

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Globecomm License Sub LLC
Laurel, Maryland
(Call Sign: E010177)
(GSM-2)**

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
December 28, 2015

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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.

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 June 27, 2015.

Company

AT&T Corporation
Firstlevel Networks
MCI Communications Services Inc.
Open Line Communications
Adams County Department of Emergency Svc
Allfirst Bank
Anne Arundel, County of
Appalachia Engineering Services
BAY BROADBAND COMMUNICATIONS LLC
Baltimore County of Maryland
Baltimore Gas and Electric Company
CBS Communication Services Inc
Calvert Cliffs Nuclear Power Plant
Calvert, County of
Capital Communications of America
Carroll, County of
Cellco Partnership - Southern Virginia
Chester, County of
Columbia Gas Transmission Corporation
Commonwealth of Pennsylvania
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Conectiv Communications, Inc.
County of Culpeper
DAUPHIN COUNTY EMERGENCY MANAGEMENT
Delaware Division of Communications
Delmarva Power and Light Company
ECW Wireless, LLC
Eastern MLG LLC
Egan LLC
Enoch Pratt Free Library
Exelon Generation Company, LLC
FELHC, INC
Franklin County Dept. of Emergency Servi
Fundamental Broadcasting LLC
George Washington University

Hardy Cellular Telephone Company
Howard, County of
Lancaster County-Wide Communications
Loudoun, County of
MARYLAND EMERG MANAGEMENT AGENCY COMM
MARYLAND STATE DEPT OF GENERAL SERVICES
Maryland Public Broadcasting Commission
Maryland State Highway Administration
Maryland, State Of - MDOT-MTA
Maryland, State of - DNR
Maryland, State of - Dept.of Info & Tech
Montgomery, County of
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC-DE/NH/RI
Norfolk Southern Railway
PSEG Services Corporation
Peco Energy Company
Pennsylvania Sports Entertainment Netwo.
Pennsylvania Turnpike Commission
Potomac Electric Power Company
Prince George's County
Prince William, County of
RAPPAHANNOCK ELECTRIC COOPERATIVE
RCYM Holdings LLC
Redi-Call Communications Company
SECOM NET
Spotsylvania, County of
St. Mary's County of (MD)
Stafford, County of
State of Maryland, MIEMSS
Transcontinental Gas Pipeline Corp.
Triangle Communications, Inc.
USCOC of Cumberland, Inc.
Virginia Department of State Police
Virginia Electric & Power Company
WV DHHR BPH, Office of EMS, Com. Div.
Warrenton Fauquier Joint Communications
Washington Gas Light Company
Washington Suburban Sanitary Commission
World Class Wireless, LLC
3G Wireless, LLC
ABC, Inc. - WPVI-TV
AERIAL VIDEO SYSTEMS
Alascom Inc
Anne Arundel, County of
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
C-SPAN
CBS Broadcasting Inc
CBS TELEVISION LICENSES LLC
CNG Communications, Inc.
Carolina Telephone and Telegraph Co
Casper, John

CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Cohen, Elena
County of Fairfax, Virginia
Cowboys Stadium LP
DCI II, INC.
Delaware Division of Communications
Direct Broadcast Services, Inc.
GOODYEAR TIRE AND RUBBER COMPANY
GSN News, 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
NBC Telemundo License LLC
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NSM Surveillance
National Cable Satellite Corporation
Navajo Communications Company
NorthWest Suburbs Community Access Corp
OHIO BELL TELEPHONE COMPANY
Onboard Images
Pacific Bell Tel Com dba AT&T California
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Prince George's County
Production & Satellite Services, Inc.
Proxy Aviation
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.
Southwestern Bell Telephone L.P.
Speedshotz, Inc

The City of Baltimore, Police Department
Total RF Marketing Inc
Unisat, Inc.
United Telephone - Southeast
VERIZON SOUTH INC.
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 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: 07/13/2015
Job Number: 150627COMSJC03

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E010177 (GSM-2)
Licensee Code SWSITE
Licensee Name Globecom License Sub LLC

Site Information LAUREL, MARYLAND

Venue Name
Latitude (NAD 83) 39° 6' 45.5" N
Longitude (NAD 83) 76° 49' 58.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 73.2 m / 240.2 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 31° W to 32° West Longitude
Azimuth Range 121.5° to 122.4°
Corresponding Elevation Angles 24.8° / 25.5°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	Andrew Corporation	Andrew Corporation
Model	9.1 Meter	9.1 Meter
Gain / Diameter	50.7 dBi / 9.1 m	53.9 dBi / 9.1 m
3-dB / 15-dB Beamwidth	0.29° / 0.53°	0.32° / 0.65°

Max Available RF Power	(dBW/4 kHz)	-14.0			
	(dBW/MHz)	10.0			
Maximum EIRP	(dBW/4 kHz)	39.9			
	(dBW/MHz)	63.9			
	(dBW)	60.9			
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.0 GHz
Emission / Frequency Range (MHz)	500KG7D - 36M0G7D / 3700.0 - 4200.0	500KG7D - 36M0G7D / 6425.0 - 6534.0 500KG7D - 36M0G7D / 6576.0 - 6645.0

Max Great Circle Coordination Distance	334.9 km / 208.1 mi	153.4 km / 95.3 mi
Precipitation Scatter Contour Radius	495.7 km / 308.0 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

