EXHIBIT A

INTELSAT LICENSE LLC

30-DAY SPECIAL TEMPORARY AUTHORITY REQUEST

EARTH STATION E030051

APRIL 5, 2012

EXHIBIT A

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

Intelsat License LLC
Hagerstown, Maryland

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
April 4, 2012

TABLE OF CONTENTS

1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier 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.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

Company

None

The applicant accepted any unresolved potential interference case in the receive band. No carriers reported potential interference cases.

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.

Expedited coordination data for this earth station was emailed and sent to the below listed carriers with a letter dated April 2, 2012.

Company

ALLEGANY COLLEGE OF MARYLAND
ALLEGANY COUNTY GOVERNMENT
ART Licensing Corp.
AT&T COMMUNICATIONS OF MARYLAND INC
AT&T COMMUNICATIONS OF VIRGINIA INC
AT&T CORP
Aerbender, LLC
Airband Communications Inc
Albermarle, County of, Virginia
Allegheny County
Allentown SMSA Limited Partnership
Alltel Communications LLC-Southern VA
Alltel Communications of Petersburg Inc
Atlantic Broadband (Delmar), LLC
Atlantic Broadband (Penn), LLC
Auburn Data Systems, LLC
BALTIMORE CITY DEPARTMENT OF PUBLIC WORK
BAY BROADBAND COMMUNICATIONS LLC
BLAIR COUNTY 911
Baltimore County of Maryland
Baltimore Gas and Electric Company
Bedford, County of
Believe Wireless, LLC
Berks, County of
Blaze Broadband
Blue Ridge Carriers
Bucks, County of
Buggs Island Telephone Cooperative, Inc.
CAMDEN COUNTY
CHESTER, COUNTY OF
CROWN COMMUNICATION, INC.
Cambria, County of
Cape May County Municipal Utilities Auth
Cape May County, MIS Department

Company (Continued)

Cellco Partnership - Bridgeville, PA
Cellco Partnership - Southern Virginia
Cellco Partnership- PA Region
Cellco Partnership-Newark-Dallas Verizon
Cellco Prtnrshp - Phil. Tri-State Rgn
Central Virginia Electric Cooperative
Chesterfield, County of
City of Laurel
City of Ocean City, MD
Clearwire Spectrum Holdings II, LLC
Clearwire Spectrum Holdings III, LLC
Clearwire Spectrum Holdings LLC
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Conterra Ultra Broadband, LLC
Coralinks
County of Burlington
County of Nelson
County of Stafford
Cumberland, County of
D&E Communications, Inc.
DAUPHIN COUNTY EMERGENCY MANAGEMENT
DELAWARE STATE - DTI
ECW Wireless, LLC
Eastern Energy Transport LLC
Eduro Networks LLC
Enoch Pratt Free Library
Exelon Generation Company, L.L.C
FELHC, Inc.
FiberTower Network Services Corp.
First State Communications LLC
Franklin County Dept. of Emergency Servi
Frederick County
Fundamental Broadcasting LLC
GEORGE MASON UNIVERSITY INSTR FNDTION
GETWIRELESS.NET
GREATER PHILADELPHIA RADIO INC
Garden State Transmissions
Globecomm Systems, Inc.
Gloucester Township
Greene, County of (PA)
HENRICO COUNTY
Hanover, County of
Hardy Cellular Telephone Company
Harrisonburg-Rockingham ECC
High Voltage Communications LLC
Huntingdon County of
INDIANA COUNTY

Company (Continued)

JEFFERSON COUNTY OF PENNSYLVANIA
Jefferson Microwave, LLC
Jubatus, LLC
Juniata County Emergency Services
Kent County Levy Court
King George County
Kryptic Technologies
LACKAWANNA COMMUNICATIONS
LANCASTER COUNTY OF
LOWER SHORE BROADBAND COOPERATIVE
LYCOMING COUNTY
Last Mile Inc.
Lehigh, County of
Loudoun County Public Schools
Loudoun Wireless LLC
Loudoun, County of
M&T Bank
MAHANTANGO MOUNTAIN MICROWAVE
MB Microwave, LLC
MCI Communications Services Inc.
METROPOLITAN AREA NETWORKS, INC.
MIT LINCOLN LABORATORY
MVC Research. LLC
Maryland Port Administration
Maryland Public Broadcasting Commission
Maryland State Highway Administration
Maryland, State of - Dept.of Info & Tech
Middle East Broadcasting Networks, Inc.
Mifflin County
Millersburg Area School District
Mobile Satellite Communications Inc
Montgomery, County of
NEW JERSEY STATE DEPT OF TRANSPORTATION
NOROC Broadband LLC
National Radio Astronomy Observatory
Netrepid, Inc.
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - AL, MS,
New Cingular Wireless PCS LLC - DC
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC- DE/NH/RI
New Cingular Wireless PCS LLC- WV/NC/SC
New Cingular Wireless PCS of PA LLC
New Cingular Wireless PCS, LLC - PA
New Cingular Wireless PCS, LLC - VA
New Jersey State Police
New Jersey Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
Newgig Networks, LLC
Nextlink Wireless, LLC
Northern Virginia Electric Cooperative

