

Approved by OMB
3060-0678

Date & Time Filed: Feb 28 2013 7:12:35:983PM

File Number: SES-MOD-INTR2013-00497

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD - MAIN FORM	FCC Use Only
FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Fairbanks Earth Station Modification

1-8. Legal Name of Applicant	
Name: DG Consents Sub, Inc.	Phone Number: 303-684-4000
DBA Name:	Fax Number: 303-684-4340
Street: 1601 Dry Creek Drive	E-Mail: scedars@digitalglobe.com
City: Longmont	State: CO
Country: USA	Zipcode: 80503 -
Attention: Mr. Seth Cedars	
9-16. Name of Contact Representative	
Name: Stephen D. Baruch	Phone Number: 202-416-6782
Company: Lerman Senter PLLC	Fax Number: 202-428-4626
Street: 2000 K Street, NW Suite 600	E-Mail: sbaruch@lermansenter.com
City: Washington	State: DC
Country: USA	Zipcode: 20006-
Attention:	Relationship: Legal Counsel

CLASSIFICATION OF FILING

<p>17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.</p> <p><input checked="" type="radio"/> a1. Earth Station</p> <p><input type="radio"/> a2. Space Station</p>	<p>(N/A) b1. Application for License of New Station</p> <p>(N/A) b2. Application for Registration of New Domestic Receive-Only Station</p> <p><input type="radio"/> b3. Amendment to a Pending Application</p> <p><input checked="" type="radio"/> b4. Modification of License or Registration</p> <p>b5. Assignment of License or Registration</p> <p>b6. Transfer of Control of License or Registration</p> <p><input type="radio"/> b7. Notification of Minor Modification</p> <p>(N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite</p> <p>(N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States</p> <p>(N/A) b10. Other (Please specify)</p> <p>(N/A) b11. Application for Earth Station to Access a Non-U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States.</p>
<p>17c. Is a fee submitted with this application?</p> <p><input checked="" type="radio"/> If Yes, complete and attach FCC Form 159.</p>	

If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).

- Governmental Entity Noncommercial educational licensee
 Other (please explain):

17d.

Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station

18. If this filing is in reference to an existing station, enter:

(a) Call sign of station:
E950499

19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:

(a) Date pending application was filed: (b) File number:
SESMOD2007082401119

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- a. Fixed Satellite
 b. Mobile Satellite
 c. Radiodetermination Satellite
 d. Earth Exploration Satellite
 e. Direct to Home Fixed Satellite
 f. Digital Audio Radio Service
 g. Other (please specify)

21. STATUS: Choose the button next to the applicable status. Choose only one.

- Common Carrier Non-Common Carrier

22. If earth station applicant, check all that apply.

- Using U.S. licensed satellites
 Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

- Connected to a Public Switched Network Not connected to a Public Switched Network N/A

24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).

- a. C-Band (4/6 GHz) b. Ku-Band (12/14 GHz)
 c. Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: 2042 Frequency Upper: 8400 (Please specify additional frequencies in an attachment)

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- a. Fixed Earth Station
 b. Temporary-Fixed Earth Station
 c. 12/14 GHz VSAT Network
 d. Mobile Earth Station
 e. Geostationary Space Station
 f. Non-Geostationary Space Station
 g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

- Transmit/Receive Transmit-Only Receive-Only N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- a -- authorization to add new emission designator and related service
 b -- authorization to change emission designator and related service
 c -- authorization to increase EIRP and EIRP density

- d -- authorization to replace antenna
 e -- authorization to add antenna
 f -- authorization to relocate fixed station
 g -- authorization to change frequency(ies)
 h -- authorization to add frequency
 i -- authorization to add Points of Communication (satellites & countries)
 j -- authorization to change Points of Communication (satellites & countries)
 k -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
 l -- authorization to change orbit location
 m -- authorization to perform fleet management
 n -- authorization to extend milestones
 o -- Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. **A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.**

Yes No
Rad Haz Study

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government? Yes No
30. Is the applicant an alien or the representative of an alien? Yes No N/A
31. Is the applicant a corporation organized under the laws of any foreign government? Yes No N/A
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country? Yes No N/A
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country? Yes No N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? Yes No
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.
36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances. Yes No
37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances. Yes No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances Yes No

39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances. Yes No

40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. *See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.* Yes No

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43. Yes No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?