LAUREL, MD

Licensee Name: Globecom License Sub LLC
Latitude (NAD 83): 39° 6' 45.5" N
Longitude (NAD 83): 76° 49' 58.0" W
Ground Elevation (AMSL): 73.2 m / 240.2 ft
Antenna Centerline (AGL): 5.49 m / 18.0 ft
Antenna Model: Andrew Corporation 9.1 Meter
Antenna Mode: Receive 4.0 GHz / Transmit 6.1 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20% / -154.0 dBW/4 kHz 20%
Short Term: -146.0 dBW/MHz 0.01% / -131.0 dBW/4 kHz 0.0025%
Max Available RF Power: -14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.32	118.39	-10.00	269.86	-10.00	122.62
5	0.34	113.96	-10.00	267.57	-10.00	121.07
10	0.28	109.47	-10.00	275.02	-10.00	126.09
15	0.24	104.97	-10.00	280.45	-10.00	129.68
20	0.00	100.42	-10.00	285.28	-10.00	132.84
25	0.24	95.91	-10.00	279.61	-10.00	129.13
30	0.00	91.36	-10.00	285.28	-10.00	132.84
35	0.00	86.83	-10.00	285.28	-10.00	132.84
40	0.00	82.29	-10.00	285.28	-10.00	132.84
45	0.00	77.77	-10.00	285.28	-10.00	132.84
50	0.00	73.27	-10.00	285.28	-10.00	132.84
55	0.00	68.79	-10.00	285.28	-10.00	132.84
60	0.00	64.34	-10.00	285.28	-10.00	132.84
65	0.00	59.94	-10.00	285.28	-10.00	132.84
70	0.00	55.60	-10.00	285.28	-10.00	132.84
75	0.00	51.34	-10.00	285.28	-10.00	132.84
80	0.00	47.18	-9.84	286.27	-9.84	133.26
85	0.00	43.16	-8.88	292.53	-8.88	134.65
90	0.00	39.31	-7.86	299.25	-7.86	137.52
95	0.00	35.69	-6.81	306.35	-6.81	140.62
100	0.00	32.40	-5.76	314.29	-5.76	143.86
105	0.00	29.53	-4.76	321.42	-4.76	147.09
110	0.00	27.22	-3.87	327.78	-3.87	150.03
115	0.00	25.62	-3.22	332.54	-3.22	152.26
120	0.00	24.88	-2.90	334.88	-2.90	153.37
125	0.00	25.07	-2.98	334.28	-2.98	153.09
130	0.00	26.16	-3.44	330.89	-3.44	151.48
135	0.00	28.06	-4.20	325.38	-4.20	148.91
140	0.21	30.45	-5.09	317.54	-5.09	144.92
145	0.00	33.59	-6.16	310.91	-6.16	142.63
150	0.00	36.91	-7.18	303.86	-7.18	139.53
155	0.00	40.53	-8.19	297.03	-8.19	136.57
160	0.00	44.37	-9.18	290.57	-9.18	133.82
165	0.00	48.38	-10.00	285.28	-10.00	132.84
170	0.00	52.53	-10.00	285.28	-10.00	132.84
175	0.00	56.77	-10.00	285.28	-10.00	132.84
180	0.00	61.09	-10.00	285.28	-10.00	132.84

COMSEARCH

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

Coordination Values

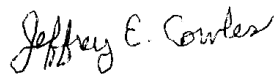
LAUREL, MD

Licensee Name: Globecom License Sub LLC
Latitude (NAD 83): 39° 6' 45.5" N
Longitude (NAD 83): 76° 49' 58.0" W
Ground Elevation (AMSL): 73.2 m / 240.2 ft
Antenna Centerline (AGL): 5.49 m / 18.0 ft
Antenna Model: Andrew Corporation 9.1 Meter
Antenna Mode: Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%
Short Term: -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power: -14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
185	0.00	65.47	-10.00	285.28	-10.00	132.84
190	0.00	69.89	-10.00	285.28	-10.00	132.84
195	0.00	74.35	-10.00	285.28	-10.00	132.84
200	0.00	78.83	-10.00	285.28	-10.00	132.84
205	0.00	83.33	-10.00	285.28	-10.00	132.84
210	0.00	87.84	-10.00	285.28	-10.00	132.84
215	0.00	92.35	-10.00	285.28	-10.00	132.84
220	0.00	96.85	-10.00	285.28	-10.00	132.84
225	0.00	101.35	-10.00	285.28	-10.00	132.84
230	0.00	105.83	-10.00	285.28	-10.00	132.84
235	0.00	110.29	-10.00	285.28	-10.00	132.84
240	0.00	114.71	-10.00	285.28	-10.00	132.84
245	0.24	119.15	-10.00	279.95	-10.00	129.35
250	0.28	123.49	-10.00	275.71	-10.00	126.54
255	0.43	127.80	-10.00	257.57	-10.00	114.19
260	0.42	131.96	-10.00	258.90	-10.00	115.12
265	0.48	136.02	-10.00	251.96	-10.00	110.24
270	0.45	139.88	-10.00	255.43	-10.00	112.69
275	0.42	143.50	-10.00	258.96	-10.00	115.16
280	0.44	146.85	-10.00	256.97	-10.00	113.77
285	0.48	149.82	-10.00	251.79	-10.00	110.13
290	0.36	152.11	-10.00	265.67	-10.00	119.78
295	0.42	153.88	-10.00	259.06	-10.00	115.23
300	0.55	154.90	-10.00	246.55	-10.00	106.46
305	0.59	154.93	-10.00	243.78	-10.00	104.45
310	0.45	153.86	-10.00	255.19	-10.00	112.53
315	0.37	152.04	-10.00	264.18	-10.00	118.76
320	0.47	149.70	-10.00	253.00	-10.00	110.98
325	0.49	146.67	-10.00	250.45	-10.00	109.17
330	0.56	143.24	-10.00	245.74	-10.00	105.88
335	0.49	139.44	-10.00	251.31	-10.00	109.78
340	0.46	135.47	-10.00	254.58	-10.00	112.10
345	0.46	131.36	-10.00	253.71	-10.00	111.49
350	0.38	127.10	-10.00	263.36	-10.00	118.20
355	0.35	122.78	-10.00	266.54	-10.00	120.37

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: December 28, 2015

COMSEARCH

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Prepared for

**Globecomm License Sub LLC
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Expedited coordination data for this earth station was emailed and sent to the below listed carriers with a letter dated June 5, 2015.