Company (Continued)

PENNSYLVANIA MICROWAVE NETWORK INC.
PENNSYLVANIA TURNPIKE COMMISSION
Peco Energy Company
Philly Sports Wireless
Pitt Power
Pittsburgh, City of (PA)
Pontis Communications, Inc.
Port Networks, LLC
Posen Pipeline Properties
Public Broadcasting Service
QUALCOMM INC.
RADIO ONE, INC - MD
RAYTHEON COMPANY
Radio One, Inc
RapidDSL & Wireless, Inc.
Roadstar Internet, Inc.
Rural Broadband Network Services LLC
SCHUYLKILL, COUNTY OF
SCTF NET
SECOM NET
SOMERSET COUNTY
SOUTHEASTERN PENNSYLVANIA TRANSIT AUTH
SW Networks
Salem County Information Technology
Shenandoah Personal Communications Co
Somerset County, Maryland
Sprint Spectrum, LP
State of Maryland, MIEMSS
State of WV DHHR/BPH STECS
Sussex County Council
Synergy Telecommunications Corp
TOWNSQUARE MEDIA ATLANTIC CITY LICENSE,
TRF SERVICES LLC
Telecom Transport Management, Inc
Thought Transmissions, LLC
Turtle Networks 6384
Turtle Networks 6386
UNION, COUNTY OF
UNIVERSITY OF MARYLAND
USCOC of Cumberland, Inc.
USCOC of Virginia RSA #3, Inc.
Velox Networks LLC
Verizon Maryland, Inc.
Verizon New Jersey, Inc.
Verizon Virginia, Inc.
Verizon Wireless VAW LLC-Southern VA
Virginia Broadband, LLC
Virginia Electric & Power Company
Virginia RSA #7, Inc.
Virginia Tech Foundation , Inc.

Company (Continued)

WASHINGTON SUBURBAN SANITARY COMMISSION
WEST VIRGINIA RADIO CORPORATION
WHYY, INC.
WICOMICO BOARD OF EDUCATION
WPNT, Inc.
Warrenton Fauquier Joint Communications
Washington Gas Light Company
Webline Holdings LLC
West Virginia PCS Alliance, L.C.
Western PA Internet Access, Inc.
Wireless Backhaul Infrastructure, LLC
Wireless Internetwork LLC
World Class Wireless LLC
York County Dept of Emergency Services
Zen Networks, Inc
iSignal

4. EARTH STATION COORDINATION DATA

This section presents the data pertinent to frequency coordination of the proposed 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: 04/04/2012
Job Number: 120402COMSJC21

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	INTELS
Licensee Name	Intelsat License LLC

Site Information — HAGERSTOWN, MARYLAND

Venue Name	MTN K-02
Latitude (NAD 83)	39° 35' 56.0" N
Longitude (NAD 83)	77° 45' 18.0" W
Climate Zone	A
Rain Zone	2
Ground Elevation (AMSL)	166.42 m / 546.0 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	16° W to 139° West Longitude
Azimuth Range	108.9° to 250.7°
Corresponding Elevation Angles	12.9° / 13.3°
Antenna Centerline (AGL)	7.32 m / 24.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	Vertex/RSI	Vertex/RSI
Model	11.1 KPK	11.1 KPK
Gain / Diameter	60.3 dBi / 11.1 m	62.0 dBi / 11.1 m
3-dB / 15-dB Beamwidth	0.15° / 0.32°	0.13° / 0.27°

		13M0F2D	56K0G7W to 36M0G7W	
Max Available RF Power	(dBW/4 kHz)	-14.0	-14.0	-14.0
	(dBW/MHz)	10.0	-2.5	10.0
Maximum EIRP	(dBW/4 kHz)	48.0	48.0	48.0
	(dBW/MHz)	72.0	59.5	72.0
	(dBW)	83.1	59.5	87.5

Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%

Frequency Information

	Receive 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	56K0G7W - 36M0G7W / 10950.0 - 11200.0	13M0F2D / 14000.0 - 14500.0
	56K0G7W - 36M0G7W / 11450.0 – 12200.0	56K0G7W - 36M0G7W / 14000.0 - 14500.0
Max Great Circle Coordination Distance	302.1 km / 187.7 mi	155.2 km / 96.5 mi
Precipitation Scatter Contour Radius	518.0 km / 321.9 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values	**HAGERSTOWN, MD**			
Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	39° 35' 56.0" N			
Longitude (NAD 83)	77° 45' 18.0" W			
Ground Elevation (AMSL)	166.42 m / 546.0 ft			
Antenna Centerline (AGL)	7.32 m / 24.0 ft			
Antenna Model	Vertex/RSI 11.1 KPK			
Antenna Mode	Receive 11.0 GHz		Transmit 14.0 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power			-14.0 (dBW/4 kHz)	

			Receive 11.0 GHz		Transmit 14.0 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.37	108.44	-10.00	215.75	-10.00	102.98
5	0.23	103.56	-10.00	228.62	-10.00	113.61
10	0.37	98.69	-10.00	215.75	-10.00	102.98
15	0.22	93.81	-10.00	228.94	-10.00	113.87
20	0.25	88.93	-10.00	226.77	-10.00	112.11
25	0.24	84.05	-10.00	227.66	-10.00	112.83
30	0.00	79.19	-10.00	231.37	-10.00	115.80
35	0.00	74.32	-10.00	231.37	-10.00	115.80
40	0.22	69.44	-10.00	229.25	-10.00	114.11
45	0.00	64.61	-10.00	231.37	-10.00	115.80
50	0.00	59.77	-10.00	231.37	-10.00	115.80
55	0.00	54.95	-10.00	231.37	-10.00	115.80
60	0.00	50.16	-10.00	231.37	-10.00	115.80
65	0.00	45.39	-9.42	233.90	-9.42	117.24
70	0.00	40.67	-8.23	239.28	-8.23	120.23
75	0.00	36.00	-6.91	245.56	-6.91	123.57
80	0.00	31.43	-5.43	252.67	-5.43	127.35
85	0.00	26.99	-3.78	260.92	-3.78	130.39
90	0.00	22.76	-1.93	270.50	-1.93	135.48
95	0.00	18.89	0.10	281.42	0.10	141.53
100	0.00	15.64	2.14	292.92	2.14	148.14
105	0.00	13.48	3.76	299.44	3.76	153.71
110	0.00	12.95	4.19	302.11	4.19	155.24
115	0.00	14.25	3.15	295.77	3.15	151.58
120	0.00	16.96	1.26	287.92	1.26	145.23
125	0.00	20.41	-0.75	276.81	-0.75	138.95
130	0.00	23.83	-2.43	267.88	-2.43	134.07
135	0.00	27.11	-3.83	260.67	-3.83	130.26
140	0.00	30.23	-5.01	254.75	-5.01	128.44
145	0.00	33.14	-6.01	249.87	-6.01	125.87
150	0.00	35.82	-6.85	245.83	-6.85	123.72
155	0.00	38.20	-7.55	242.41	-7.55	121.94
160	0.00	40.26	-8.12	239.78	-8.12	120.50
165	0.00	41.93	-8.56	237.77	-8.56	119.39
170	0.00	43.16	-8.88	236.35	-8.88	118.60
175	0.00	43.92	-9.07	235.50	-9.07	118.13
180	0.00	44.18	-9.13	235.21	-9.13	117.97
185	0.00	43.92	-9.07	235.50	-9.07	118.13

COMSEARCH

Earth Station Data Sheet

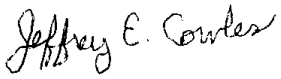
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

Coordination Values	**HAGERSTOWN, MD**			
Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	39° 35' 56.0" N			
Longitude (NAD 83)	77° 45' 18.0" W			
Ground Elevation (AMSL)	166.42 m / 546.0 ft			
Antenna Centerline (AGL)	7.32 m / 24.0 ft			
Antenna Model	Vertex/RSI 11.1 KPK			
Antenna Mode	Receive 11.0 GHz		Transmit 14.0 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power			-14.0 (dBW/4 kHz)	

