

LAW OFFICES  
**GOLDBERG, GODLES, WIENER & WRIGHT LLP**  
1025 CONNECTICUT AVENUE, N.W., SUITE 1000  
WASHINGTON, D.C. 20036-2413

HENRY GOLDBERG  
JOSEPH A. GODLES  
JONATHAN L. WIENER  
DEVENDRA ("DAVE") KUMAR

HENRIETTA WRIGHT  
THOMAS G. GHERARDI, P.C.  
COUNSEL

THOMAS S. TYCZ\*  
SENIOR POLICY ADVISOR

\*NOT AN ATTORNEY

(202) 429-4900  
TELECOPIER:  
(202) 429-4912  
e-mail:  
jwiener@g2w2.com  
website: www.g2w2.com

December 6, 2017

**FILED ELECTRONICALLY VIA ELS**

Ms. Leann Nguyen  
Office of Engineering & Technology  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: BlackSky Global, LLC,  
Response to OET Request for Information,  
Correspondence Reference #39711  
Application for New Experimental License  
FCC File No. 0864-EX-CN-2017

Dear Ms. Nguyen,

Submitted herewith is BlackSky Global, LLC's ("BlackSky") response to your request for information dated November 15, 2017, regarding the above referenced application. For clarity, questions are included below in italics with BlackSky's response is regular type thereafter.

*Please submit the all following information below for us to process your application*

1. - *Spacecap data file (send file directly to Jeanette.spriggs@fcc.gov and cc Leann.Nguyen@fcc.gov).*

This file was sent to Joseph Hill by email through this office on November 22, 2017 per Ms. Spriggs.

2. - *Spacecap letter*

Attached is a draft letter for the Commission to request ITU Advanced Publication to submit along with the SpaceCap information.

3. - *Cost recovery letter*

The cost recovery letter was filed via ULS on the same day the application was submitted. Attached is a copy of the letter.

4. - *A NOAA license is required for satellites with imaging capabilities.*

BlackSky has a NOAA license covering the satellite for which an FCC experimental license is being sought. A copy of the public information published by NOAA in connection with that license was included with the experimental license application and another copy is attached hereto for reference. The license itself contains information that is highly confidential and is not made available for public release by NOAA. BlackSky notes that it was not required to file with the Commission more than the public summary of its NOAA license with the last experimental license that was issued to it by the Commission and hopes that this will be sufficient for the current application.

5a. - *The experiment uses federal or shared government frequencies must submit additional technical data.*

- *Transmitter Antenna:*
  - *Location:*
  - *Apogee and Perigee*
  - *Polarization*
  - *Orientation*
  - *Dimension: Gain (dbi),*
  - *Beamwidth (degree),*
  - *Azimuth (degree clockwise from True North),*
  - *Elevation (in meter above MSL)*
  - *Height (in meter above MSL).*
- *Receiver Antenna:*
  - *Location: lat/long, city, state.*
  - *Polarization - Orientation*
  - *Dimension: Gain (dbi), Beamwidth (degree), Azimuth (degree clockwise from True North), Elevation (in meter above MSL) , Height (in meter above MSL).*

See attached Exhibit 5 attached hereto.

5b. - *Orbital characteristics*

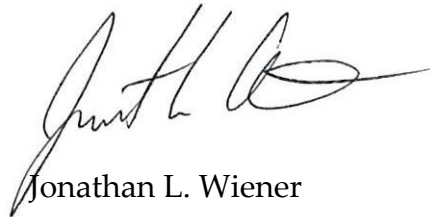
- |   |                                      |
|---|--------------------------------------|
| - <i>Inclination angle (in degree)</i>      | Approximately 97°                    |
| - <i>Apogee (in km) - Perigee (in km)</i>   | Circular Orbit; between 500 & 550 km |
| - <i>Period (in hour)</i>                   | 1.6 hours                            |
| - <i>Number of satellite in the system.</i> | One (1)                              |
| - <i>Number of transmitting satellite</i>   | One (1)                              |
| - <i>Number of receiving satellite</i>      | One (1)                              |

6.- *Name and phone of person who will terminate the system if interference occurs.*

As described in the previously submitted Exhibit 1, the Mission Control hotline is 844-332-3318 and is available 24 hours/ 7 day-per-week. The person on the receiving end of this phone number is rotating. Their supervisor is John Springmann.

Questions with respect to this matter should be referred to the undersigned.

Sincerely,



Jonathan L. Wiener  
*Attorney for BlackSky Global, LLC*

Attachments

[FCC]

Atila Matas, Head of SPR  
Radiocommunication Bureau  
International Telecommunication Union  
Place des Nations  
CH-1211 Geneva 20

Subject: Advance Publication Information for the Global-1 Satellite network.