Company

AT&T COMMUNICATIONS OF MARYLAND INC
AT&T Corporation
Adams County Department of Emergency Svc
Alltel Communications LLC-Southern VA
Alltel Communications of Petersburg Inc
Appalachia Engineering Services
Argos Engineering, LLC
Atlantic City Electric Company
BAY BROADBAND COMMUNICATIONS LLC
Baltimore County of Maryland
Baltimore Gas and Electric Company
Believe Wireless, LLC
Capital Communications of America
Carroll, County of
Cellco Partnership - Southern Virginia
Cellco Partnership-WDC/Baltimore
Cellco Prtnrshp - Phil. Tri-State Rgn
Charles, County of
Columbia Gas Transmission Corporation
Comprehensive Wireless LLC
Conterra Ultra Broadband, LLC
County of Frederick
County of York
Delaware Division of Communications
Delmarva Broadcasting Company
Delmarva Power and Light Company
ECW Wireless, LLC
Eastern MLG LLC
Enoch Pratt Free Library
Exelon Generation Company, LLC
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Firstlevel Networks
Frederick County
Fundamental Broadcasting LLC

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Company (Continue)

GREAT SCOTT BROADCASTING
Garden State Transmissions
Hardy Cellular Telephone Company
Harrisonburg-Rockingham ECC
Lancaster County-Wide Communications
Loudoun, County of
MCI Communications Services Inc.
MVC Research. LLC
Maryland Public Broadcasting Commission
Maryland State Highway Administration
Maryland, State of - Dept.of Info & Tech
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC- WV/NC/SC
New Cingular Wireless PCS LLC-DE/NH/RI
New Cingular Wireless PCS, LLC - PA
New Jersey, State of -NJ Transit
Norfolk Southern Railway
Old Dominion LLC
Open Line Communications
PA Communications
PEG Bandwidth, LLC
PSEG Services Corporation
Peco Energy Company
Pennsylvania Turnpike Commission
Prince George's County
Prince William, County of
RAPPAHANNOCK ELECTRIC COOPERATIVE
Radio One Inc
Rural Broadband Network Services LLC
SCTF NET
SHENANDOAH VALLEY ELECTRIC COOPERATIVE
Southern Maryland Electric Cooperative I
Spotsylvania, County of
Sprint Spectrum L.P.
St. Mary's County of (MD)
Stafford, County of
State of Maryland, MIEMSS
Texas Eastern Communications, LLC
Thought Transmissions, LLC
USCOC of Cumberland, Inc.
Verizon Maryland, Inc.
Verizon Wireless (VAW) LLC - Delaware/NJ
Verizon Wireless (VAW) LLC - Maryland
Verizon Wireless (VAW) LLC - W/B/V Mkts
Verizon Wireless VAW LLC-Southern VA
Virginia Broadband, LLC
Virginia Department of State Police

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19700 Janelia Farm Boulevard, Ashburn, VA 20147

(703)726-5500 <http://www.comsearch.com>

Virginia Electric & Power Company

Virginia PCS Alliance, L.C.

Company (Continue)

WV DHHR BPH, Office of EMS, Com. Div.

Washington D.C. SMSA L.P.

Washington Gas Light Company

Washington Suburban Sanitary Commission

World Class Wireless, LLC

YAB Mobile

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.

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Site Information LAUREL, MARYLAND

Venue Name
Latitude (NAD 83) 39° 6' 45.5" N
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Rain Zone 2
Ground Elevation (AMSL) 73.2 m / 240.2 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
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Satellite Arc 5° W to 149° West Longitude
Azimuth Range 101.7° to 258.5°
Corresponding Elevation Angles 5.3° / 5.1°
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Gain / Diameter	50.7 dBi / 9.1 m	53.9 dBi / 9.1 m
3-dB / 15-dB Beamwidth	0.50° / 1.00°	0.32° / 0.65°

Max Available RF Power	(dBW/4 kHz)	-16.1			
	(dBW/MHz)	7.9			
Maximum EIRP	(dBW/4 kHz)	37.8			
	(dBW/MHz)	61.8			
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
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Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	51K2G7W - 36M0G7W / 3700.0 - 4200.0	51K2G7W - 36M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	683.3 km / 424.5 mi	280.1 km / 174.0 mi
Precipitation Scatter Contour Radius	618.2 km / 384.1 mi	100.0 km / 62.1 mi