43. Description. (Summarize the nature of the application and the services to be provided). See Attachment A.Attachment A

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25. A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements. B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached. C

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CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- Individual
- Unincorporated Association
- Partnership
- Corporation
- Governmental Entity
- Other (please specify)

45. Name of Person Signing
Yancey L. Spruill

46. Title of Person Signing
Treasurer

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR

IMPRISONMENT
(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION
(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1: Site Identifier:	Fairbanks ES	E5. Call Sign:	E950499
E2: Contact Name	Remote Control Point	E6. Phone Number:	907-457-1692
E3. Street:	3 Mile, Chena Hot Springs Road	E7. City:	Fairbanks
E4. State	AK	E8. County:	North Star
E10. Area of Operation:		E9. Zip Code	99712
E11. Latitude:	64 ° 53 ' 26.0 " N		N/A
E12. Longitude:	147 ° 31 ' 44.0 " W		
E13. Lat/Lon Coordinates are:		<input type="radio"/> NAD-27	<input checked="" type="radio"/> NAD-83 <input type="radio"/> N/A
E14. Site Elevation (AMSL):	215.0 meters		

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide as a technical analysis showing compliance with two-degree spacing policy.	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input checked="" type="radio"/> Yes <input type="radio"/> No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as Coordination Report	<input checked="" type="radio"/> Yes <input type="radio"/> No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes <input checked="" type="radio"/> No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes <input checked="" type="radio"/> No

POINTS OF COMMUNICATION

Satellite Name:GeoEye 1 GeoEye 1 NGSO If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
Satellite Name:OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: WORLDVIEW-3	E22. ITU Name:
E23. Orbit Location: NGSO	E24. Country:

Satellite Name:OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: IKONOS	E22. ITU Name:
E23. Orbit Location: NGSO	E24. Country: USA
Satellite Name:GeoEye 2 GeoEye 2 NGSO If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
POINTS OF COMMUNICATION (Destination Points)	
E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmint and/or Recieve (___ dBi at ___ GHz)	
Fairbanks ES	1	1	DATRON/TRANS CO	8300	7.3	40.3 dBi at 2.0250	
Fairbanks ES	1	1	DATRON/TRANS CO	8300	7.3	51.5 dBi at 8.0000	
E28. Antenna Id	E33/34. Diameter Minor/Major (meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
1	0.0/0.0	6.0	221.0	0.0	11.0	0.0	51.0

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization (H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)
1	8135.000 8285.000	R	Left and Right Circular	150MG1D	0.0	0.0
E50. Modulation and Services QPSK, Data						
1	8025.0000 8395.0000	R	Left and Right Circular	370MG1D	0.0	0.0
E50. Modulation and Services QPSK, Data						
1	8345.9680 8346.0320	R	Right Hand Circular	64K0G1D	0.0	0.0
E50. Modulation and Services Image Data						
1	8385.9400 8386.0600	R	Right Hand Circular	120KG1D	0.0	0.0
E50. Modulation and Services QPSK, Telemetry						
1	8393.9705 8394.0295	R	Right Hand Circular	59K7G1D	0.0	0.0
E50. Modulation and Services QPSK, Telemetry						
1	2042.0000 2042.0000	T	Right Hand Circular	68K0G2D	51.0	51.0

E50. Modulation and Services BPSK (TT&C)						
1	2052.0000 2052.0000	T	Right Hand Circular	1M32G1D	51.0	39.0
E50. Modulation and Services BPSK (TT&C)						
1	2052.0000 2052.0000	T	Right Hand Circular	68K0G2D	51.0	51.0
E50. Modulation and Services BPSK (TT&C)						
1	2092.6000 2092.6000	T	Right Hand Circular	1M32G1D	51.0	39.0
E50. Modulation and Services BPSK (TT&C)						
1	2042.0000 2042.0000	T	Right Hand Circular	NON	51.0	51.0
E50. Modulation and Services Unmodulated Carrier						
1	2052.0000 2052.0000	T	Right Hand Circular	NON	51.0	51.0
E50. Modulation and Services Unmodulated Carrier						
1	2092.6000 2092.6000	T	Right Hand Circular	NON	51.0	51.0
E50. Modulation and Services Unmodulated Carrier						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits (MHz)	E54/55. Range of Satellite Arc Eastern/Western Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon (dBW/4kHz)
1	Non-Geostationary	2042.0000 2042.0000	0.0/0.0	0.0	5.0	360.0	5.0	24.4
	Non-Geostationary	2052.0000 2052.0000	0.0/0.0	0.0	5.0	360.0	5.0	24.4
	Non-Geostationary	2092.6000 2092.6000	0.0/0.0	0.0	5.0	360.0	5.0	24.4

