

16/1/16

E7541 SES-STA-20160728-00698 IB2016001746
Lockheed Martin Corporation

Approved by OMB
3060-0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Carpentersville LEOP TT&C STA for IS-36 - July 2016 (30-day STA)

1. Applicant

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



File # SES-STA-20160728-00698
 Call Sign E7541 Grant Date 8-17-16
 (or other identifier)
 Term Dates
 From: 8-20-16 To: 9-19-16
 Approved: *[Signature]*

Applicant: Lockheed Martin Corporation
Call Sign: E7541
File No.: SES-STA-20160728-00698
Special Temporary Authority (STA)

Lockheed Martin Corporation is granted a 30-day STA to operate its earth station Call Sign E7541 in Carpentersville, New Jersey to provide telemetry, tracking and control ("TT&C") functions during the post-launch and transfer orbit phases (LEOP) for the U.S registered Intelsat 36 ("IS-36") satellite at the orbital location 68.5° E.L. under the following conditions:

1. TT&C operations authority to IS-36 is limited to Earth-to-space transmissions using the 850KXFD emission carrier at the center frequencies 6722.0 MHz and 6724.5 MHz (LHCP) within coordinated emission and power limits.
2. The LEOP operations must be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path. All operators of satellites in that path will be provided with an emergency phone number where the licensee can be reached in the event that harmful interference occurs. Currently the 24x7 contact information for the IS-36 satellite LEOP mission is as follows: Cell phone: (609) 865-2658 and station number (908) 859-4050. Request to speak with Michael Usarzewicz.
3. All operations shall be on an unprotected and non-harmful interference basis, Lockheed Martin, 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.
4. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future Lockheed Martin Corporation's applications.
5. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at Lockheed Martin Corporation's risk.

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-20160728-00698
E7541
Call Sign E7541 Grant Date 8-17-16
(or other identifier)
Term Dates
From: 8-20-16 To: 9-19-16
Approved: [Signature]

2. Contact			
Name:	Ryan N. Terry	Phone Number:	703-413-5747
Company:	Lockheed Martin Corporation	Fax Number:	703-413-5908
Street:	2121 Crystal Drive Suite 100	E-Mail:	ryan.n.terry@lmco.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	22202 -
Attention:		Relationship:	Same
(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 SESLIC2008110301443 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			
08/20/2016			
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: STA Attachment 2: Freq Coordination 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;">Lockheed Martin Corporation hereby requests Special Temporary Authority beginning August 20, 2016, to operate its Carpentersville, New Jersey fixed earth station (Call Sign E7541) to provide telemetry, tracking and control (TT&C) functions during the post-launch and early orbit phases (LEOP) of operation for the Intelsat 36 satellite.</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"; party to the application; party to the application; party to the application. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Jennifer A. 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

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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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.

Description of Operations and Public Interest Statement

Pursuant to 47 CFR 25.120 of the Commission's Rules, Lockheed Martin Corporation ("Lockheed Martin") hereby requests Special Temporary Authority ("STA") for a period of thirty (30) days to operate its Carpentersville, New Jersey fixed earth station (Call Sign E7541) to provide telemetry, tracking and control ("TT&C") functions during the post-launch and early orbit phases ("LEOP") of operation for the Intelsat 36 satellite ("IS-36").

IS-36 is a Space Systems Loral Model SSL-1300 satellite and licensed by the Federal Communications Commission for operation at the 68.5° East Longitude orbital location (68.5° E.L.).¹ IS-36 is scheduled for an upcoming launch aboard a Ariane 5 launch vehicle from the European Spaceport in Kourou, French Guiana on August 24, 2016.

Accordingly, Lockheed Martin respectfully requests to begin test transmissions on August 20, 2016 in preparation for the launch.² Further, Lockheed Martin is requesting that the duration of this STA be a total of thirty (30) days 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 IS-36 satellite is launched.

1. Requested STA Operations

Lockheed Martin specifically seeks authority to transmit telecommand signals at the center frequencies 6722.0 MHz and 6724.5 MHz for in transit telecommand communications (Earth-to-space).

