


APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Carpentersville TT&C LEOP STA for Express AM4R - April 2014

I. Applicant

Name: Lockheed Martin Corporation **Phone Number:** 703-413-5970
DBA Name: **Fax Number:** 703-413-5908
Street: 2121 Crystal Drive **E-Mail:** jennifer.warren@lmco.com
Suite 100
City: Arlington **State:** VA
Country: USA **Zipcode:** 22202
Attention: Ms Jennifer Warren

File # SES-STA-20140425-00315
Call Sign ~~5117~~ Grant Date 5-16-14
(or other identifier)
From ~~5117~~ Term Dates To: 6-10-14
Approved: *Jennifer Warren*



GRANTED
International Bureau

Applicant: Lockheed Martin Corporation
Call Sign: E7541
File No.: SES-STA-20140425-00315
Special Temporary Authority (STA)

Lockheed Martin Corporation is granted, under the following conditions, STA for a 30-day period commencing on May 11, 2014 to provide C-band telemetry, tracking and control (TT&C) functions during the LEOP of operation for the Russian Satellite Communications Company licensed Express AM4R satellite at geographical coordinates 40 deg 38' 39.1 " N.L. and 075 deg 11' 27.8" W.L. at Carpentersville, New Jersey while the satellite is in transfer orbit on the way to its final geostationary orbital location 80 deg. E.L. The launch date of Express AM4R is estimated on May 16, 2014.

1. The TT&C operations will be transmitted on 6535.0 MHz frequency (Earth-to-space) and received telemetry signals on 4199.5 MHz with 61.7 dBW maximum EIRP within the coordinated emission and power limits.
2. All operations shall be on an unprotected and non-harmful interference basis, Lockheed Martin Corporation, E7541, shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference.
3. All operations under this grant of special temporary authority must be on an unprotected and non-harmful interference basis, *i.e.*, Lockheed Martin Corporation must not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating station.
4. In the event of any harmful interference under this grant of special temporary authority, Lockheed Martin Corporation must cease operations immediately upon notification of such interference, and must inform the Commission, in writing, immediately of such an event.
5. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Lockheed Martin Corporation's risk.
6. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately.



File # SES-STA-20140425-00315
Call Sign E7541 Grant Date 5-6-14
(or other identifier)
From 5-11-14 Term Dates To: 6-10-14
Approved: [Signature]

2. Contact	
Name: David S. Keir	Phone Number: (202) 429-8970
Company: Lerman Senter PLLC	Fax Number: (202) 293-7783
Street: 2000 K Street, NW Suite 600	E-Mail: dkeir@lermansenter.com
City: Washington	State: DC
Country: USA	Zipcode: 20006 -1809
Attention: David S. Keir	Relationship: Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number or Submission ID	
4a. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).	
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee	
<input type="radio"/> Other (please explain):	
4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station	
5. Type Request	
<input type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other	
6. Requested Use Prior Date 05/11/2014	
7. City Carpentersville	
8. Latitude (dd mm ss.s h) 40 38 39.1 N	

9. State NJ	10. Longitude (dd mm ss.s h) 75 11 27.8 W
11. Please supply any need attachments. Attachment 1: Attachment (4-2014) Attachment 2: Coordination Report Attachment 3: Attachment 3:	
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) <div style="border: 1px solid black; padding: 5px;"> <p>Lockheed Martin Corporation requests Special Temporary Authority for a 30-day period, commencing May 11, 2014, to use the C-band antenna at its Carpentersville, NJ earth station (Call Sign E7541) to support post-launch/early-orbit operations TT&C for the Express AM4R satellite, which is expected to be launched on or about May 16, 2014. See</p> </div>	
13. 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 <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Jennifer Warren	15. Title of Person Signing Vice President, Technology Policy & Regulation
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).	

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

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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.

12. Description

Lockheed Martin Corporation requests Special Temporary Authority for a 30-day period, commencing May 11, 2014, to use the C-band antenna at its Carpentersville, NJ earth station (Call Sign E7541) to support post-launch/early-orbit operations TT&C for the Express AM4R satellite, which is expected to be launched on or about May 16, 2014. See Attachment.