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Max Available RF Power			-16.1 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
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5	0.34	96.67	-10.00	267.57	-10.00	115.53
10	0.28	91.69	-10.00	275.02	-10.00	120.51
15	0.24	86.71	-10.00	280.45	-10.00	124.09
20	0.00	81.73	-10.00	285.28	-10.00	127.24
25	0.24	76.75	-10.00	279.61	-10.00	123.54
30	0.00	71.78	-10.00	285.28	-10.00	127.24
35	0.00	66.81	-10.00	285.28	-10.00	127.24
40	0.00	61.83	-10.00	285.28	-10.00	127.24
45	0.00	56.86	-10.00	285.28	-10.00	127.24
50	0.00	51.89	-10.00	285.28	-10.00	127.24
55	0.00	46.93	-9.79	286.64	-9.79	127.80
60	0.00	41.98	-8.58	294.50	-8.58	131.03
65	0.00	37.03	-7.21	303.62	-7.21	133.45
70	0.00	32.10	-5.66	315.00	-5.66	137.81
75	0.00	27.19	-3.86	327.86	-3.86	143.24
80	0.00	22.31	-1.71	343.63	-1.71	150.22
85	0.00	17.51	0.92	363.69	0.92	159.53
90	0.00	12.84	4.28	389.80	4.28	174.09
95	0.00	8.56	8.69	427.25	8.69	191.11
100	0.00	5.60	13.29	669.53	13.29	273.88
105	0.00	6.28	12.06	510.77	12.06	212.29
110	0.00	9.76	7.26	414.76	7.26	185.61
115	0.00	13.47	3.77	386.24	3.77	172.09
120	0.00	17.12	1.16	365.60	1.16	160.45
125	0.00	20.67	-0.88	349.88	-0.88	153.07
130	0.00	24.12	-2.56	337.37	-2.56	147.41
135	0.00	27.43	-3.96	327.17	-3.96	142.94
140	0.21	30.42	-5.08	317.61	-5.08	138.51
145	0.00	33.53	-6.13	311.06	-6.13	136.45
150	0.00	36.23	-6.98	305.23	-6.98	134.09
155	0.00	38.65	-7.68	300.47	-7.68	133.44
160	0.00	40.74	-8.25	296.65	-8.25	131.90
165	0.00	42.43	-8.69	293.73	-8.69	130.72
170	0.00	43.69	-9.01	291.66	-9.01	129.87
175	0.00	44.46	-9.20	290.43	-9.20	129.37
180	0.00	44.72	-9.26	290.01	-9.26	129.20

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Coordination Values

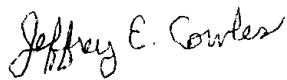
LAUREL, MD

Licensee Name: Globecom License Sub LLC
Latitude (NAD 83): 39° 6' 45.5" N
Longitude (NAD 83): 76° 49' 58.0" W
Ground Elevation (AMSL): 73.2 m / 240.2 ft
Antenna Centerline (AGL): 5.49 m / 18.0 ft
Antenna Model: Andrew Corporation 9.1 Meter
Antenna Mode: Receive 4.0 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20%
Short Term: -146.0 dBW/MHz 0.01%
Transmit 6.1 GHz: -154.0 dBW/4 kHz 20%
-131.0 dBW/4 kHz 0.0025%
Max Available RF Power: -16.1 (dBW/4 kHz)

Azimuth (°)	Receive 4.0 GHz		Transmit 6.1 GHz			
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
185	0.00	44.46	-9.20	290.43	-9.20	129.37
190	0.00	43.69	-9.01	291.66	-9.01	129.87
195	0.00	42.43	-8.69	293.73	-8.69	130.72
200	0.00	40.74	-8.25	296.66	-8.25	131.90
205	0.00	38.65	-7.68	300.47	-7.68	133.44
210	0.00	36.23	-6.98	305.23	-6.98	134.09
215	0.00	33.53	-6.14	311.05	-6.14	136.45
220	0.00	30.58	-5.14	318.72	-5.14	139.36
225	0.00	27.43	-3.96	327.16	-3.96	142.94
230	0.00	24.12	-2.56	337.37	-2.56	147.41
235	0.00	20.67	-0.88	349.87	-0.88	153.06
240	0.00	17.11	1.17	365.61	1.17	160.45
245	0.24	13.31	3.90	381.66	3.90	167.93
250	0.28	9.57	7.48	406.43	7.48	178.36
255	0.43	5.83	12.85	504.72	12.85	203.49
260	0.42	4.89	14.77	683.31	14.77	280.13
265	0.48	7.94	9.51	397.99	9.51	163.77
270	0.45	12.36	4.70	361.44	4.70	148.21
275	0.42	17.10	1.17	337.13	1.17	139.27
280	0.44	21.95	-1.53	314.24	-1.53	131.09
285	0.48	26.84	-3.72	292.07	-3.72	121.33
290	0.36	31.79	-5.56	294.39	-5.56	126.07
295	0.42	36.73	-7.13	276.95	-7.13	117.29
300	0.55	41.68	-8.50	255.50	-8.50	104.90
305	0.59	46.64	-9.72	245.38	-9.72	100.00
310	0.45	51.62	-10.00	255.19	-10.00	107.03
315	0.37	56.60	-10.00	264.18	-10.00	113.23
320	0.47	61.57	-10.00	253.00	-10.00	105.50
325	0.49	66.55	-10.00	250.45	-10.00	103.70
330	0.56	71.53	-10.00	245.74	-10.00	100.43
335	0.49	76.52	-10.00	251.31	-10.00	104.30
340	0.46	81.50	-10.00	254.58	-10.00	106.60
345	0.46	86.49	-10.00	253.71	-10.00	106.00
350	0.38	91.47	-10.00	263.36	-10.00	112.67
355	0.35	96.45	-10.00	266.54	-10.00	114.83

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: December 28, 2015

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FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Globecomm License Sub LLC
Laurel, Maryland
(Call Sign: E010177)
(GSM-3)**

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
December 28, 2015

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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.

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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.

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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 with a letter dated June 27, 2015, and an expedited revised coordination was emailed and sent to the below listed carriers with a letter dated July 22, 2015.

