AMENDMENT TO APPLICATION FOR

EXPERIMENTAL EARTH STATION AUTHORITY (FILE NO. 1136-EX-ST-2013)

BlackSky, LLC ("BlackSky") hereby amends its above-referenced pending application for experimental earth station authority. BlackSky notes that it has filed a companion experimental space station application to the instant request.[1]

On the basis of further analysis of anticipated system performance and equipment functionality, BlackSky has determined that some technical details outlined in its earth station application should be updated. BlackSky is also submitting herewith a revised narrative to the above-referenced application and it has made the corresponding changes to the OET's STA form. Furthermore, BlackSky is providing updated radiation hazard reports to account for the change in power described below.

BlackSky amends its pending experimental earth station application in the following ways:

1. Station location section: For each of the proposed ground station antennas, the output power is being increased from 10 W to 50 W.
2. Modulating signal: For each of the proposed ground station antennas, the modulating signal of the 1M50G1D carrier is being reverted to FSK.

Finally, as a result of a modified launch schedule beyond its control, BlackSky will not require the subject authority prior to January 15, 2015. Accordingly, it is herein also amending its application to seek authority for the six month period of January 15, 2015 to July 15, 2015.

[1] File No. 1004-EX-ST-2013.

Amended March 19, 2014

REQUEST FOR EXPERIMENTAL SPECIAL TEMPORARY AUTHORITY

BlackSky, LLC ("BlackSky") herein requests experimental Special Temporary Authority ("STA") to demonstrate and test earth station facilities in connection with the launch of two microsatellites in the manner described below.

Purpose of Special Temporary Authority.

BlackSky seeks to test, develop, and demonstrate the efficacy and design of newly configured microsatellites, including associated software applications, relative to their ability to provide high-resolution remote sensing in the Earth Exploration Satellite Service ("EESS").

To this end, BlackSky has submitted an application for STA to launch, test, and demonstrate two prototype satellites – Scout 1 and Scout 2 – anticipated to be launched and ready for testing around approximately January 15, 2015, for a period of up to six (6) months.[1]

BlackSky submits herein an associated request for experimental STA to use earth station facilities at three locations to communicate with the Scout 1 and Scout 2 satellites. As with its associated space station application, BlackSky herein seeks authority for up to six (6) months, beginning on January 15, 2015.[2]

The grant of the instant request will permit BlackSky to communicate and control the satellites and thereby to assemble critical feedback as to the performance of the microsatellites themselves and the overall architecture of the proposed imaging and communications system.

BlackSky brings to the Commission's attention that it has received authority to operate the Scout 1 and Scout 2 microsatellites from the National Oceanographic and Atmospheric Administration ("NOAA"), the public summary of which it is uploading to the application docket.

Operational Description.

BlackSky is developing plans to deploy two satellites intended to demonstrate the technology and to experiment with configurations and processes.

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[1] FCC File No. 1004-EX-ST-2013.

[2] As it noted in its associated space station application, because BlackSky is submitting the instant application well in advance of when it needs such authority of the proposed launch of the subject microsatellites, it is requesting a start date of January 15, 2015, with the possibility that the microsatellites may be ready for testing later than, but not earlier than, that date.

Once in orbit, the demonstration and testing will focus on each satellite's subsystems and their collective interaction, as well as the ability to communicate with and control the satellites, test the imaging capability of the satellites, and ascertain the actual throughput of imaging data from the satellite to the ground stations identified below and the BlackSky network operations center.

The technical details of the ground segment are as follows:

Ground station locations:

(1) Tukwila
(47° 29' 56'' N , 122° 17' 22'' W)
3415 S 116th St, Ste 123, Tukwila, WA 9816
Site elevation = 15.9 m AMSL

(2) Tonsina Tract
(61° 42' 45.72" N 145° 8' 3.48" W)
Township 2 South, Range 1 East, Copper River Meridian, AK
Site elevation = 594.4 m AMSL

(3) Prudhoe Bay Tract
(70° 13′ 28.42″ N 148° 25′ 38.02″ W)
Track 11, North Slope Lease Tracts, Umiat Meridian, AK
Site elevation = 9.1 m AMSL

Antenna details:

S-band & X-band:	Manufacturer:	ORBIT
(Tx and Rx)	Model:	AL-1000-SX
	Diameter size:	3.7 m
UHF Tx:	Manufacturer:	M2 Antenna Systems
	Model:	450CP34 (yagi antenna)
	Boom length:	304.8 cm
UHF Rx:	Manufacturer:	M2 Antenna Systems
	Model:	400CP30 (yagi antenna)
	Boom length:	337.9 cm