Dear Sir:

In accordance with the provisions of Article 9.1 and Appendix 4 of the Radio Regulations, the Administration of the United States is submitting a request for the Advance Publication Information of the Global -1 satellite.

Enclosed is a diskette containing an electronic copy using Space Capture v8.03 of the information for the Global -1 satellite.

In addition we would like to provide the cost recovery billing information under Agency code 528 in the Preface to the International Frequency List (IFL) for U.S.A. commercial operators.

Cost-recovery invoices associated with this filing should be sent to the following point of contact:

H. Indra Hornsby  
1505 Westlake Avenue North, Suite 600  
Seattle, Washington 98109, U.S.A.  
E-Mail: [indrah@spaceflightindustries.com](mailto:indrah@spaceflightindustries.com)  
Phone: (866) 342-9934  
Fax: N/A

Technical questions regarding this submission should be directed to:

John Springmann  
BlackSky Global LLC  
1505 Westlake Avenue North, Suite 600  
Seattle, Washington 98109, U.S.A.  
E-Mail: [johns@spaceflightindustries.com](mailto:johns@spaceflightindustries.com)  
Phone: (866) 342-9934  
Fax: N/A

We request that a courtesy copy of all correspondence be sent to our Administration also.

Please acknowledge receipt of this information.

Thank you for your kind consideration in this matter.

Sincerely,

Chief, Strategic Analysis and  
Negotiations Division  
International Bureau  
Enclosure



November 13, 2017

Jose Albuquerque  
Chief, Satellite Division-International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, DC 20554

**Re: BlackSky Global, LLC - Application for Authority to  
Launch and Operate Experimental Space Station Global-  
1 (FCC File No. 0864-EX-CN-2017) (the "Application")**

Dear Mr. Albuquerque:

BlackSky Global, LLC ("BlackSky"), proposed licensee of an experimental space station ("Global 1"), hereby submits this letter in connection with the above-referenced Application. The information set forth below tracks the information Section 25.111(d) of the Commission's rules.

BlackSky hereby certifies and declares that it unconditionally accepts all consequent International Telecommunication Union (ITU) cost recovery responsibility associated with the Application and with the related ITU filings identified below. BlackSky also acknowledges that payment of these ITU cost recovery fees by the applicant to the ITU grants no right to the orbit or spectrum identified in the associated ITU filings.

In order for the International Bureau to assist the ITU in implementing its cost recovery, BlackSky provides the following information:

- (1) Name of Contact: H. Indra Hornsby
- (2) Name of Applicant: BlackSky Global, LLC
- (3) Address: 1505 Westlake Avenue North, Suite 600, Seattle, Washington 98109, U.S.A.
- (4) Email address: [indrah@spaceflightindustries.com](mailto:indrah@spaceflightindustries.com)
- (5) Telephone number: 866-342-9934

Please contact the undersigned if you have any questions or need any additional information.

Sincerely,



---

H. Indra Hornsby  
General Counsel

**Global 1-4 Constellation Private Remote Sensing Space System**

On August 28, 2017, the Commercial Remote Sensing Regulatory Affairs Office of the National Oceanic and Atmospheric Administration, an agency of the Department of Commerce, granted a license to BlackSky Global, LLC to operate the first phase of the Global Constellation, satellites 1-4, a private, commercial, space-based, remote sensing system (the "Global Constellation").

These first four satellites, which make up the initial phase of the Global Constellation, are licensed to collect images of the Earth and will operate in circular orbits with altitudes ranging from 500-575 km and inclinations near 97 degrees. The first phase will be followed by additional launches, culminating in the planned constellation of sixty satellites total, operating in mid-inclination and sun-synchronized orbits and at altitudes near 500 km.

Inquiries should be directed to [legal@spaceflightindustries.com](mailto:legal@spaceflightindustries.com) or

H. Indra Hornsby  
General Counsel  
BlackSky Global LLC  
1505 Westlake Avenue North, Suite 600  
Seattle, Washington 98019, U.S.A.