Company

AT&T Corporation
Firstlevel Networks
MCI Communications Services Inc.
Open Line Communications
Adams County Department of Emergency Svc
Allfirst Bank
Anne Arundel, County of
Appalachia Engineering Services
BAY BROADBAND COMMUNICATIONS LLC
Baltimore County of Maryland
Baltimore Gas and Electric Company
BFI Licenses, LLC
CBS Communication Services Inc
Calvert Cliffs Nuclear Power Plant
Calvert, County of
Capital Communications of America
Carroll, County of
Cellco Partnership - Southern Virginia
Chester, County of
Columbia Gas Transmission Corporation
Commonwealth of Pennsylvania
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Conectiv Communications, Inc.
County of Culpeper
DAUPHIN COUNTY EMERGENCY MANAGEMENT
Delaware Division of Communications
Delmarva Power and Light Company
ECW Wireless, LLC
Eastern MLG LLC
Egan LLC
Enoch Pratt Free Library
Exelon Generation Company, LLC

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Company (Continued)

FELHC, INC
Franklin County Dept. of Emergency Servi
Fundamental Broadcasting LLC
George Washington University
Hardy Cellular Telephone Company
Howard, County of
Lancaster County-Wide Communications
Loudoun, County of
MARYLAND EMERG MANAGEMENT AGENCY COMM
MARYLAND STATE DEPT OF GENERAL SERVICES
Maryland Public Broadcasting Commission
Maryland State Highway Administration
Maryland, State Of - MDOT-MTA
Maryland, State of - DNR
Maryland, State of - Dept.of Info & Tech
Montgomery, County of
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC-DE/NH/RI
Norfolk Southern Railway
PSEG Services Corporation
Peco Energy Company
Pennsylvania Sports Entertainment Netwo.
Pennsylvania Turnpike Commission
Potomac Electric Power Company
Prince George's County
Prince William, County of
RAPPAHANNOCK ELECTRIC COOPERATIVE
RCYM Holdings LLC
Redi-Call Communications Company
SECOM NET
Spotsylvania, County of
St. Mary's County of (MD)
Stafford, County of
State of Maryland, MIEMSS
Transcontinental Gas Pipeline Corp.
Triangle Communications, Inc.
USCOC of Cumberland, Inc.
Virginia Department of State Police
Virginia Electric & Power Company
WV DHHR BPH, Office of EMS, Com. Div.
Warrenton Fauquier Joint Communications
Washington Gas Light Company
Washington Suburban Sanitary Commission
World Class Wireless, LLC
3G Wireless, LLC
ABC, Inc. - WPVI-TV
AERIAL VIDEO SYSTEMS
Alascom Inc
Anne Arundel, County of

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Ascent Media Network Services, LLC

Company (Continued)

Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
C-SPAN
CBS Broadcasting Inc
CBS TELEVISION LICENSES LLC
CNG Communications, Inc.
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Cohen, Elena
County of Fairfax, Virginia
Cowboys Stadium LP
CP Communications, LLC
DCI II, INC.
Delaware Division of Communications
Direct Broadcast Services, Inc.
GOODYEAR TIRE AND RUBBER COMPANY
GSN News, 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.
Interlink Network Corp.
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
Loop Inc.
MERCURY COMMUNICATIONS
Metro Networks Communications, Inc.
Metrosat Communications Inc.
Michigan Bell Telephone Company Microwave Video Systems, LLC
Moreen, Steven K
NBC Telemundo License LLC
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NSM Surveillance
National Cable Satellite Corporation
National Football League
Navajo Communications Company

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NorthWest Suburbs Community Access Corp

OHIO BELL TELEPHONE COMPANY

Onboard Images

Company (Continued)

Pacific Bell Tel Com dba AT&T California

Pacific Television Center

Penn Service Microwave Co., Inc.

Plateau Telecommunications, Inc.

Plum TV, LLC

Prince George's County

Production & Satellite Services, Inc.

Proxy Aviation

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

RF Technology

Radiofone, Inc.

Randy Hermes Production

Regulus Media Services, Inc.

Remote Broadcasts, Inc.

Southwestern Bell Telephone L.P.

Speedshotz, Inc

Texas A&M University, Athletic Department

The City of Baltimore, Police Department

Total RF Marketing Inc

Unisat, Inc.

United Telephone - Southeast

VERIZON SOUTH INC.

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

Vitec Broadcast Services, Inc.

Vyvx, LLC

Westar Satellite Services LP

Western Technical Services

Wexler Video, Inc.

Winged Vision Inc

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Wisconsin Bell, Inc.
Wolfe Air Aviation

Society of Broadcast Engineers (SBE) Coordinators

Maryland, Virginia, and District of Columbia:

James Dugan & Mike Rhodes - Maryland (Entire State) and DC Area

Pennsylvania:

Matt Lightner – South Central Region

Otto Schellin - Western/Pittsburgh Region

West Virginia:

Randy Kerbawy – Entire State

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.

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Earth Station Data Sheet

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Date: 07/31/2015
Job Number: 150722COMSJC02

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E010177
Licensee Code SWSITE
Licensee Name Globecom License Sub LLC

Site Information LAUREL, MARYLAND

Venue Name
Latitude (NAD 83) 39° 6' 45.5" N
Longitude (NAD 83) 76° 49' 58.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 73.2 m / 240.2 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 31° W to 32° West Longitude
Azimuth Range 121.5° to 122.4°
Corresponding Elevation Angles 24.8° / 25.5°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	Andrew Corporation	Andrew Corporation
Model	9.3 Meter	9.3 Meter
Gain / Diameter	50.7 dBi / 9.3 m	53.9 dBi / 9.3 m
3-dB / 15-dB Beamwidth	0.29° / 0.53°	0.32° / 0.65°