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E66. Phone Number 303-684-4587		
E62. Street Address 1601 Dry Creek Drive Suite 260					
E63. City Longmont		E68. County Boulder		E67/68. State/Country CO/ USA	E64. Zip Code 80503

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

DG Consents Sub, Inc.
Earth Station Modification Application
February 2013
Page 1 of 1

Description of Request

With this application, DG Consents Sub, Inc. (“DG Consents”) requests modification of its earth station located in Fairbanks, Alaska (Call Sign E950499) to permit communications with the GeoEye-1, GeoEye-2 and IKONOS space stations, licensed to GeoEye License Corp. (“GeoEye License”). Following a merger between DigitalGlobe Inc. and GeoEye, Inc., the parent companies of DG Consents and GeoEye License respectively, GeoEye License became a wholly-owned indirect subsidiary of DigitalGlobe, Inc. See SES-T/C-20120817-00761 (granted Jan. 10, 2013).

The frequencies requested in the attached FCC Form 312, Schedule B will be added to the frequencies already authorized for operations from Fairbanks. In addition, the Fairbanks earth station will continue to be used to communicate with all satellites of DG Consents’ Earth Exploration Satellite Service (“EESS”) system (i.e., QuickBird, WorldView-1, and WorldView-2), as well as with the WorldView-3 satellite recently authorized for addition to DG Consents’ fleet of EESS space stations. See FCC File No. SAT-MOD-20120710-00111 (granted Jan. 24, 2013).

RADIATION HAZARD STUDY

DIGITALGLOBE, FAIRBANKS EARTH STATION

When applying for a license to construct and operate, modify, or renew an earth station, it is understood that licensees must certify whether grant of the application will have significant environmental impact as defined in the Federal Communications Commission's (FCC) rules, 47 C.F.R., Section 1.1307.

In this report DigitalGlobe, Inc. analyzes the maximum radiofrequency (RF) levels emitted from the satellite communications antenna described below. The reference document for this study is OET Bulletin No. 65, Edition 97-01, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, August 1997.

ANTENNA NEAR-FIELD POWER DENSITY CALCULATION

The extent of the near-field is defined by the following equation:

$$R_{\text{near}} = (D_{\text{ant}})^2 / (4 \lambda)$$

where: R_{near} = extent of the near-field (in meters)
 D_{ant} = diameter of the antenna main reflector (in meters)
 λ = wavelength of the RF transmit frequency (in meters)

The maximum on-axis power density within near-field is defined by the following equation:

$$S_{\text{near}} = \{ (16 \eta P_{\text{feed}}) / [\pi (D_{\text{ant}})^2] \} / 10$$

where: S_{near} = maximum on-axis power density within the near-field (in milliwatts per square centimeter)
 η = antenna aperture efficiency
 P_{feed} = maximum power into antenna feed flange (in watts)
 D_{ant} = diameter of the antenna main reflector (in meters)

ANTENNA FAR-FIELD POWER DENSITY CALCULATION

The distance to the beginning of the far-field region is defined by the following equation:

$$R_{\text{far}} = [0.6(D_{\text{ant}})^2] / \lambda$$

where: R_{far} = distance to beginning of far-field (in meters)
 D_{ant} = diameter of the antenna main reflector (in meters)
 λ = wavelength of the RF transmit frequency in (meters)

The maximum on-axis power density within the far-field is defined by the following equation:

$$S_{\text{far}} = [(P_{\text{feed}} G_{\text{ant}}) / 4 \pi (R_{\text{far}})^2] / 10$$

where: S_{far} = maximum on-axis power density in the far-field (in milliwatts per square centimeter)