			Receive 11.0 GHz		Transmit 14.0 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	43.16	-8.88	236.35	-8.88	118.60
195	0.00	41.93	-8.56	237.77	-8.56	119.39
200	0.00	40.26	-8.12	239.78	-8.12	120.50
205	0.00	38.20	-7.55	242.41	-7.55	121.94
210	0.00	35.81	-6.85	245.83	-6.85	123.72
215	0.00	33.14	-6.01	249.87	-6.01	125.87
220	0.00	30.22	-5.01	254.75	-5.01	128.44
225	0.31	26.88	-3.74	249.93	-3.74	123.14
230	0.22	23.67	-2.36	266.08	-2.36	132.54
235	0.29	20.21	-0.64	268.02	-0.64	131.64
240	0.32	16.77	1.39	275.88	1.39	134.83
245	0.33	14.15	3.23	285.25	3.23	139.53
250	0.35	12.96	4.18	288.62	4.18	140.73
255	0.40	13.58	3.68	280.51	3.68	134.89
260	0.40	15.84	2.01	271.02	2.01	130.06
265	0.34	19.19	-0.07	265.21	-0.07	129.91
270	0.29	23.12	-2.10	260.36	-2.10	129.01
275	0.33	27.34	-3.92	246.99	-3.92	121.08
280	0.29	31.80	-5.56	243.16	-5.56	120.24
285	0.00	36.47	-7.05	244.90	-7.05	123.22
290	0.00	41.12	-8.35	238.73	-8.35	119.92
295	0.00	45.83	-9.53	233.44	-9.53	116.97
300	0.20	50.55	-10.00	230.91	-10.00	115.44
305	0.32	55.33	-10.00	219.73	-10.00	106.33
310	0.21	60.16	-10.00	230.29	-10.00	114.95
315	0.00	65.02	-10.00	231.37	-10.00	115.80
320	0.00	69.86	-10.00	231.37	-10.00	115.80
325	0.00	74.71	-10.00	231.37	-10.00	115.80
330	0.29	79.56	-10.00	222.73	-10.00	108.81
335	0.30	84.43	-10.00	221.83	-10.00	108.07
340	0.30	89.30	-10.00	221.73	-10.00	107.99
345	0.25	94.17	-10.00	226.48	-10.00	111.88
350	0.27	99.04	-10.00	225.04	-10.00	110.71
355	0.28	103.91	-10.00	224.12	-10.00	109.96

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.



Jeffrey E. Cowles
Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Va. 20147

DATED: April 4, 2012

EXHIBIT B

INTELSAT LICENSE LLC

30-DAY SPECIAL TEMPORARY AUTHORITY REQUEST

EARTH STATION E030051

APRIL 5, 2012

FCC 312

Schedule B

Page 1: Location

EXHIBIT B

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
Technical and Operational Description)

(Place an "X" in one of the blocks below)

☐ License of New Station ☐ Registration of new Domestic Receive-Only Station ☐ Amendment to a Pending Application ☒ Modification of License/Registration ☐ Notification of Minor Modification

B1. Location of Earth Station Site. If temporary-fixed, mobile, or VSAT remote facility, specify area of operation and point of contact. If VSAT hub station, give its location For VSAT networks attach individual Schedule B, Page 1 sheets for each hub station and each remote station. Individually provide the Location, Points of Communications, and Destination Points for each hub and remote station.

B1a. Station Call Sign	B1b. Site identifier (HUB, REMOTE1, etc.)	B1c. Telephone Number	B1j. Geographic Coordinates N/S, Deg. - Min. - Sec. - E/W	B1k. Lat./Lon. Coordinates are:
E030051		240.527.6595	Lat. 39° 35' 56.3" N Lon. 77° 45' 17.9" W	☐ NAD-27 ☒ NAD-83
B1d. Mailing Street Address of Station or Area of Operation		B1e. Name of Contact Person		
17625 technology bvd, Hagerstown Washington MD				

B1f. City	B1g. County	B1h. State	B1i. Zip Code	B1l. Site Elevation (AMSL)
Hagerstown	Washington	MD	21740	164.9 meters

B2. Points of Communications: List the names and orbit locations of all satellites with which this earth station will communicate. The entry "ALSAT" is sufficient to identify the names and locations of all satellite facilities licensed by the U.S. All non-U.S. licensed satellites must be listed individually.