Frequencies:

UHF Tx (uplink):	449.75-451.25 MHz
UHF Rx (downlink):	401-402 MHz

S-band Tx (uplink): 2071.88 MHz, 78 kHz bandwidth at 100 kbps
X-band Rx (downlink): 8080 MHz, 80 MHz bandwidth at 100 Mbps

Antenna gain:

UHF Tx: 16.0 dBi @ 435-455 MHz
UHF Rx: 16.2 dBi @ 395-405 MHz
S-band Tx: 33.5 dBi @ 2025-2110 MHz (no S-band receive)
X-band Rx: 45.9 dBi @ 8100-8400 MHz

Power, EIRP, Polarization:

UHF: 50 W, Total EIRP 30.1 dBW, RHCP/LHCP
S-band: 50 W, Total EIRP 48. 5 dBW, RHCP

Modulation and Services:

UHF: FSK, Command
S-band: SOQPSK, Data
X-band: O-QPSK, Data

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: (206) 351-5165.

RKF Engineering Solutions, LLC
1229 19th St. NW, Washington, DC 20036
Phone 202.463.1567 Fax 202.463.0344
www.rkf-engineering.com

Radiation Hazard Report – 3.7-meter Antenna

This report analyzes electro-magnetic non-ionizing radiation which would accompany the operation of the Black Sky 3.7-meter earth station antenna (manufactured by Orbit and known as model AL-1000-SX) which will be used to uplink S-Band signals to their two satellites. The antenna will be located at Tukwila, WA where the site elevation is 15.9m AMSL. The antenna will be transmitting at S-Band (2025-2110 MHz).

This report provides calculations which are used to determine the transmission power density in the "Far Field", the "Near Field" and the "Transition Region". Additional analysis determines the region between the "Main Reflector and the Subreflector", the "Main Reflector Region" and the "Main Reflector and the Ground".

Accordingly, we use the "Maximum Permissible Exposure" limits published by the FCC OET 65 Bulletin for the General Population/Uncontrolled Exposure and the limits for the Occupational/Controlled Exposure. The results of the calculations meet the FCC's OET Bulletin, No. 65, with the exception of the "Main Reflector and the Subreflector", where a Hazard Zone is located.

The Hazard Zone, the region between the "Main Reflector and the Subreflector", is a dangerous location for workers to be in, doing tests, or replacing various equipment, or doing anything required their having a reason to be located there. All workers will be advised that being in the Hazard Zone while the antenna is transmitting is strictly forbidden. Black Sky will have specific rules placed on numerous highlighted signs for all employees and temporary workers to see. The signs will be available in the area of work and elsewhere around the antenna where it can be seen at any time. In addition, whenever the antenna is transmitting to the satellite, red lights will be illuminated alerting workers and visitors to be careful to stay away from the antenna and any other equipment which may be operating. Black Sky will maintain a 7-day-per-week hotline at its Mission Control Center. Make certain that no one is near the antenna during transmissions.

The results of the calculations performed are all within the FCC's requirements except for the Hazard Zone.

Far Field Analysis

The calculation for the Far Field location includes the actual distance to where the far field begins, followed by a calculation of the power density at that location.

Near Field Analysis

The power flux density will be at its highest value the whole length of the Near Field area. We evaluate end of the Near Field, followed by the maximum power density in that area.

Transition Area

In the transition area between the Near and Far Fields, the power density decreases inversely with the square of the distance.

Main Reflector and Subreflector

The subreflector of the antenna transmits directly to the Main Reflector which reflects the transmissions to free space. The maximum amount of power density in this area will be calculated at the subreflector.

Main Reflector Area

Power density at the 3.7 meter dish is analyzed and the calculation provided.

Area from the Main Reflector to nearby Ground

The power density in this area will be determined by calculation of the nearby ground area.

Conclusions

The following page provides the details of each analyzed area. The results of the calculations demonstrate that the Black Sky 3.7-meter antenna will meet all required values of power density except for the area between the subreflector and the main reflector, where signage will be used to prevent any dangerous exposure to the public or working employees.