Max Available RF Power	(dBW/4 kHz)	-14.0			
	(dBW/MHz)	10.0			
Maximum EIRP	(dBW/4 kHz)	39.9			
	(dBW/MHz)	63.9			
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.0 GHz
Emission / Frequency Range (MHz)	500KG7D - 36M0G7D / 3700.0 - 4200.0	500KG7D - 36M0G7D / 6425.0 - 6534.0 500KG7D - 36M0G7D / 6576.0 - 6645.0

Max Great Circle Coordination Distance	334.9 km / 208.1 mi	153.4 km / 95.3 mi
Precipitation Scatter Contour Radius	495.7 km / 308.0 mi	100.0 km / 62.1 mi

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Earth Station Data Sheet

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Coordination Values

LAUREL, MD

Licensee Name	Globecom License Sub LLC				
Latitude (NAD 83)	39° 6' 45.5" N				
Longitude (NAD 83)	76° 49' 58.0" W				
Ground Elevation (AMSL)	73.2 m / 240.2 ft				
Antenna Centerline (AGL)	5.49 m / 18.0 ft				
Antenna Model	Andrew Corporation 9.3 Meter				
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz		
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%	
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%	
Max Available RF Power			-14.0 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.32	118.39	-10.00	269.86	-10.00	122.62
5	0.34	113.96	-10.00	267.57	-10.00	121.07
10	0.28	109.47	-10.00	275.02	-10.00	126.09
15	0.24	104.97	-10.00	280.45	-10.00	129.68
20	0.00	100.42	-10.00	285.28	-10.00	132.84
25	0.24	95.91	-10.00	279.61	-10.00	129.13
30	0.00	91.36	-10.00	285.28	-10.00	132.84
35	0.00	86.83	-10.00	285.28	-10.00	132.84
40	0.00	82.29	-10.00	285.28	-10.00	132.84
45	0.00	77.77	-10.00	285.28	-10.00	132.84
50	0.00	73.27	-10.00	285.28	-10.00	132.84
55	0.00	68.79	-10.00	285.28	-10.00	132.84
60	0.00	64.34	-10.00	285.28	-10.00	132.84
65	0.00	59.94	-10.00	285.28	-10.00	132.84
70	0.00	55.60	-10.00	285.28	-10.00	132.84
75	0.00	51.34	-10.00	285.28	-10.00	132.84
80	0.00	47.18	-9.84	286.27	-9.84	133.26
85	0.00	43.16	-8.88	292.53	-8.88	134.65
90	0.00	39.31	-7.86	299.25	-7.86	137.52
95	0.00	35.69	-6.81	306.35	-6.81	140.62
100	0.00	32.40	-5.76	314.29	-5.76	143.86
105	0.00	29.53	-4.76	321.42	-4.76	147.09
110	0.00	27.22	-3.87	327.78	-3.87	150.03
115	0.00	25.62	-3.22	332.54	-3.22	152.26
120	0.00	24.88	-2.90	334.88	-2.90	153.37
125	0.00	25.07	-2.98	334.28	-2.98	153.09
130	0.00	26.16	-3.44	330.89	-3.44	151.48
135	0.00	28.06	-4.20	325.38	-4.20	148.91
140	0.21	30.45	-5.09	317.54	-5.09	144.92
145	0.00	33.59	-6.16	310.91	-6.16	142.63
150	0.00	36.91	-7.18	303.86	-7.18	139.53
155	0.00	40.53	-8.19	297.03	-8.19	136.57
160	0.00	44.37	-9.18	290.57	-9.18	133.82
165	0.00	48.38	-10.00	285.28	-10.00	132.84
170	0.00	52.53	-10.00	285.28	-10.00	132.84
175	0.00	56.77	-10.00	285.28	-10.00	132.84
180	0.00	61.09	-10.00	285.28	-10.00	132.84

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Coordination Values

LAUREL, MD

Licensee Name	Globecomm License Sub LLC		
Latitude (NAD 83)	39° 6' 45.5" N		
Longitude (NAD 83)	76° 49' 58.0" W		
Ground Elevation (AMSL)	73.2 m / 240.2 ft		
Antenna Centerline (AGL)	5.49 m / 18.0 ft		
Antenna Model	Andrew Corporation 9.3 Meter		
Antenna Mode	Receive 4.0 GHz		
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	Transmit 6.1 GHz -154.0 dBW/4 kHz 20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	-14.0 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
185	0.00	65.47	-10.00	285.28	-10.00	132.84
190	0.00	69.89	-10.00	285.28	-10.00	132.84
195	0.00	74.35	-10.00	285.28	-10.00	132.84
200	0.00	78.83	-10.00	285.28	-10.00	132.84
205	0.00	83.33	-10.00	285.28	-10.00	132.84
210	0.00	87.84	-10.00	285.28	-10.00	132.84
215	0.00	92.35	-10.00	285.28	-10.00	132.84
220	0.00	96.85	-10.00	285.28	-10.00	132.84
225	0.00	101.35	-10.00	285.28	-10.00	132.84
230	0.00	105.83	-10.00	285.28	-10.00	132.84
235	0.00	110.29	-10.00	285.28	-10.00	132.84
240	0.00	114.71	-10.00	285.28	-10.00	132.84
245	0.24	119.15	-10.00	279.95	-10.00	129.35
250	0.28	123.49	-10.00	275.71	-10.00	126.54
255	0.43	127.80	-10.00	257.57	-10.00	114.19
260	0.42	131.96	-10.00	258.90	-10.00	115.12
265	0.48	136.02	-10.00	251.96	-10.00	110.24
270	0.45	139.88	-10.00	255.43	-10.00	112.69
275	0.42	143.50	-10.00	258.96	-10.00	115.16
280	0.44	146.85	-10.00	256.97	-10.00	113.77
285	0.48	149.82	-10.00	251.79	-10.00	110.13
290	0.36	152.11	-10.00	265.67	-10.00	119.78
295	0.42	153.88	-10.00	259.06	-10.00	115.23
300	0.55	154.90	-10.00	246.55	-10.00	106.46
305	0.59	154.93	-10.00	243.78	-10.00	104.45
310	0.45	153.86	-10.00	255.19	-10.00	112.53
315	0.37	152.04	-10.00	264.18	-10.00	118.76
320	0.47	149.70	-10.00	253.00	-10.00	110.98
325	0.49	146.67	-10.00	250.45	-10.00	109.17
330	0.56	143.24	-10.00	245.74	-10.00	105.88
335	0.49	139.44	-10.00	251.31	-10.00	109.78
340	0.46	135.47	-10.00	254.58	-10.00	112.10
345	0.46	131.36	-10.00	253.71	-10.00	111.49
350	0.38	127.10	-10.00	263.36	-10.00	118.20
355	0.35	122.78	-10.00	266.54	-10.00	120.37