Satellite Name and Orbit Location	Satellite Name and Orbit Location	Satellite Name and Orbit Location
T11N @ 322.5E		

B3. Destination points for communications using non-U.S. licensed satellites. For each non-U.S. licensed satellite facility identified in section B2 above, specify the destination point(s) (countries) where the services will be provided by this earth station via each non-U.S. license satellite system. Use additional sheets as needed.

Satellite Name	List of Destination Points

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

B4. Earth Station Antenna Facilities: Use additional pages as needed.

(a) Site ID*	(b) Antenna ID**	(c) Quantity	(d) Manufacturer	(e) Model	(f) Antenna Size (meters)	(g) Antenna Gain Transmit and/or Receive (_____dBi at_____GHz)
		1	Vertex RSI	KPK	11.1	60.3 dBi at 11.1 GHz
						62 dBi at 14 GHz

B5. Antenna Heights and Maximum Power Limits: (The corresponding Antenna ID in tables B4 and B5 applies to the same antenna)

(a) Antenna ID**	(b) Antenna Structure Registration No.	Maximum Antenna Height (c) Above Ground Level (meters)	Maximum Antenna Height (d) Above Mean Sea Level (meters)	(e) Building Height Above Ground Level (meters)***	(f) Maximum Antenna Height Above Rooftop (meters)***	(g) Total Input Power at antenna flange (Watts)	(h) Total EIRP for all carriers (dBW)
		7.32	172.2			750	90.7

Notes: * If this is an application for a VSAT network, identify the site (Item B1b, Schedule B, Page 1) where each antenna is located. Also include this Site-ID on Schedule B, Page 5.
** Identify each antenna in VSAT network or multi-antenna station with a unique identifier, such as HUB, REMOTE1, A1, A2, 10M, 12M, 7M, etc. Use this same antenna ID throughout tables B4, B5, B6, and B7 when referring to the same antenna.
*** Attach sketch of site or exemption, See 47 CFR Part 17.

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

B6. Frequency Coordination Limits: Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) Range of Satellite Arc Eastern Limit**	(d) Range of Satellite Arc Western Limit**	(e) Antenna Elevation Angle Eastern Limit	(f) Antenna Elevation Angle Western Limit	(g) Earth Station Azimuth Angle Eastern Limit	(h) Earth Station Azimuth Angle Western Limit	(i) Maximum EIRP Density toward the Horizon (dBW/4kHz)
	13750 -14000	37.5W	37.5W	28.4	28.4	127.0°	127.0°	-17
	10950-11200	37.5W	37.5W	28.4	28.4	127.0°	127.0°	
	11450-12200	37.5W	37.5W	28.4	28.4	127.0°	127.0°	

Notes: * Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and orbital arc range is associated.
** If operating with geostationary satellites, give the orbital arc limits and the associated elevation and azimuth angles. If operating with non-geostationary satellites, give the notation "NON-GEO" for the satellite arc and give the minimum operational elevation angle and the maximum azimuth angle range.

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

B7. Particulars of Operation (Full particulars are required for each r.f. carrier): Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) T/R Mode **	(d) Antenna Polarization (H,V,L,R)	(e) Emission Designator	(f) Maximum EIRP per Carrier (dBW)	(g) Maximum EIRP Density per Carrier (dBW/4kHz)	(h) Description of Modulation and Services
	13750-14000	T	R,L,V,H	13M0G7W	73	37.9	Digital voice, video and data services
	10950-11200	R	R,L,V,H	13M0G7W			Digital voice, video and data services
	11450-12200	R	R,L,V,H	13M0G7W			Digital voice, video and data services

Notes: * Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and emission is associated. For VSAT networks, include frequencies and emissions for all HUB and REMOTE units.

** Indicate whether the earth station transmits or receives in each frequency band.

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

If VSAT Network, provide the SITE-ID (Item B1b) of the station that B8-B13 are in response to (HUB, REMOTE1, etc.): _____

B8. 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 measurements? If NO, provide as an exhibit, a technical analysis showing compliance with two-degree spacing policy.	☒ **YES**	☐ **NO**
B9. 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 measurement?	☐ **YES**	☐ **NO**
B10. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	☐ **YES**	☒ **NO**

Remote Control Point Location:

B10a. Street Address			
B10b. City	B10c. County	B10.d. State/Country	B10e. Zip Code
B10f. Telephone Number	B10g. Call Sign of Control Station (if appropriate)		

B11. Is frequency coordination required? If YES, attach a frequency coordination report as an exhibit.	☒ **YES**	☐ **NO**
B12. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as an exhibit.	☐ **YES**	☒ **NO**
B13. FAA Notification - (See 47 CFT Part 17and 47 CFT 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 CFT PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION**	☐ **YES**	☒ **NO**

EXHIBIT C

INTELSAT LICENSE LLC

30-DAY SPECIAL TEMPORARY AUTHORITY REQUEST

EARTH STATION E030051

APRIL 5, 2012

FAA Notification Not Required

Per Section17.14 (a) of the FCC's rules, FAA notification is not required, as the antenna structure is located in an area with structures of equal or greater heights.