S-Band Power Density

Inputs		Units	Calculations	S-Band Power Density	Units
S-Band diameter	**3.7**	m	Far Field distance	**55.4445**	m
S-Band Gain	**33.5**	dBi	On-Axis Power Density Far Field	**2.89763179**	W/m^2
S-Band Gain	**2238.72114**			**0.28976318**	mW/cm^2
S-band EIRP	**41.65**	dBW			
Power S-Band	**8.15**	dBW	Near Field Distance	**23.101875**	m
Freq (S-Band)	**2025**	MHz	Near Field Power Density	**6.76434776**	W/m^2
Wavelength S-Band	**0.14814815**	m		**0.67643478**	mW/cm^2
Antenna efficency S-Band	**0.36365475**				
Power in Watts	**50**	W	Transition Distance	**39.2731875**	m
S-Band Subreflector Diameter	**123.333333**	cm	Transition Region Power Density	**3.97902809**	W/m^2
S-Band Subreflector Area	**11946.7787**	cm^2		**0.39790281**	mW/cm^2
S-Band Antenna Surface Area	**10.7521009**	m^2			
			Flange/Reflector	**16.7409266**	mW/cm^2
			Main Reflector Region	**18.601016**	W/m^2
				1.8601016	mW/cm^2
			Antenna/Ground	**4.650254**	W/m^2
				0.4650254	mw/cm^2

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CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING THE ENGINEERING INFORMATION SUBMITTED IN THIS APPLICATION

I hereby certify that I am a technically qualified person responsible for the preparation of the engineering information contained in this filing, that I am familiar with Part 2, 25 and 101 of the Commission's rules , that I have prepared or reviewed the engineering information submitted in these comments, and that it is complete and accurate to the best of my knowledge. I am a registered Professional Engineer. My seal is attached.

By:

Philip A. Rubin. P.E.
President
RKF Engineering Solutions, LLC
Washington, DC
March 7, 2014

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Radiation Hazard Report – UHF-Antenna

This report analyzes electro-magnetic non-ionizing radiation which would accompany the operation of the Black Sky UHF earth station antenna (manufactured by M2 Antenna Systems and known as Model 450CP34-Yagi) which will be used to uplink UHF signals to their two satellites. The antenna will be located at Tukwila, WA. where the site elevation is 15.9m AMSL. The antenna will be transmitting at UHF (435-455MHz).

This report provides calculations which are used to determine the transmission power density in the "Far Field", the "Near Field", the "Transition Region" and nearby ground.

Accordingly, we use the "Maximum Permissible Exposure" limits published by the FCC OET 65 Bulletin for the General Population/Uncontrolled Exposure and the limits for the Occupational/Controlled Exposure. The results of the calculations meet the FCC's requirements.

Far Field Analysis

The calculation for the Far Field location includes the actual distance to where the far field begins, followed by a calculation of the power density at that location.

Near Field Analysis

The power flux density will be at its highest value the whole length of the Near Field area. We evaluate end of the Near Field, followed by the maximum power density in that area.

Transition Area

In the Transition area between the Near and Far Fields, the power density decreases inversely with the square of the distance.

Area from the Antenna to nearby Ground

The power density in this area will be determined by calculation of the nearby ground area.

Conclusions

The following page provides the details of each analyzed area. The results of the calculations demonstrate that the Black Sky UHF antenna will meet all required values of power density.

UHF Power Density

Inputs		Units	Calculations	UHF Power Density	Units
UHF Antenna diameter	**2.54**	m	Far Field dist	**5.80644**	m
UHF Gain	**16**	dBi	On-Axis Power Density Far Field	**4.69829471**	W/m^2
UHF Gain	**39.81071706**			**0.46982947**	mW/cm^2
UHF EIRP	**24.15**	dBW			
Power UHF	**8.15**	dBW	Near Field Dist	**2.41935**	m
Frequency (UHF)	**450**	MHz	Near Field Power Density	**10.9678874**	W/m^2
Wavelength UHF	**0.666666667**	m		**1.09678874**	mW/cm^2
Antenna efficiency UHF	**0.277875529**				
Power in Watts	**50**	W	Transition Dist	**4.112895**	m
UHF Antenna Surface Area	**5.067074791**	m^2	Transition Region Power Density	**6.45169849**	W/m^2
				0.64516985	mW/cm^2
			Antenna/Ground	**9.86762621**	W/m^2
				0.98676262	mw/cm^2

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CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING THE ENGINEERING INFORMATION SUBMITTED IN THIS APPLICATION

I hereby certify that I am a technically qualified person responsible for the preparation of the engineering information contained in this filing, that I am familiar with Part 2, 25 and 101 of the Commission's rules , that I have prepared or reviewed the engineering information submitted in these comments, and that it is complete and accurate to the best of my knowledge. I am a registered Professional Engineer. My seal is attached.

By:

Philip A. Rubin. P.E.
President
RKF Engineering Solutions, LLC
Washington, DC
March 7, 2014