Description of Operations and Public Interest Statement

Lockheed Martin Corporation (“Lockheed Martin”) requests special temporary authority (“STA”) to operate its Carpentersville, New Jersey fixed earth station (*see* File No. SES-LIC-20081103-01443, as amended)¹ to provide telemetry, tracking and control (“TT&C”) functions during the post-launch and early orbit phases (“LEOP”) of operation for the Express AM4R satellite. AM4R is destined for operation at the 80° East longitude orbital location (80° E.L.), and is currently scheduled for launch on May 16, 2014 aboard a Proton launch vehicle from the Baikonur facility in Kazakhstan.² Accordingly, Lockheed Martin would likely need to begin test transmissions in preparation for the launch on or about May 11, 2014.³

1. Requested STA Operations

Lockheed Martin specifically seeks authority to transmit telecommand signals at the center frequency 6535 MHz for in transit telecommand communications (Earth-to-space)⁴, and to receive telemetry signals from the satellite (space-to-Earth) at the 4199.5 MHz center frequency. Lockheed Martin is requesting the duration of this STA to be a total of thirty (30) days from May 11, 2014 to cover any slippage in the anticipated dates of the various phases of operation; it nonetheless expects that all Carpentersville operations in support of the launch will be completed within ten (10) days after the AM4R satellite is launched.

Lockheed Martin’s proposed transmissions will use total input power and emissions for telecommand that will fall below the highest input power, EIRP, EIRP density, and bandwidth prescribed for the telecommand carriers in its former FCC license. When no commands are being sent, a CW carrier that is within the emission of Lockheed Martin’s E7541 operation would be present. *See, e.g.*, File No. SES-AMD-20081219-01664, at Schedule B. The

¹ The pending application in File No. SES-LIC-20081103-01443, under Call Sign E7541, was filed on a provisional basis while Lockheed Martin’s license for a 14.2 meter Ku-band antenna at the Carpentersville, NJ site (under Call Sign E920702) remains the subject of a pending petition for reinstatement. Lockheed Martin’s petition to reinstate the license for Call Sign E920702, as well as the “replacement” application it filed in the alternative under File No. SES-LIC-20081103-01443 and Call Sign E7541, both remain pending.

² *See* Russian Satellite Communications Company Press Release, “Express-AM4R, a communications and broadcasting satellite, is now at Baikonur Cosmodrome,” dated April 21, 2014, available at <http://eng.rssc.ru/100/177/482.html> (last visited April 24, 2014).

³ The test transmissions that would begin on or about May 11th would occur over a period of approximately two to three days. During these tests, the earth station would not be communicating with any satellite; instead, the transmissions will be made with the antenna at zenith to verify RF functionality.

⁴ This frequency is in the extended C-band allocated to the Fixed-Satellite Service on a co-primary basis with the terrestrial Fixed service, and therefore subject to prior coordination with other users. Operations have been coordinated in advance with all potentially affected entities that operate communications systems in compliance with the Table of Frequency Allocations and a coordination report is included as part of this application.

information in the Schedule B portion of Lockheed Martin's pending application in File No. SES-LIC-20081130-01443, as amended, is hereby incorporated by reference. All of Lockheed Martin's proposed TT&C operations in support of the AM4R launch will be on a strictly non-harmful interference, non-protected basis.

The antenna to be used for this STA is already built. It is the same antenna that was authorized under Call Sign E7541 and that is now the subject of the pending request described in Note 1 above, and has been used during the pendency of that request on an STA-basis to support many other satellite launches. *See, e.g.*, Request of Lockheed Martin Corp. for STA to operate Carpentersville, NJ earth station in support of launch of Astra 5-B, SES-STA-20140310-00134 (granted Mar. 14, 2014); Request of Lockheed Martin Corp. for STA to operate Carpentersville, NJ earth station in support of launch of ABS-2, SES-STA-20140103-00005 (granted Jan. 28, 2014); Request of Lockheed Martin Corp. for STA to operate Carpentersville, NJ earth station in support of launch of SES-8, SES-STA-20131101-00922 (granted Nov. 18, 2013); Request of Lockheed Martin Corp. for STA to operate Carpentersville, NJ earth station in support of launch of Eutelsat 25B, SES-STA-20130809-00708 (granted Aug. 26, 2013). For this reason, Lockheed Martin does not provide a new analysis of non-ionizing radiation for the antenna, or any of the detailed transmission/reception parameters for the signals. Instead, Lockheed Martin incorporates by reference the radiation hazard study and Schedule B information that were included with the November 2008 modification application in File No. SES-LIC-20081103-01443, as amended.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, AM4R is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following cell phone number: (609)-865-2658 and/or station number: (908) 859-4050.