EXHIBIT D

INTELSAT LICENSE LLC

30-DAY SPECIAL TEMPORARY AUTHORITY REQUEST

EARTH STATION E030051

APRIL 5, 2012

Analysis of Non-Ionizing Radiation for a 11.1-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 11.1-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&O specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	0.2
300-1500	Frequency (MHz)*(0.8/1200)
1500-100,000	1.0

Table 2. Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	1.0
300-1500	Frequency (MHz)*(4.0/1200)
1500-100,000	5.0

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

Parameter	Symbol	Formula	Value	Units
Antenna Diameter	D	Input	11.1	m
Antenna Surface Area	$A_{surface}$	$\pi D^2 / 4$	96.77	m^2
Subreflector Diameter	D_{sr}	Input	122.0	cm
Area of Subreflector	A_{sr}	$\pi D_{sr}^2/4$	11689.87	cm^2
Frequency	F	Input	14250	MHz
Wavelength	λ	300 / F	0.021053	m
Transmit Power	P	Input	750.00	W
Antenna Gain (dBi)	G_{es}	Input	62.0	dBi
Antenna Gain (factor)	G	$10^{Ges/10}$	1584893.2	n/a
Pi	π	Constant	3.1415927	n/a
Antenna Efficiency	η	$G\lambda^2/(\pi^2D^2)$	0.58	n/a

1. Far Field Distance Calculation

The distance to the beginning of the far field can be determined from the following equation:

Distance to the Far Field Region $R_{ff} = 0.60\ D^2 / \lambda$ (1)
$= 3511.5$ m

The maximum main beam power density in the far field can be determined from the following equation:

On-Axis Power Density in the Far Field $S_{ff} = G\ P / (4\ \pi\ R_{ff}^2)$ (2)
$= 7.671\ W/m^2$
$= 0.767\ mW/cm^2$

2. Near Field Calculation

Power flux density is considered to be at a maximum value throughout the entire length of the defined Near Field region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the boundary of the Near Field region, the power density from the antenna decreases linearly with respect to increasing distance.

The distance to the end of the Near Field can be determined from the following equation:

Extent of the Near Field $R_{nf} = D^2 / (4\ \lambda)$ (3)
$= 1463.1$ m

The maximum power density in the Near Field can be determined from the following equation:

Near Field Power Density $S_{nf} = 16.0\ \eta\ P / (\pi\ D^2)$ (4)
$= 17.908\ W/m^2$
$= 1.791\ mW/cm^2$

3. Transition Region Calculation

The Transition region is located between the Near and Far Field regions. The power density begins to decrease linearly with increasing distance in the Transition region. While the power density decreases inversely with distance in the Transition region, the power density decreases inversely with the square of the distance in the Far Field region. The maximum power density in the Transition region will not exceed that calculated for the Near Field region. The power density calculated in Section 1 is the highest power density the antenna can produce in any of the regions away from the antenna. The power density at a distance R_t can be determined from the following equation:

Transition Region Power Density $S_t = S_{nf}\ R_{nf} / R_t$ (5)
$= 1.791\ mW/cm^2$

4. Region between the Main Reflector and the Subreflector

Transmissions from the feed assembly are directed toward the subreflector surface, and are reflected back toward the main reflector. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the subreflector and the reflector surfaces can be calculated by determining the power density at the subreflector surface. This can be determined from the following equation:

Power Density at the Subreflector

$$S_{sr} = 4000\ P / A_{sr} \quad (6)$$
$$= 256.633\ mW/cm^2$$

5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the subreflector. The area is now the area of the main reflector aperture and can be determined from the following equation:

Power Density at the Main Reflector Surface

$$S_{surface} = 4\ P / A_{surface} \quad (7)$$
$$= 31.002\ W/m^2$$
$$= 3.100\ mW/cm^2$$