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: December 28, 2015

COMSEARCH

Earth Station Data Sheet

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

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Globecomm License Sub LLC
Laurel, Maryland
(Call Sign: E010177)
(GSM-3)**

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
December 28, 2015

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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

Believe Wireless, LLC

No carriers reported potential interference cases.

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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 June 5, 2015.

Company

AT&T COMMUNICATIONS OF MARYLAND INC
AT&T Corporation
Adams County Department of Emergency Svc
Alltel Communications LLC-Southern VA
Alltel Communications of Petersburg Inc
Appalachia Engineering Services
Argos Engineering, LLC
Atlantic City Electric Company
BAY BROADBAND COMMUNICATIONS LLC
Baltimore County of Maryland
Baltimore Gas and Electric Company
Believe Wireless, LLC
Capital Communications of America
Carroll, County of
Cellco Partnership - Southern Virginia
Cellco Partnership-WDC/Baltimore
Cellco Prtnrshp - Phil. Tri-State Rgn
Charles, County of
Columbia Gas Transmission Corporation
Comprehensive Wireless LLC
Conterra Ultra Broadband, LLC
County of Frederick
County of York
Delaware Division of Communications
Delmarva Broadcasting Company
Delmarva Power and Light Company
ECW Wireless, LLC
Eastern MLG LLC
Enoch Pratt Free Library
Exelon Generation Company, LLC
FELHC, INC
Firstlevel Networks
Frederick County
Fundamental Broadcasting LLC

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Company (Continue)

GREAT SCOTT BROADCASTING
Garden State Transmissions
Hardy Cellular Telephone Company
Harrisonburg-Rockingham ECC
Lancaster County-Wide Communications
Loudoun, County of
MCI Communications Services Inc.
MVC Research. LLC
Maryland Public Broadcasting Commission
Maryland State Highway Administration
Maryland, State of - Dept.of Info & Tech
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC- WV/NC/SC
New Cingular Wireless PCS LLC-DE/NH/RI
New Cingular Wireless PCS, LLC - PA
New Jersey, State of -NJ Transit
Norfolk Southern Railway
Old Dominion LLC
Open Line Communications
PA Communications
PEG Bandwidth, LLC
PSEG Services Corporation
Peco Energy Company
Pennsylvania Turnpike Commission
Prince George's County
Prince William, County of
RAPPAHANNOCK ELECTRIC COOPERATIVE
Radio One Inc
Rural Broadband Network Services LLC
SCTF NET
SHENANDOAH VALLEY ELECTRIC COOPERATIVE
Southern Maryland Electric Cooperative I
Spotsylvania, County of
Sprint Spectrum L.P.
St. Mary's County of (MD)
Stafford, County of
State of Maryland, MIEMSS
Texas Eastern Communications, LLC
Thought Transmissions, LLC
USCOC of Cumberland, Inc.
Verizon Maryland, Inc.
Verizon Wireless (VAW) LLC - Delaware/NJ
Verizon Wireless (VAW) LLC - Maryland
Verizon Wireless (VAW) LLC - W/B/V Mkts
Verizon Wireless VAW LLC-Southern VA
Virginia Broadband, LLC
Virginia Department of State Police

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Virginia Electric & Power Company

Virginia PCS Alliance, L.C.

Company (Continue)

WV DHHR BPH, Office of EMS, Com. Div.

Washington D.C. SMSA L.P.

Washington Gas Light Company

Washington Suburban Sanitary Commission

World Class Wireless, LLC

YAB Mobile

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.

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Earth Station Data Sheet

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Date: 08/31/2015
Job Number: <PCNJobCode>

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E010177 (**GSM-3**)
Licensee Code SWSITE
Licensee Name Globecom License Sub LLC

Site Information LAUREL, MD

Venue Name
Latitude (NAD 83) 39° 6' 45.5" N
Longitude (NAD 83) 76° 49' 58.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 73.2 m / 240.2 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 5° W to 149° West Longitude
Azimuth Range 101.7° to 258.5°
Corresponding Elevation Angles 5.3° / 5.1°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Andrew		Andrew	
Model		9.3 Meter		9.3 Meter	
Gain / Diameter		50.7 dBi / 9.3 m		53.9 dBi / 9.3 m	
3-dB / 15-dB Beamwidth		0.50° / 1.00°		0.32° / 0.65°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-16.1 7.9	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			37.8 61.8	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	51K2G7W - 36M0G7W / 3700.0 - 4200.0	51K2G7W - 36M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	683.3 km / 424.5 mi	280.1 km / 174.0 mi
Precipitation Scatter Contour Radius	618.2 km / 384.1 mi	100.0 km / 62.1 mi

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Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

