen (16) through sixty (60) and any replacement satellites for these fifteen clusters: Channel #1 - 2052.1 MHz Channel #2 - 2053.0 MHz Channel #3 - 2053.7 MHz
L-band: 1626.5-1660.5	ISL Transmit	For satellites twenty-two (22) through sixty (60) and replacements for any of the twenty clusters: 1626.5 - 1645.5 MHz 1646.5 - 1660.5 MHz
L-band: 1525-1559	ISL Receive	For satellites twenty-two (22) through sixty (60) and replacements for any of the twenty clusters: 1525 - 1544 MHz 1545 - 1559 MHz

Attachment 3

Table 3-1: Ground Stations

Ground Station Location	Coordinates		Communication Type		
	Latitude (°N)	Longitude (°E)	X-band Downlink	S-band Downlink	S-band Uplink
Svalbard, Norway	78.231	15.411	Yes	Yes	Yes
Troll, Antarctica	-72.002	2.525	Yes	Yes	Yes
Tromso, Norway	69.663	18.950	Yes	Yes	Yes
Hartebeesthoek, South Africa	-25.886	27.705	Yes	Yes	Yes
Awarua, New Zealand	-46.529	168.380	Yes	Yes	Yes
Punta Arenas, Chile	-52.936	-70.870	Yes	Yes	Yes
Long Beach, CA, USA	33.824	-118.146	Yes	No	No
Maui, HI, USA	20.810	-156.450	Yes	Yes	Yes
Athens, Greece	37.845	22.623	Yes	Yes	Yes
Fairbanks, AK, USA	64.890	-147.529	Yes	No	Yes
Inuvik, Canada	68.325	-133.613	Yes	Yes	Yes
Jeju, South Korea	33.541	126.816	Yes	Yes	Yes
Mauritius	-20.501	57.450	Yes	Yes	Yes
Mingenew, Australia	-29.010	115.342	Yes	Yes	Yes
Puertollano, Spain	38.672	-4.162	Yes	Yes	Yes
Peterborough, Australia	-32.962	138.850	Yes	Yes	Yes
Absheron, Azerbaijan	40.466	49.486	Yes	Yes	Yes
Plana, Bulgaria	42.483	23.445	Yes	Yes	Yes
Blonduos, Iceland	65.647	-20.246	Yes	Yes	Yes
Kandy, Sri Lanka	7.274	80.725	Yes	Yes	Yes
Azores, Portugal	36.998	-25.137	Yes	Yes	Yes
Shetland, United Kingdom	60.748	-0.858	Yes	Yes	Yes

Table 3-2: Orbital Characteristics & Connectivity to Earth Stations

	Polar, SSO	Mid-Inclination	Near-Equatorial
Number of Clusters	8	10	2
Number of Satellites in Each Cluster	3	3	3
Number of Satellites in HE360 Constellation	24	30	6
Total Number of Orbital Planes	4	5	1
Celestial Reference Body	Earth	Earth	Earth
Inclination Angle (degrees) for Each Satellite	97-98	35-50	0-28.5
Orbital Period per Cluster (seconds)	5770 nominal	5770 nominal	5770 nominal
Apogee (km)	475-615	475-615	475-615
Perigee (km)	475-615	475-615	475-615
Eccentricity	Nearly 0	Nearly 0	Nearly 0
Ground Station Connectivity			
Svalbard, Norway	Yes	No	No
Troll, Antarctica	Yes	No	No
Tromso, Norway	Yes	No	No
Hartebeesthoek, South Africa	Yes	Yes	Yes*
Awarua, New Zealand	Yes	Yes	No
Punta Arenas, Chile	Yes	Yes	No
Long Beach, CA, USA	Yes	Yes	Yes*
Maui, HI, USA	Yes	Yes	Yes*
Athens, Greece	Yes	Yes	Yes*
Fairbanks, AK, USA	Yes	Yes*	No
Inuvik, Canada	Yes	Yes*	No
Jeju, South Korea	Yes	Yes	Yes*
Mauritius	Yes	Yes	Yes*
Mingenew, Australia	Yes	Yes	Yes*
Puertollano, Spain	Yes	Yes	Yes*
Peterborough, Australia	Yes	Yes	Yes*
Absheron, Azerbaijan	Yes	Yes	Yes*
Plana, Bulgaria	Yes	Yes	Yes*
Blonduos, Iceland	Yes	Yes*	No
Kandy, Sri Lanka	Yes	Yes	Yes*
Azores, Portugal	Yes	Yes	Yes*
Shetland, United Kingdom	Yes	Yes*	No

* The opportunity exists for some contact depending upon exact inclination of orbit.

Attachment 2

Technical Certification

I, Ryan Fielder, 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.

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Dated: October 14, 2022