

REQUEST EXPERIMENTAL AUTHORITY

BlackSky Global, LLC (“BlackSky”) herein requests an experimental license for its prototype model, “Global-1”. As set forth below, Global-1 will be launched on a PSLV rocket.

Existing Experimental Program and Proposed Additional Experimental Satellite

The proposed experimentation is a continuation of the experimental work that BlackSky first commenced with its Pathfinder satellite program. The purpose of that experimental program was to test, develop, and demonstrate the efficacy and design of a newly configured microsatellite, including associated software applications, relative to their ability to provide high-resolution remote sensing in the Earth Exploration Satellite Service (“EESS”). To further that end, the Commission authorized BlackSky to launch and operate two prototype satellites, “Pathfinder-1” and “Pathfinder-2.”¹

The launch of both satellites was postponed because of delays in the Falcon-9 launch rocket mission. Because of this delay, Pathfinder-1 was moved to a PSLV rocket and was successfully launched on September 25, 2016. Pathfinder-1 then went through an extensive test program that ended when transmissions from Pathfinder were terminated in October of this year. While the testing was largely successful, it also revealed shortcomings that BlackSky hopes to remedy with an updated prototype model, Global-1, rather than proceed with Pathfinder-2

The purpose of the Global-1 experimental satellite is to allow BlackSky to test, develop and demonstrate that satellite’s subsystems, in particular those subsystems that have been upgraded from the Pathfinder model. BlackSky believes that these subsystems will address the issues that arose with regard to Pathfinder-1, among other things, to allow for improved imaging capability from this second generation prototype satellite.

BlackSky plans to launch Global-1 on a PSLV rocket. The launch period now planned for launch by PSLV targeted for May- June 2018.

The PSLV rocket will place Global-1 in a circular, sun synchronous orbit (SSO) between 500 and 550 km, with an inclination, depending on the altitude of the orbit, of approximately 97 degrees and a local time of descending node (LTDN) of 0930.

The exact altitude at which Global-1 will be launched within the range specified above is still to be determined by PSLV. Because Global-1 is a secondary spacecraft on the PSLV rocket, this placement as well as the timing of the PSLV launch are subject to

¹ BlackSky Global, LLC; Callsign WH2XPT, FCC File No. 0053-EX-ML-2016.

the requirements of the primary mission of the PSLV rocket. BlackSky will notify the Commission when these determinations are made.

The Orbital Debris Assessment Report (“ODAR”) and link budget analyses presented in Exhibits 2 and 3 respectively make calculations on a worst case basis, assuming an altitude of 550 km.

Technical details regarding the space segment are shown in Attachment A hereto formatted to facilitate its analysis by the NTIA. A summary of the frequencies to be employed, substantially the same as those frequencies that were to be employed for the now-cancelled Pathfinder-2 mission are shown in the following table:

	Center Frequency	Bandwidth	Lower Bound	Upper Bound
UHF receive (uplink)	450.2 MHz	22 kHz	450.189 MHz	450.211 MHz
UHF transmit (downlink)	401.5 MHz	22 kHz	401.489 MHz	401.511 MHz
S-band Receive (uplink)	2071.875 MHz	176 kHz	2071.787 MHz	2071.963 MHz
X-band Transmit (downlink)	8125 MHz	200 MHz	8025 MHz	8225 MHz

As noted above, BlackSky is submitting herewith an ODAR to reflect the Global-1 experimental satellite, which has additional information regarding the satellite design. As stated therein, Global-1 is outfitted with both GPS and propulsion systems to mitigate the risk of collision and overall the risk of orbital debris.

Global-1 is the first phase of what BlackSky plans to be a larger constellation of satellites. The first four satellites of that constellation were approved by NOAA on August 28, 2017. A copy of NOAA’s public summary indicated that grant and is included herein as Exhibit 4.

BlackSky notes that while the NOAA grant permits commercial operation, in its application to NOAA, BlackSky advised NOAA that it intended to begin its Global satellite program operating Global-1 on an experimental basis, as reflected in this application.

Further, BlackSky will provide the ITU SpaceCap filing information along with a signed declaration of unconditional acceptance of all consequent ITU cost-recovery responsibility under separate cover.

Earth Station Authority:

BlackSky already has experimental authority for earth stations to communicate with the Pathfinder satellites under Call Sign WH2XPS.² BlackSky will file a separate application to modify that license to add Global-1 as an additional point of communication

24-hour Contact Details:

BlackSky maintains a 24-hour, 7-day-per-week hotline at its Mission Control Center, which can be reached at the following telephone number for any interference issues: 844-332-3318

Construction at Own Risk:

Consistent with Section 5.64 of the Commission's rules,³ BlackSky hereby notifies the Commission that it will begin construction of the proposed Global-1 experimental satellite, at its own risk.

² BlackSky Global, LLC; Callsign WH2XPS, FCC File No. 0339-EX-RR-2016.

³ 47 C.F.R. § 5.64.

Location	Global-1 satellite, low-Earth orbit	
Link	X-band downlink	UHF downlink
Antenna Manufacturer	Antenna Development Corporation	Spaceflight Industries, Inc.
Antenna Model	Microstrip X-band antenna	-
Number of Antennas	1	1
Address, City, State	Mobile, LEO Orbit: 500-550 km circular SSO (97.40 to 97.59 deg inclination), 0930 LTDN	
Lat/Long coordinates in minutes,seconds	Mobile, LEO	Mobile, LEO
Site Elevation AMSL	Mobile, LEO	Mobile, LEO
Frequencies	8125 MHz center frequency	401.5 MHz center center frequency
Output Power (W)	4	2
ERP (dBW)	18.8 (peak)	2.0 (peak)
Frequency tolerance	*	*
Emissions (bandwidth of signal plus emission type)	200MG1D	22K0F1D
Modulating Signal	A single channel containing digital information	A single channel containing digital information

*In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.