The proposed TT&C operations in support of the IS-36 launch will be on a strictly non-harmful interference, non-protected basis. Lockheed Martin's proposed transmissions will use total input power and emissions for C-band telecommand that will fall below the highest input power, EIRP, EIRP density, and bandwidth prescribed for the telecommand carriers in its above-referenced FCC license. When no commands are being sent, a CW carrier that is within the emission of the licensed operation would be present. However, in the case of an anomaly, extraordinary measures, such as increasing power, may be necessary; if such measures are required during this STA period, Lockheed Martin will notify the FCC within seven (7) business days that such measures were needed.

Lockheed Martin incorporates by reference the radiation hazard study and Schedule B information that were included with its most recent filings at the FCC. In addition, Lockheed

¹ See FCC File No. SAT-LOA-20151231-00089 (S2948).

² The proposed test transmissions 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.

Martin is submitting herewith a Frequency Coordination and Interference Analysis Report prepared by Comsearch.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, IS-36 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 IS-36 satellite serve the public interest. Lockheed Martin understands that the IS-36 satellite has been licensed by the FCC to provide media and content distribution services in Africa and South Asia. 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. The safe and orderly use of the entire geostationary 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 IS-36 satellite is controlled while over North America en route to its final geostationary orbital position. In this regard, Lockheed Martin's earth station thus will serve a vital function.

* * * * *

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 IS-36 satellite, for a term of 30 days, commencing August 20, 2016.

Operating Parameters for Proposed Carpentersville, NJ C-Band TT&C LEOP STA

SITE NAME (or identifier):	Carpentersville, NJ – Call Sign E7541
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Antenna location

Longitude (deg, min, sec- <i>NAD 83</i>)	75 ° 11 ' 27.8 " W
Latitude (deg, min, sec- <i>NAD 83</i>)	40 ° 38 ' 39.1 " N
Antenna Height:	19.2 m
Ground Elevation (AMSL):	85.7 m

Antenna Characteristics (size & gain)

Size	14.2
TX Gain	57.3 dBi @ 6.0 GHz
RX Gain	53.9 dBi @ 4.0 GHz
Antenna Model	14.2 KFPA
Antenna Manufacturer	TIW (GD SATCOM)

Maximum HPA Power 650W

IS36		
Telecommand uplink		
TC1 frequency (MHz)	6722	6724.5
TC1 polarization	RHCP	RHCP
Modulation: Coding and Rate	FM/BPSK, 250	FM/BPSK, 250
Max occupied RF bandwidth	850kHz	850kHz
Emission type		
Telemetry downlink		
TM1 frequency (MHz)	3652	3652.5
TM1 polarization	LHCP	LHCP
Max occupied RF bandwidth	300kHz	300kHz
Emission type		
Modulation: Coding and Rate	PM/PCM, 4800	PM/PCM, 4800

Final Satellite Position	
Satellite Commercial name:	Intelsat 36
Orbital Location:	68.5 EL

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Lockheed Martin Corporation-Phillipsburg
CARPENTERSVILLE, NJ
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
July 26, 2016

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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.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 07/13/2016.

Company

AWC Networks
Affiniti PA, LLC
Atlantic City Electric Company
Auburn Data Systems, LLC
Bedford, County of
Bergen, County of
Berks County Department of Emergency Ser
Blue Ridge Carriers
Blueline Communications
Bucks County Dept. of Emergency Comm
CBS Communication Services Inc
Carbon, County of 911 Center
Cellco Partnership - Bridgeville, PA/WV
Chester, County of
City of Bethlehem
City of New York
Commonwealth of Pennsylvania
Commonwealth of Pennsylvania-Radio Proj.
County of Burlington, Public Safety Cntr
County of Camden
County of Fayette
County of Hunterdon
County of Warren, NJ
Cumberland, County of
DAUPHIN COUNTY EMERGENCY MANAGEMENT
Delaware County (PA) Emergency Services
Delaware Division of Communications
ECW Wireless, LLC
Eastern MLG LLC
Eastern Pennsylvania EMS Council
Egan LLC
Electric Railroad, LLC
Exelon Generation Company, LLC
FELHC, INC
Federal Communication Commission
Franklin County Dept. of Emergency Servi
Fundamental Broadcasting LLC
Geodesic Networks LLC
Gloucester, County of
Green Line Networks