2. Grant of the Requested Authority Will Serve the Public Interest

Lockheed Martin believes that the limited operations it proposes in support of the launch of the AM4R satellite are required in the public interest.⁵ Lockheed Martin understands that the AM4R satellite is licensed to the Russian Satellite Communications Company and will be located in geostationary orbit at 80°E.L. for the provision of communications services to Russia and the CIS countries. Lockheed Martin's Carpentersville earth station will be part of a global network of control facilities that will be used solely to position the satellite as it progresses from transfer orbit to its final location. No end user service will be provided within the United States at any time, and the AM4R satellite's destination orbital location at 80° E.L. does not afford visibility from the Carpentersville location.⁶ The safe and orderly use of the entire geostationary

⁵ The spacecraft will be controlled throughout the launch and transfer orbit phases by Astrium (France), which will manage the LEOP portion of the mission from its network control center in Toulouse, France.

⁶ Lockheed Martin notes that no waiver of the Commission's application rules with respect to non-U.S. satellites (*see* 47 C.F.R. §§ 25.114 and 25.137) is required in this instance, as the requested operations will not "serve the United States" market, but are instead intended only to assist in the launch and transfer

orbital resource and protection of the hundreds of satellites licensed by the U.S. and other countries that operate there depends in no small part on ensuring that the AM4R satellite is controlled while over North America; Lockheed Martin's earth station thus will serve a vital function.⁷

* * * * *

As outlined above, Lockheed Martin requests authority to operate its Carpentersville, NJ earth station antenna to provide critical TT&C services during the launch and early operations phase of the AM4R satellite, for a term of 30 days commencing May 11, 2014.

orbit phases for deployment of a new satellite, which incidentally will also serve only points that lie outside the United States. Under such circumstances, the Commission has not required any submission pursuant to the application rules governing non-U.S. satellites, nor otherwise required any waiver showing. *See, e.g.* Request of Lockheed Martin Corp. for STA to operate Carpentersville, NJ earth station in support of launch of Amazonas-3, File No. SES-STA-20130122-00078 (granted Feb. 4, 2013); *cf. EchoStar Satellite Operating Company*, 28 FCC Rcd 4229, 4233 (¶ 12) (IB 2013) (“ESOC will operate feeder links and TT&C earth stations within the United States, but we do not interpret these very limited technical operations, under STA, as constituting “DBS service” to the United States”).

⁷ Lockheed Martin also notes that the Commission has recently granted this same authority with respect to the AM4R launch to Inmarsat Hawaii Inc. for its C-band Earth station in Paumalu, Hawaii (Call Sign KA25). *See* FCC File No. SES-STA-20140205-00065 (granted April 15, 2014); FCC Public Notice, “Satellite Communications Services Information re: Actions Taken,” Report No. SES-01641, at 8 (released April 23, 2014).

Prepared By

COMSEARCH

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

Prepared For

Lockheed Martin Corporation Carpentersville, New Jersey

Temporary Transmit-Only Earth Station
Operation Dates: 04/04/2014 - 07/10/2014

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. Verbal and written coordination was conducted with the below listed carriers on February 12, 2014.

Company

256Q Networks
AWC Networks
Appalachian Broadcasting
Atlantic City Electric Company
Auburn Data Systems, LLC
Bergen, County of
Berks County Department of Emergency Ser
Bucks County Dept. of Emergency Communic
Carbon, County of 911 Center
Chester, County of
China Cat Productions LLC
City of Bethlehem, Pennsylvania
Commonwealth of Pennsylvania
Commonwealth of Pennsylvania-Radio Proj.
Converge Towers LLC
Coralinks
County of Burlington, Public Safety Cntr
County of Camden
County of Hunterdon
County of Salem
County of Warren, NJ
DAUPHIN COUNTY EMERGENCY MANAGEMENT
Delaware County (PA) Emergency Services
Delaware Division of Communications
Delmarva Power & Light Company
ECW Wireless, LLC
EG Broadcast Newco Corp
Eastern MLG LLC
Eastern Pennsylvania EMS Council
Egan LLC