LAUREL, MD

Licensee Name: Globecom License Sub LLC
Latitude (NAD 83): 39° 6' 45.5" N
Longitude (NAD 83): 76° 49' 58.0" W
Ground Elevation (AMSL): 73.2 m / 240.2 ft
Antenna Centerline (AGL): 5.49 m / 18.0 ft
Antenna Model: Andrew 9.3 meter
Antenna Mode: Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power: -16.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.32	101.43	-10.00	269.86	-10.00	117.07
5	0.34	96.67	-10.00	267.57	-10.00	115.53
10	0.28	91.69	-10.00	275.02	-10.00	120.51
15	0.24	86.71	-10.00	280.45	-10.00	124.09
20	0.00	81.73	-10.00	285.28	-10.00	127.24
25	0.24	76.75	-10.00	279.61	-10.00	123.54
30	0.00	71.78	-10.00	285.28	-10.00	127.24
35	0.00	66.81	-10.00	285.28	-10.00	127.24
40	0.00	61.83	-10.00	285.28	-10.00	127.24
45	0.00	56.86	-10.00	285.28	-10.00	127.24
50	0.00	51.89	-10.00	285.28	-10.00	127.24
55	0.00	46.93	-9.79	286.64	-9.79	127.80
60	0.00	41.98	-8.58	294.50	-8.58	131.03
65	0.00	37.03	-7.21	303.62	-7.21	133.45
70	0.00	32.10	-5.66	315.00	-5.66	137.81
75	0.00	27.19	-3.86	327.86	-3.86	143.24
80	0.00	22.31	-1.71	343.63	-1.71	150.22
85	0.00	17.51	0.92	363.69	0.92	159.53
90	0.00	12.84	4.28	389.80	4.28	174.09
95	0.00	8.56	8.69	427.25	8.69	191.11
100	0.00	5.60	13.29	669.53	13.29	273.88
105	0.00	6.28	12.06	510.77	12.06	212.29
110	0.00	9.76	7.26	414.76	7.26	185.61
115	0.00	13.47	3.77	386.24	3.77	172.09
120	0.00	17.12	1.16	365.60	1.16	160.45
125	0.00	20.67	-0.88	349.88	-0.88	153.07
130	0.00	24.12	-2.56	337.37	-2.56	147.41
135	0.00	27.43	-3.96	327.17	-3.96	142.94
140	0.21	30.42	-5.08	317.61	-5.08	138.51
145	0.00	33.53	-6.13	311.06	-6.13	136.45
150	0.00	36.23	-6.98	305.23	-6.98	134.09
155	0.00	38.65	-7.68	300.47	-7.68	133.44
160	0.00	40.74	-8.25	296.65	-8.25	131.90
165	0.00	42.43	-8.69	293.73	-8.69	130.72
170	0.00	43.69	-9.01	291.66	-9.01	129.87
175	0.00	44.46	-9.20	290.43	-9.20	129.37
180	0.00	44.72	-9.26	290.01	-9.26	129.20
185	0.00	44.46	-9.20	290.43	-9.20	129.37

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Coordination Values


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Interference Objectives: Long Term: -156.0 dBW/MHz 20% / -154.0 dBW/4 kHz 20%
Short Term: -146.0 dBW/MHz 0.01% / -131.0 dBW/4 kHz 0.0025%
Max Available RF Power: -16.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	43.69	-9.01	291.66	-9.01	129.87
195	0.00	42.43	-8.69	293.73	-8.69	130.72
200	0.00	40.74	-8.25	296.66	-8.25	131.90
205	0.00	38.65	-7.68	300.47	-7.68	133.44
210	0.00	36.23	-6.98	305.23	-6.98	134.09
215	0.00	33.53	-6.14	311.05	-6.14	136.45
220	0.00	30.58	-5.14	318.72	-5.14	139.36
225	0.00	27.43	-3.96	327.16	-3.96	142.94
230	0.00	24.12	-2.56	337.37	-2.56	147.41
235	0.00	20.67	-0.88	349.87	-0.88	153.06
240	0.00	17.11	1.17	365.61	1.17	160.45
245	0.24	13.31	3.90	381.66	3.90	167.93
250	0.28	9.57	7.48	406.43	7.48	178.36
255	0.43	5.83	12.85	504.72	12.85	203.49
260	0.42	4.89	14.77	683.31	14.77	280.13
265	0.48	7.94	9.51	397.99	9.51	163.77
270	0.45	12.36	4.70	361.44	4.70	148.21
275	0.42	17.10	1.17	337.13	1.17	139.27
280	0.44	21.95	-1.53	314.24	-1.53	131.09
285	0.48	26.84	-3.72	292.07	-3.72	121.33
290	0.36	31.79	-5.56	294.39	-5.56	126.07
295	0.42	36.73	-7.13	276.95	-7.13	117.29
300	0.55	41.68	-8.50	255.50	-8.50	104.90
305	0.59	46.64	-9.72	245.38	-9.72	100.00
310	0.45	51.62	-10.00	255.19	-10.00	107.03
315	0.37	56.60	-10.00	264.18	-10.00	113.23
320	0.47	61.57	-10.00	253.00	-10.00	105.50
325	0.49	66.55	-10.00	250.45	-10.00	103.70
330	0.56	71.53	-10.00	245.74	-10.00	100.43
335	0.49	76.52	-10.00	251.31	-10.00	104.30
340	0.46	81.50	-10.00	254.58	-10.00	106.60
345	0.46	86.49	-10.00	253.71	-10.00	106.00
350	0.38	91.47	-10.00	263.36	-10.00	112.67
355	0.35	96.45	-10.00	266.54	-10.00	114.83

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.



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DATED: December 28, 2015