6. Region between the Main Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

Power Density between Reflector and Ground

$$S_g = P / A_{surface} \quad (8)$$
$$= 7.750\ W/m^2$$
$$= 0.775\ mW/cm^2$$

7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm^2)		Hazard Assessment
1. Far Field (R_{ff} = 3511.5 m)	S_{ff}	0.767	Satisfies FCC MPE
2. Near Field (R_{nf} = 1463.1 m)	S_{nf}	1.791	Potential Hazard
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	1.791	Potential Hazard
4. Between Main Reflector and Subreflector	S_{sr}	256.633	Potential Hazard
5. Main Reflector	$S_{surface}$	3.100	Potential Hazard
6. Between Main Reflector and Ground	S_g	0.775	Satisfies FCC MPE

Table 5. Summary of Expected Radiation levels for Controlled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm^2)		Hazard Assessment
1. Far Field (R_{ff} = 3511.5 m)	S_{ff}	0.767	Satisfies FCC MPE
2. Near Field (R_{nf} = 1463.1 m)	S_{nf}	1.791	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	1.791	Satisfies FCC MPE
4. Between Main Reflector and Subreflector	S_{sr}	256.633	Potential Hazard
5. Main Reflector	$S_{surface}$	3.100	Satisfies FCC MPE
6. Between Main Reflector and Ground	S_g	0.775	Satisfies FCC MPE

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.

8. Conclusions

Based upon the above analysis, it is concluded that harmful levels of radiation may exist in those regions noted for the Uncontrolled (Table 4) Environment.

The antenna will be installed at Intelsat License LLC's teleport facility in Hagerstown, Maryland. The teleport is a gated and fenced facility with secured access in and around the proposed antenna. The earth station will be marked with the standard radiation hazard warnings, as well as the area in the vicinity of the earth station to inform those in the general population, who might be working or otherwise present in or near the direct path of the main beam.

The applicant will ensure that the main beam of the antenna will be pointed at least one diameter away from any building, or other obstacles in those areas that exceed the MPE levels. Since one diameter removed from the center of the main beam the levels are down at least 20 dB, or by a factor of 100, these potential hazards do not exist for either the public, or for earth station personnel.

Finally, the earth station's operating personnel will not have access to areas that exceed the MPE levels, while the earth station is in operation. The transmitter will be turned off during periods of maintenance, so that the MPE standard of 5.0 mw/cm**2 will be complied with for those regions in close proximity to the main reflector, which could be occupied by operating personnel.

The applicant agrees to abide by the conditions specified in Condition 5208 provided below:

> *Condition 5208 - The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for worker.*

EXHIBIT E

INTELSAT LICENSE LLC

30-DAY SPECIAL TEMPORARY AUTHORITY REQUEST

EARTH STATION E030051

APRIL 5, 2012

Exhibit E

Intelsat License LLC
Hagerstown, Maryland
Vertex/RSI 11.1 Meter KPK Earth Station

Compliance with FCC Report & Order (FCC 96-377) for the 13.75 - 14.0 GHz Band
Analysis and Calculations

1. Background

This exhibit is presented to demonstrate the extent to which the proposed Intelsat License LLC satellite earth station, to be located in Hagerstown, Maryland, is in compliance with FCC Report & Order 96-377. The potential interference from the earth station to U.S. Navy shipboard radiolocation operations (RADAR) and the NASA space research activities in the 13.75 - 14.0 GHz band is addressed in this exhibit. The parameters for the earth station are:

Table 1. Earth Station Characteristics

- Coordinates (NAD83): 39° 35' 56.3" N, 77° 45' 17.9" W
- Satellite Location for Earth Station: 37.5° WL (Telstar 11N)
- Frequency Band: 13.75-14.0 GHz for uplink
- Polarizations: Linear
- Emissions: 13M0G7W
- Modulation: Digital
- Maximum Uplink EIRP: 73.0 dBW
- Transmit Antenna Characteristics
  - Antenna Size: 11.1 meters in Diameter
  - Antenna Type/Model: Vertex/RSI
  - Gain: 62.0 dBi
- RF power into Antenna Flange: 11.0 dBW or -0.1 dBW/ MHz
  or -24.1 dBW/4 kHz (Maximum)

- Minimum Elevation Angles:
  Hagerstown, Md. 28.4° @ 127.0° Az. (Telstar-11N) at 37.5° WL

- Side Lobe Antenna Gain: 32 - 25*log(θ)

Because the above uplink spectrum is shared with the Federal Government, coordination in this band requires resolution data pertaining to potential interference between the earth station and both Navy and NASA systems. Potential interference from the earth station could impact the Navy and/or NASA systems in two areas. These areas are noted in FCC Report and Order 96-377 dated September 1996, and consist of (1) Radiolocation and radio navigation, (2) Data Relay Satellites.

