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RE: Amendment
0024-EX-CN-2017

HawkEye 360. Inc. (HE360) hereby amends the above-referenced application, which was filed on January 10, 2017, as follows:

1. **U.S. ground station location and frequencies**

The U.S. ground station will be relocated to 196 Van Buren St, Suite 450, Herndon, VA 20170. The latitude and longitude of this new location is: 38° 57' 14.51" N -77° 23' 14.95" W. This ground station will only operate in the 432-438 MHz (uplink) and 2200-2290 MHz (downlink) bands, *i.e.*, the secondary links. HE360 is removing the initial request to operate in the 2025-2110 MHz (uplink) and 8025–8400 MHz (downlink) bands, *i.e*. the primary links, at the U.S. ground station.

HE360 will use leased KSAT facilities in Svalbard, Norway for transmissions in the primary links to/from the proposed satellite constellation. HE360 may also in the future lease facilities for a ground station in Canada. HE360 will coordinate any such potential future operations with affected operators.

2. **Satellite Payload**

The satellite payload is comprised of an RF receiver, commercial-off-the-shelf antennas (see Table 1 below) and RF "System on a Chip" technology combined with a reprogrammable field programmable gate array (FPGA). The payload has a receive-only function and cannot transmit. The combination of antenna frequency ranges and RF receiver chip tuning range is displayed in the graph below. The payload will collect and record information corresponding to the observable, environmental characteristics associated with RF signals within the frequency ranges of the antennas aboard the spacecraft.

HE360 will downlink metadata for collected signals, containing time of arrival, frequency of arrival, bandwidth, power, modulation type, and other similar information. HE360 will use this metadata to geolocate the signal transmission. HE360 has the technical capability to downlink collected raw data, but such use will be limited in part due to bandwidth constraints.

Table 1 – Receive Signal Tuning Frequency Ranges

Antenna Types	Frequency Ranges	Gain
VHF Dipole	100 – 182 MHz	1.5 dBi
UHF Dipole	382 – 422 MHz	1.0 dBi
ADS-B Patch	1090 MHz (on frequency only)	5.8 dBi

L-band Patch	1.6 – 1.7 GHz	6.3 dBi
S-band Patch	2.9 – 3.1 GHz	7.0 dBi
Molded Button Antenna	1.4 – 7.0 GHz	5.0 dBi
Horn Antenna	6.0 – 15.0 GHz	10.1 dBi

HE360 will fully demodulate only those signals identified in Table 2 below, which are intended for general reception.

Table 2 – Demodulated Signals

Signals	Frequency Bands	Use
Automatic Identification System (AIS) Channels 1,2,3,4	AIS 1 (161.9625MHz – 161.9875 MHz) AIS 2 (162.0125MHz – 162.0375 MHz) AIS 3 (156.7625MHz – 156.7875 MHz) AIS 4 (156.8125MHz – 156.8375 MHz)	Reception
Emergency Position-Indicating Radiobeacon (EPIRB)	406 MHz	Reception
Automatic Dependent Surveillance – Broadcast (ADS-B)	1090 MHz	Reception

3. Satellite cross-link transmissions

Each of the experimental spacecraft will contain a low-power S-band radio to conduct experimental satellite cross-link transmissions. The cross-link radio is included to facilitate demonstrations for future consideration, and the cross-link provides no operational capability.

The cross-link radios will operate at a center frequency of 2410 MHz, have a power level of 100 mW (22.1 dBm), and transmit a 10 kHz signal. HE360 does not intend to operate cross-link tests or demonstrations more frequently than once a month and for periods of no more than 10 mins.