P_{feed} = maximum power into antenna feed flange (in watts)

G_{ant} = antenna main beam gain at RF transmit frequency (in watts)

R_{far} = distance to beginning of far-field (in meters)

ANTENNA TRANSITION REGION POWER DENSITY CALCULATION

By definition, the maximum on-axis power density in the transition region will never be greater than the maximum on-axis power densities in the near-field:

$$S_{\text{tr}} \leq S_{\text{near}}$$

where: S_{tr} = maximum on-axis power density in the transition region (in milliwatts per square centimeter)

S_{near} = maximum on-axis power density in the near-field (in milliwatts per square centimeter)

ANTENNA FEED-FLANGE (OR SUBREFLECTOR) POWER DENSITY CALCULATION

The maximum power density at the antenna feed-flange (or subreflector surface) is defined by the following equation:

$$S_{\text{feed(sub)}} = 1000 \{ [2(P_{\text{feed}})] / \{ [\pi (D_{\text{feed(sub)}})^2] / 4 \} \}$$

where: $S_{\text{feed(sub)}}$ = maximum power density at the antenna feed-flange or subreflector surface (in milliwatts per square centimeter)

P_{feed} = maximum power into antenna feed flange (in watts)

$D_{\text{feed(sub)}}$ = diameter of the antenna feed-flange or subreflector (in centimeters)

ANTENNA MAIN REFLECTOR POWER DENSITY CALCULATION

The maximum power density in the main reflector region of the antenna is defined by the following equation:

$$S_{\text{ant}} = \{ [2(P_{\text{feed}})] / \{ [\pi (D_{\text{ant}})^2] / 4 \} \} / 10$$

where: S_{ant} = maximum power density in the antenna main reflector region (in milliwatts per square centimeter)

P_{feed} = maximum power into antenna feed flange (in watts)

D_{ant} = diameter of the antenna main reflector (in meters)

POWER DENSITY CALCULATION BETWEEN THE ANTENNA MAIN REFLECTOR AND THE GROUND

The maximum power density between the antenna main reflector and the ground is defined by the following equation:

$$S_{\text{ground}} = \{P_{\text{feed}} / \{[\pi (D_{\text{ant}})^2] / 4\}\} / 10$$

where: S_{ground} = maximum power density between the antenna main reflector and the ground (in milliwatts per square centimeter)
 P_{feed} = maximum power into antenna feed flange (in watts)
 D_{ant} = diameter of the antenna main reflector (in meters)

SUMMARY OF CALCULATED RADIATION LEVELS

DigitalGlobe, Inc. understands the licensee must ensure people are not exposed to harmful levels of radiation.

Maximum permissible exposure (MPE) limits for general population/uncontrolled exposure were not considered in this analysis for several reasons. The main-beam height above ground, minimum 5 degree elevation above horizon transmit inhibit mask and tracking motion of this highly directional antenna significantly limit exposure to the general population. Furthermore, access to DigitalGlobe earth stations is limited to authorized personnel who have been appropriately briefed and advised.

MPE limits for occupational/controlled exposure, however, were considered in this analysis. It is standard practice for our technical staff to cease transmissions whenever maintenance is performed in close proximity to antenna reflector regions with potentially hazardous power density levels. Based on the results (see attached page entitled "Radiation Hazard Calculations") and our standard practices within our controlled antenna environment, the earth station operators / technicians should not be exposed to radiation levels exceeding 5 mW/cm² power density over a six minute averaging time.

CERTIFICATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this radiation hazard assessment, that I have reviewed the engineering information submitted, and that it is complete and accurate to the best of my knowledge.



David D. Greenidge
Mgr. Remote Ground Systems
DigitalGlobe, Inc.