<b>Link:</b>	UHF uplink		UHF downlink		S-band uplink		X-band downlink	
<b>Center frequency:</b>	450.2 MHz		401.5 MHz		2071.875 MHz		8125 MHz	
<b>Ground Station Used:</b>	Invercargill, New Zealand	North Pole, AK	Invercargill, New Zealand	North Pole, AK	North Pole, AK	Invercargill, New Zealand	Invercargill, New Zealand	North Pole, AK
<b>Transmitter Antenna:</b>								
<b>Location:</b>	ground-based (details below)	ground-based (details below)	low-earth orbit		ground-based (details below)	ground-based (details below)	low-earth orbit	
<b>Latitude , Longitude:</b>	46° 31' 43" S 168° 22' 52" E	64° 47' 38" N 147° 32' 09" W	n/a		46° 31' 43" S 168° 22' 52" E	64° 47' 38" N 147° 32' 09" W	n/a	
<b>City:</b>	Invercargill, Southland	North Pole	n/a		Invercargill, Southland	North Pole	n/a	
<b>State:</b>	(New Zealand)	Alaska, USA	n/a		(New Zealand)	Alaska, USA	n/a	
<b>Apogee &amp; Perigee:</b>	n/a	n/a	500-550 km apogee (TBD) 500-500 km perigee (TBD) circular		n/a	n/a	500-550 km apogee (TBD) 500-500 km perigee (TBD) circular	
<b>Polarization:</b>	RHCP	RHCP	Linear		RHCP	RHCP	Linear	
<b>Orientation:</b>	varies -- LEO tracking antenna	varies -- LEO tracking antenna	varies (in-orbit)		varies -- LEO tracking antenna	varies -- LEO tracking antenna	varies (in-orbit)	
<b>Dimensions:</b>	yagi-style, 120" boom length	yagi-style, 120" boom length	whip antenna, 8" length		7.3 m diameter	3.7 m diameter	patch antenna, 4.1" x 5.9"	
<b>Gain (dBi):</b>	16 dBiC	16 dBiC	1.1 dBiC peak*, -5 dBiC for 95% spherical coverage		48 dBi	34.4 dBi	15 dBiC	
<b>Beamwidth (deg):</b>	30 deg	30 deg	not applicable. Apporoximately omnidirectional		1.2 deg	approx. 2.7 deg	16 x 30 deg full width	
<b>Azimuth (degrees clockwise from true north):</b>	0 to 360 deg (LEO-tracking)	0 to 360 deg (LEO-tracking)	n/a		0 to 360 deg (LEO-tracking)	0 to 360 deg (LEO-tracking)	n/a	
<b>Elevation (angle relative to horizon):</b>	5 to 90 deg (LEO-tracking)	5 to 90 deg (LEO-tracking)	n/a		5 to 90 deg (LEO-tracking)	5 to 90 deg (LEO-tracking)	n/a	
<b>Height (in meter above MSL):</b>	24	151	n/a		24	144	n/a	
<b>Receiver Antenna:</b>								
<b>Location:</b>	low-Earth orbit (LEO)				low-Earth orbit (LEO)			
<b>Latitude , Longitude:</b>	n/a		ground-based (details below)	ground-based (details below)	n/a		ground-based (details below)	ground-based (details below)
<b>City:</b>	n/a		46° 31' 43" S 168° 22' 52" E	64° 47' 38" N 147° 32' 09" W	n/a		46° 31' 43" S 168° 22' 52" E	64° 47' 38" N 147° 32' 09" W
<b>State:</b>	n/a		Invercargill, Southland	North Pole	n/a		Invercargill, Southland	North Pole
<b>Polarization:</b>	Linear		New Zealand	Alaska, USA	Linear		New Zealand	Alaska, USA

<b>Orientation:</b>	Varies	varies -- LEO tracking antenna	varies -- LEO tracking antenna	Varies	varies -- LEO tracking antenna	varies -- LEO tracking antenna
<b>Dimensions:</b>	whip antenna, 8" length	yagi-style, 133 inch boom length	yagi-style, 133 inch boom length	patch, 4" x 4"	7.3 m diameter	3.7 m diameter
<b>Gain (dBi):</b>	1.1 dBiC peak*, -5 dBiC for 95% spherical coverage	19 dBiC	19 dBiC	6 dBiC	55 dBiC	43 dBiC
<b>Beamwidth (deg):</b>	not applicable. Apporiximately omnidirectional	30 deg	30 deg	70 deg	0.3 deg	approx 0.7 deg
<b>Azimuth (degrees clockwise from true north):</b>	n/a	0 to 360 deg (LEO-tracking)	0 to 360 deg (LEO-tracking)	n/a	0 to 360 deg (LEO-tracking)	0 to 360 deg (LEO-tracking)
<b>Elevation (meter above MSL):</b>	n/a	5 to 90 deg (LEO-tracking)	5 to 90 deg (LEO-tracking)	n/a	5 to 90 deg (LEO-tracking)	5 to 90 deg (LEO-tracking)
<b>Height (in meter above MSL):</b>	n/a	24	151	n/a	24	144

\* note that the UHF antenna on the spacecraft is linear, but it's gain is reported in dBiC because it was characterized against a RHCP (circularly-polarized) ground antenna