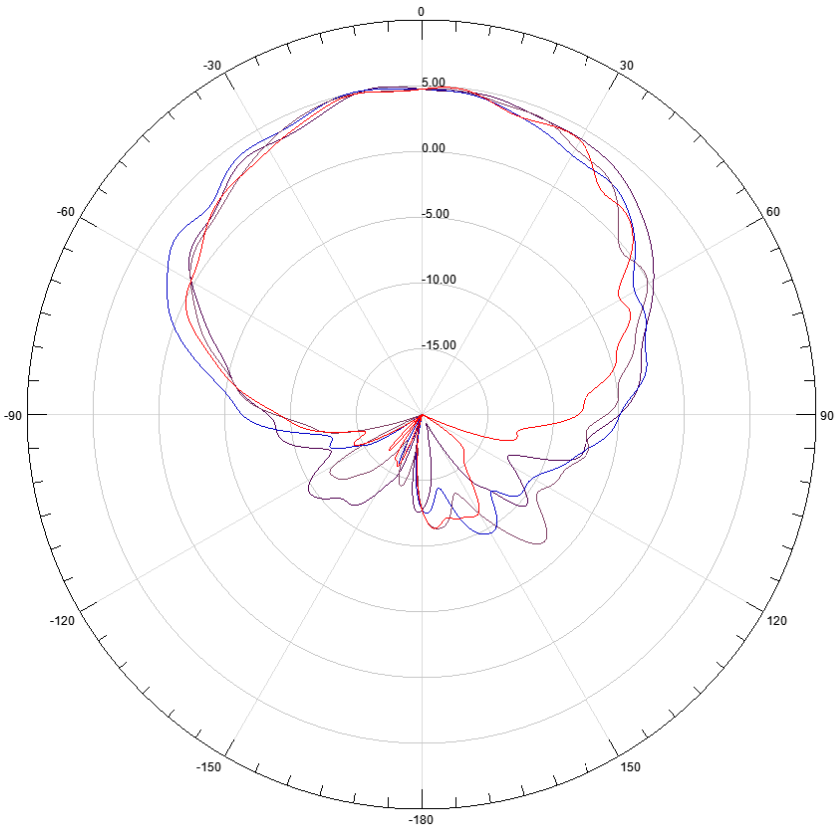
Experimental equipment: SFL low rate Space to space cross link radio

ERP Mean Peak: 26 dBm

Emission designator: 10k1D

Table 3 below provides the technical parameters for the cross-link transmitter.

ISL Radiation Pattern



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Curve Info

dB(RealizedGainRHCP)
ISL : LastAdaptive
Freq='2.41GHz' Phi='0deg'

dB(RealizedGainRHCP)
ISL : LastAdaptive
Freq='2.41GHz' Phi='45deg'

dB(RealizedGainRHCP)
ISL : LastAdaptive
Freq='2.41GHz' Phi='90deg'

dB(RealizedGainRHCP)
ISL : LastAdaptive
Freq='2.41GHz' Phi='135deg'

Table 3 – Cross-link Technical Parameters

Transmit Frequency: 2410		
Satellite Name: Hawk-1		
Data Field	**Data Answer**	**Description/Comments**
Polarization (XAP)	XAP = R	POLARIZATIONS INCLUDE : H ▪ HORIZONTAL, V ▪ VERTICAL, S ▪ HORIZONTAL AND VERTICAL, L ▪ LEFT HAND CIRCULAR, R ▪ RIGHT HAND CIRCULAR, T ▪ RIGHT AND LEFT HAND CIRCULAR, J ▪ LINEAR POLARIZATION
Orientation (XAZ)	XAZ =	NB▪ NARROWBEAM EC ▪ EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN 7 dBi BEAMWIDTH 60 deg XAD = 07G060B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 - 98, APOGEE IN KILOMETERS 575, PERIGEE IN KILOMETERS 575, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6028 THE NUMBER OF SATELLITES IN THE SYSTEM 3, ORB = *ORB,97.5IN00575AP00575PE1.6028H03NRT01 *ORB,97.5IN00575AP00575PE1.6028H03NRR01 *ORB,97.5IN00575AP00575PE1.6028H03NRR02	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.58H01NRT01, AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.46H01NRR01