Company (Continued)

Electric Railroad, LLC
Exelon Generation Company, L.L.C
FELHC, Inc.
Federal Communications Commission
Fundamental Broadcasting LLC
Gloucester, County of
High Voltage Communications LLC
Jefferson Microwave, LLC
Kreider Networks
Kryptic Technologies
LACKAWANNA, COUNTY OF
LEBANON COUNTY OF
Lancaster County of
Lehigh, County of
Luzerne County Department of Public Sfty
MONMOUTH, COUNTY OF
Mahwah Communications
Mifflin Mobilecom
Monroe County Control Center (PA)
Montgomery County Of
Morris, County of
NBC Telemundo License LLC
National Tower Company
New Cingular Wireless PCS LLC-DE/NH/RI
New Cingular Wireless PCS, LLC - PA
New Jersey State Police
New Jersey Transit Rail Operations, Inc.
New Jersey Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
New York City Transit Authority
New York, City of
New York, City of
Norfolk Southern Railway
Northumberland, County of
OCEAN, COUNTY OF
Ocean, County of - Div of Wireless Tech.
Orange and Rockland Utilities, Inc.
PEG Bandwidth
PENNSYLVANIA TURNPIKE COMMISSION
PIKE COUNTY COMMISSIONERS
PSEG Services Corporation
Peco Energy Company
Pennsylvania Commonwealth State Police
Pitt Power
Port Authority of New York & New Jersey
Qoncept Holdings LLC
SCHUYLKILL, COUNTY OF
SCRANTON TIMES, LP
SCS Networks
SCTF NET

Company (Continued)

SECOM NET
SOUTHEASTERN PENNSYLVANIA TRANSIT AUTH
STATE OF NEW JERSEY - OFFICE OF PUBLIC
SW Networks
Standard Backhaul Communications LLC
State of Maryland, MIEMSS
State of New York, Div of State Police
TRF SERVICES LLC
Texas Eastern Communications, LLC
Thought Transmissions, LLC
Townsquare Media Monmouth-Ocean License
Transcontinental Gas Pipeline Corp.
Triangle Communications, Inc.
Turtle Networks 6559
Turtle Networks 6562
WAYNE COUNTY PENNSYLVANIA
Weblin Holdings LLC
White Rabbit Networks
Wireless Internetwork LLC
World Class Wireless LLC
Zango LLC
Zen Networks, Inc
iSignal

There are no unresolved interference objections with the stations contained in these applications.

The following 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: 02/23/2014
Job Number: 140212COMSJC02

Administrative Information

Status: TEMPORARY (Operation from 04/04/2014 to 07/10/2014)
Call Sign: TEMP07
Licensee Code: RCASTR
Licensee Name: Lockheed Martin Corporation

Site Information

CARPENTERSVILLE, NEW JERSEY

Venue Name
Latitude (NAD 83): 40° 38' 39.4" N
Longitude (NAD 83): 75° 11' 27.6" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 54.86 m / 180.0 ft

Link Information

Satellite Type: Geostationary
Mode: TO - Transmit-Only
Modulation: Analog and Digital
Satellite Arc: 18° W to 132° West Longitude
Azimuth Range: 112.8° to 246.9°
Corresponding Elevation Angles: 15.9° / 16.2°
Antenna Centerline (AGL): 9.14 m / 30.0 ft

Antenna Information

Manufacturer: TIW
Model: 14.2 Meter
Gain / Diameter: 57.5 dBi / 14.2 m
3-dB / 15-dB Beamwidth: 0.20° / 0.50°

Transmit

Max Available RF Power: (dBW/4 kHz) 4.2
(dBW/MHz) 28.2

Maximum EIRP: (dBW/4 kHz) 61.7
(dBW/MHz) 85.7
(dBW) 85.0

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

Frequency Information

Emission / Frequency Range (MHz)