Radiation Hazard Calculations

DigitalGlobe Fairbanks Earth Station

Antenna Diameter 7.3 m
 Feed-Flange or subreflector diameter 8.25 cm
 Transmit Frequency 2025 Mhz
 Maximum power into antenna feed-flange (watts) 50 W
 Antenna Gain 40.3 dBi
 Antenna aperture efficiency 0.55
 Maximum power into antenna feed (dBm) 46.99 dBm
 EIRP (dBm) 87.29 dBm
 EIRP (watts) 535759.65 W
 Wave length 0.15 m
 Near field extent 89.93 m
 Beginning of far field 215.82 m

Maximum on-axis power density far field	0.09	mW/cm ²	Satisfies MPE Limits
Maximum on-axis power density near field	0.26	mW/cm ²	Satisfies MPE Limits
Maximum on-axis power density transition region	0.26	mW/cm ²	Satisfies MPE Limits
Maximum power density feed-flange	1870.69	mW/cm ²	Potential Hazard
Maximum power density main reflector region	0.24	mW/cm ²	Satisfies MPE Limits
Maximum power density between main reflector and ground	0.12	mW/cm ²	Satisfies MPE Limits

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
DG Consents Sub, Inc.
FAIRBANKS, AK
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
February 27, 2013

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1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the existing earth station demonstrates that the proposed modifications will operate satisfactorily with the common carrier and broadcast microwave environment. Further, there will be no restrictions of its operation due to interference considerations.

2. SUMMARY OF RESULTS

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

3. SUPPLEMENTAL SHOWING

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 02/15/2013.

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
AT&T California
Affiliated Media, Inc. FCC Trust
Alascom Inc
Alaska Public Telecommunications, Inc.
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
CHENA BROADCASTING, LLC
CNG Communications, Inc.
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Channel 2 Broadcasting Co. - KTUU TV
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Coastal Television Broadcasting Company
Cohen, Elana
Cowboys Stadium LP
DCI II, INC.
Direct Broadcast Services, Inc.
GOODYEAR TIRE AND RUBBER COMPANY
GSN New, Inc
Global Microwave Systems Inc
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaiian Telcom, Inc.
Heiden, William
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
MERCURY COMMUNICATIONS
Metro Networks Communications, Inc.

Michigan Bell Telephone Company
Moreen, Steven K
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NSM Surveillance
Navajo Communications Company
NorthWest Suburbs Community Access Corp
Northern Lights Media, Inc.
Ohio Bell Telephone Company
On Scene Video Production
Onboard Images
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
Public Television Communications Center
QUICK LINK CONNECTIONS INC
QWEST CORPORATION
RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Randy Hermes Production
Regulus Media Services, Inc.
Remote Broadcasts, Inc.
SBE Regional Coordinator
Southwestern Bell Telephone L.P.
Speedshotz, Inc
State of Alaska
Total RF Marketing Inc
Unisat, Inc.
United Telephone - Southeast
VERIZON SOUTH INC.
VISION ALASKA I LLC
Verizon California Inc.
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
Village Video Productions Inc
Vyvx, LLC
Westar Satellite Services LP
Western Technical Services
Wexler Video, Inc.
Winged Vision Inc
Wisconsin Bell, Inc.
Wolfe Air Aviation

4. EARTH STATION COORDINATION DATA

This section presents the data pertinent to frequency coordination of the proposed modifications to the earth station that was circulated to all carriers within its coordination contours.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Date: 02/25/2013
Job Number: 130215COMSGE03

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E950499
Licensee Code DBCONS
Licensee Name DG Consents Sub, Inc.

Site Information FAIRBANKS, AK

Venue Name
Latitude (NAD 83) 64° 53' 26.0" N
Longitude (NAD 83) 147° 31' 44.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 215.0 m / 705.4 ft

Link Information

Satellite Type Low Earth Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 3.0°
Azimuth Range 0.0° to 360°
Antenna Centerline (AGL) 6.0 m / 19.7 ft

Antenna Information Transmit - FCC32

Manufacturer Datron
Model 7.3 Meter
Gain / Diameter 40.3 dBi / 7.3 m
3-dB / 15-dB Beamwidth 1.40° / 2.80°

Max Available RF Power (dBW/4 kHz) 10.7
(dBW/MHz) 34.7

Maximum EIRP (dBW/4 kHz) 51.0
(dBW/MHz) 75.0

Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%

Frequency Information Transmit 2.0 GHz

Emission / Frequency Range (MHz)
NON - 68K0G2D / 2042.0 - 2042.0
NON, 68K0G2D, 1M32G1D / 2052.0 - 2052.0
250KFXD - 1M32G1D / 2085.6875 - 2085.6875
NON - 1M32G1D / 2092.6 - 2092.6
250KFXD - 1M32G1D / 2094.896 - 2094.896