Summary of Coordination Issues:

1) Potential Impact to Government Radiolocation (Shipboard Radar)
2) Potential Impact to NASA Data Relay Satellite Systems (TDRSS)

2. Potential Impact to Government Radiolocation (Shipboard Radar)

Radiolocation operations (RADAR) may occur anywhere in the 13.4 - 14 GHz frequency band aboard ocean going United States Navy ships. FCC's Report & Order 96-377 allocates the top 250 MHz of this 600 MHz band to the Fixed Satellite Service (FSS) on a co-primary basis with the radiolocation operations and provides for an interference protection level of -167 dBW/m^2/4 kHz.

The closest distance to the shoreline from the Hagerstown earth station is approximately 131 km Southeast toward the Chesapeake Bay. The calculation of the power spectral density at this distance is given below.

1. Clear Sky EIRP: 73.0 dBW
2. Carrier Bandwidth: 13.0 MHz
3. PD at antenna input: -24.1 dBW/4 kHz
4. Transmit Antenna Gain: 62.0 dBi
5. Antenna Gain Horizon: FCC Reference Pattern
6. Antenna Elevation Angle: 28.4°

The proposed earth station will radiate interference toward the ocean according to its off-axis side-lobe performance. A conservative analysis, using FCC standard reference pattern, results in off-axis antenna gains of 3.8 dBi towards the Chesapeake Bay.

The signal density at the shoreline, through free space is:

PFD = Antenna Feed Power density (dBW/4 kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dBw-m^2).

= -24.1 dBW/4 kHz + 3.8 dBi – 10*log[4Π*(131000m)^2]

= -133.6 dBW/m^2/4 kHz + Additional Path Losses (~69.0 dB)

= -202.6 dBW/m^2/4 kHz

Our calculations show additional path loss of approximately 69.0 dB including absorption loss and earth diffraction loss for the actual path profiles from the proposed earth station to the nearest shoreline.

For the 13.0 MHz carriers, the calculated PFD including additional path losses to the closest shoreline location is –202.6 dBW/m^2/4 kHz. This is 35.6 dB below the –167 dBW/m^2/4 kHz interference criteria of R&O 96-377. Therefore, for the 13 MHz emission, there should be no interference to the U.S. Navy RADAR from the Hagerstown earth station due to the distance and the terrain blockage between the site and the shore.

3. Potential Impact to NASA's Data Relay Satellite System (TDRSS)

The geographic location of the Intelsat License LLC earth station in Hagerstown, Maryland is outside the 390 km radius coordination contour surrounding NASA's White Sands, New Mexico ground station complex. Therefore, the TDRSS space-to-earth link will not be impacted by the Intelsat License LLC earth station in Hagerstown, Maryland.

The TDRSS space-to-space link in the 13.772 to 13.778 GHz band is assumed to be protected if an earth station produces an EIRP less than 71 dBW/6 MHz in this band. The 11.1 meter earth station dish will have an EIRP less than 71 dBW/6 MHz in this band. The total EIRP for the 13 MHz emissions is 73.0 dBW, and the equivalent EIRP per 6 MHz segment will be 70.8 dBW/6 MHz. Therefore, there will be no interference to the TDRSS space-to-space link (Table 1).

4. Coordination Issue Result Summary and Conclusions

The results of the analysis and calculations performed in this exhibit indicate that compatible operation between the earth station at the Hagerstown facility and the U.S. Navy and NASA systems space-to-earth link are possible. These analyses have been based on the assumption of 13 MHz bandwidth carriers. Operations in NASA systems space-to-space link (13772.0 to 13778.0 MHz) will not be permitted.

Table 1

Excluded Frequency Range for Intelsat License LLC Earth Station

System	Frequency Restriction
TDRSS	13.770-13.780 GHz (see Note 1)

Note 1: In order to meet the 71 dBW/6 MHz interference criteria, the earth station would have to be limited to a maximum total EIRP of 73.1 dBW.

No interference to U.S. Navy RADAR or NASA TDRSS systems space-to-earth link operations from the Hagerstown, Maryland earth station will occur.