Transmit 6.7 GHz

850KFXD / 6535.0

Max Great Circle Coordination Distance: 155.7 km / 96.7 mi
Precipitation Scatter Contour Radius: 284.5 km / 176.8 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values	CARPENTERSVILLE, NJ
Licensee Name	Lockheed Martin Corporation
Latitude (NAD 83)	40° 38' 39.4" N
Longitude (NAD 83)	75° 11' 27.6" W
Ground Elevation (AMSL)	54.86 m / 180.0 ft
Antenna Centerline (AGL)	9.14 m / 30.0 ft
Antenna Model	TIW 14.2 Meter
Antenna Mode	Transmit 6.7 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	4.2 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.7 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	3.52	112.22	-10.00	100.00
5	4.01	107.39	-10.00	100.00
10	4.15	102.51	-10.00	100.00
15	2.87	97.58	-10.00	100.00
20	2.87	92.71	-10.00	100.00
25	3.07	87.84	-10.00	100.00
30	3.50	82.95	-10.00	100.00
35	3.79	78.06	-10.00	100.00
40	3.82	73.17	-10.00	100.00
45	3.86	68.30	-10.00	100.00
50	3.66	63.45	-10.00	100.00
55	3.45	58.63	-10.00	100.00
60	3.33	53.82	-10.00	100.00
65	3.16	49.05	-10.00	100.00
70	2.88	44.35	-9.17	100.28
75	3.16	39.57	-7.93	100.00
80	3.14	34.92	-6.58	104.93
85	3.07	30.39	-5.07	111.96
90	3.08	25.98	-3.37	118.42
95	2.95	21.88	-1.50	127.76
100	2.73	18.28	0.45	137.87
105	2.74	15.26	2.41	145.67
110	2.60	13.59	3.67	154.49
115	2.77	13.33	3.88	151.76
120	2.69	15.03	2.57	147.48
125	2.32	18.20	0.50	146.56
130	1.61	22.03	-1.57	155.59
135	2.18	24.78	-2.85	136.03
140	2.74	27.34	-3.92	122.60
145	2.33	30.44	-5.09	125.85
150	2.25	33.04	-5.98	124.11
155	1.92	35.57	-6.78	127.91
160	2.20	37.24	-7.28	120.32
165	2.65	38.35	-7.59	110.46
170	2.47	39.64	-7.95	112.66
175	1.94	40.84	-8.28	122.17
180	1.90	41.11	-8.35	122.72
185	1.86	40.92	-8.30	124.02

COMSEARCH

Earth Station Data Sheet

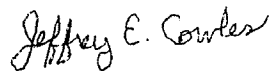
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Antenna Mode	Transmit 6.7 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	4.2 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.7 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.24	40.83	-8.27	138.18
195	1.32	39.60	-7.94	137.34
200	2.35	37.10	-7.24	117.49
205	1.72	35.75	-6.83	132.49
210	1.78	33.44	-6.11	133.78
215	2.16	30.58	-5.14	128.96
220	3.42	26.81	-3.71	110.92
225	3.60	23.70	-2.37	112.85
230	4.84	19.63	-0.32	102.00
235	4.35	16.73	1.41	115.21
240	4.47	13.59	3.67	122.33
245	3.78	12.55	4.53	134.51
250	2.48	14.05	3.31	155.66
255	2.26	16.06	1.86	153.77
260	2.60	18.78	0.16	139.28
265	3.20	22.14	-1.63	122.75
270	3.30	26.27	-3.48	114.00
275	2.81	30.87	-5.24	116.11
280	2.82	35.40	-6.72	110.48
285	3.08	39.95	-8.04	100.75
290	3.59	44.54	-9.22	100.00
295	4.24	49.19	-10.00	100.00
300	5.02	53.89	-10.00	100.00
305	5.51	58.70	-10.00	100.00
310	5.46	63.59	-10.00	100.00
315	5.56	68.48	-10.00	100.00
320	4.72	73.43	-10.00	100.00
325	3.93	78.36	-10.00	100.00
330	3.38	83.25	-10.00	100.00
335	3.19	88.13	-10.00	100.00
340	3.12	93.00	-10.00	100.00
345	3.01	97.87	-10.00	100.00
350	3.24	102.74	-10.00	100.00
355	3.48	107.62	-10.00	100.00

Certification

I hereby certify that I am the technically qualified person responsible for the preparation of the frequency coordination data contained in this report. I am familiar with Parts 101 and 25 of the FCC Rules and Regulations and I have either prepared or reviewed the frequency coordination data submitted with this report, 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 Blvd.
Ashburn, Virginia 20147

DATED: February 23, 2014