Max Great Circle Coordination Distance 534.0 km / 331.8 mi
Precipitation Scatter Contour Radius 610.2 km / 379.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

FAIRBANKS, AK

Licensee Name DG Consents Sub, Inc.
Latitude (NAD 83) 64° 53' 26.0" N
Longitude (NAD 83) 147° 31' 44.0" W
Ground Elevation (AMSL) 215.0 m / 705.4 ft
Antenna Centerline (AGL) 6.0 m / 19.7 ft
Antenna Model Datron 7.3 Meter
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 10.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	3.81	46.32	7.00	534.00
5	3.77	43.06	7.00	534.00
10	3.62	40.00	7.00	534.00
15	3.57	37.36	7.00	534.00
20	3.09	34.77	7.00	534.00
25	2.36	32.42	7.00	534.00
30	2.46	31.44	7.00	534.00
35	2.16	30.77	7.00	534.00
40	2.04	31.00	7.00	534.00
45	2.56	32.55	7.00	534.00
50	2.20	33.90	7.00	534.00
55	1.96	35.95	7.00	534.00
60	1.80	38.53	7.00	534.00
65	1.33	41.30	7.00	534.00
70	1.23	44.65	7.00	534.00
75	1.14	48.23	7.00	534.00
80	1.07	52.02	7.00	534.00
85	0.72	55.83	7.00	534.00
90	0.55	59.86	7.00	534.00
95	0.60	64.04	7.00	534.00
100	0.49	68.24	7.00	534.00
105	0.00	72.44	7.00	534.00
110	0.00	76.78	7.00	534.00
115	0.00	81.14	7.00	534.00
120	0.00	85.52	7.00	534.00
125	0.00	89.91	7.00	534.00
130	0.00	94.30	7.00	534.00
135	0.00	98.68	7.00	534.00
140	0.00	103.04	7.00	534.00
145	0.00	107.38	7.00	534.00
150	0.00	111.69	7.00	534.00
155	0.00	115.95	7.00	534.00
160	0.00	120.15	7.00	534.00
165	0.00	124.27	7.00	534.00
170	0.00	128.29	7.00	534.00
175	0.00	132.18	7.00	534.00
180	0.00	135.91	7.00	534.00
185	0.00	139.42	7.00	534.00

COMSEARCH

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Coordination Values

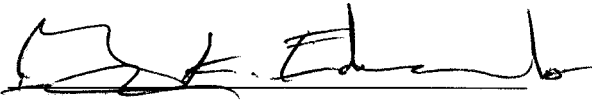
FAIRBANKS, AK

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Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 10.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	142.65	7.00	534.00
195	0.00	145.53	7.00	534.00
200	0.00	147.95	7.00	534.00
205	0.00	149.80	7.00	534.00
210	0.24	150.74	7.00	534.00
215	0.00	151.39	7.00	534.00
220	0.00	151.01	7.00	534.00
225	0.32	149.57	7.00	534.00
230	0.86	147.28	7.00	534.00
235	0.96	144.87	7.00	534.00
240	0.92	142.11	7.00	534.00
245	0.71	139.10	7.00	534.00
250	0.43	135.81	7.00	534.00
255	0.71	131.98	7.00	534.00
260	0.73	128.13	7.00	534.00
265	1.11	124.02	7.00	534.00
270	0.97	120.01	7.00	534.00
275	1.07	115.83	7.00	534.00
280	1.13	111.62	7.00	534.00
285	1.39	107.32	7.00	534.00
290	1.49	103.03	7.00	534.00
295	1.51	98.73	7.00	534.00
300	1.70	94.40	7.00	534.00
305	2.21	90.09	7.00	534.00
310	2.41	85.80	7.00	534.00
315	2.44	81.53	7.00	534.00
320	2.73	77.31	7.00	534.00
325	3.09	73.17	7.00	534.00
330	3.74	69.17	7.00	534.00
335	3.65	65.07	7.00	534.00
340	3.59	61.05	7.00	534.00
345	3.78	57.21	7.00	534.00
350	3.90	53.47	7.00	534.00
355	3.72	49.73	7.00	534.00

5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: February 27, 2013