Hardy Cellular Telephone Company
High Voltage Communications LLC (CFN)
Kryptick Technologies
Lackawanna County Dept. of Emergency Ser
Lancaster County-Wide Communications
Lebanon, County of
Lehigh, County of
Luzerne County Department of Public Sfty
MONMOUTH, COUNTY OF
MTA - Long Island Railroad
Mahwah Communications
Mifflin Mobilecom
Monroe County Control Center (PA)
Montgomery County Of
Morris, County of
NBC Telemundo License LLC
NEW YORK CITY POLICE DEPARTMENT
Nassau County Police Department
National Tower Company LLC
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 Line Networks, LLC
New York City Transit Authority
Norfolk Southern Railway
Northumberland County DPS/911
OCEAN, COUNTY OF
Ocean, County of - Div of Wireless Tech.
Orange and Rockland Utilities, Inc.
PEG Bandwidth, LLC
PIKE COUNTY COMMISSIONERS
PSEG Services Corporation
Peco Energy Company
Pennsylvania Sports Entertainment Netwo.
Pennsylvania State Police
Pennsylvania Turnpike Commission
Perseus Technology Holdings USA Inc.
Pitt Power
Pittsburgh SMSA Limited Partnership
Port Authority of New York & New Jersey
Rockland, County of
SCHUYLKILL, COUNTY OF
SCS Networks
SECOM NET
STATE OF NEW JERSEY - OFFICE OF PUBLIC
SW Networks
South Central Task Force (SCTFNET)
Southeastern Pennsylvania Transit Auth
Standard Backhaul Communications LLC
State of Maryland, MIEMSS
State of New York, Div of State Police
Texas Eastern Communications, LLC
The Scranton Times, L.P.
Townsquare Media Monmouth-Ocean License

Transcontinental Gas Pipeline Corp.
Triangle Communications, Inc.
Turtle Networks 6559
Turtle Networks 6562
USOC of Pennsylvania RSA No 10 B2 Inc.
WAYNE COUNTY PENNSYLVANIA
Weblin Holdings LLC
Wireless Internetwork LLC
World Class Wireless, LLC
Zango LLC
Zen Networks, Inc
iSignal
xWave Engineering LLC

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: 07/26/2016
Job Number: 160713COMSGE11

Administrative Information

Status: TEMPORARY (Operation from 08/24/2016 to 09/08/2016)
Call Sign: E7541
Licensee Code: RCASTR
Licensee Name: Lockheed Martin Corporation-Phillipsburg

Site Information

CARPENTERSVILLE, NJ

Venue Name: S-ANT 1
Latitude (NAD 83): 40° 38' 39.1" N
Longitude (NAD 83): 75° 11' 27.8" 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: 4° W to 147° West Longitude
Azimuth Range: 102.5° to 257.9°
Corresponding Elevation Angles: 5.5° / 5.0°
Antenna Centerline (AGL): 9.14 m / 30.0 ft

Antenna Information

Transmit - FCC32

Manufacturer: TIW Systems
Model: FCC STD 14.2-MET
Gain / Diameter: 58.6 dBi / 14.2 m
3-dB / 15-dB Beamwidth: 0.24° / 0.46°

Max Available RF Power: (dBW/4 kHz) 1.1
(dBW/MHz) 25.1

Maximum EIRP: (dBW/4 kHz) 59.7
(dBW/MHz) 83.7
(dBW) 83.0

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

Frequency Information

Transmit 6.7 GHz

Emission / Frequency Range (MHz): 850KFXD / 6722.0 - 6724.5

Max Great Circle Coordination Distance: 506.2 km / 314.5 mi
Precipitation Scatter Contour Radius: 207.6 km / 129.0 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147

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

Coordination Values		CARPENTERSVI, NJ	
Licensee Name		Lockheed Martin Corporation-Phillipsburg	
Latitude (NAD 83)		40° 38' 39.1" N	
Longitude (NAD 83)		75° 11' 27.8" 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		1.1 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.7 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	3.51	102.08	-10.00	100.00
5	3.90	97.51	-10.00	100.00
10	2.91	92.51	-10.00	100.00
15	2.84	87.51	-10.00	100.00
20	2.83	82.52	-10.00	100.00
25	3.07	77.52	-10.00	100.00
30	3.44	72.52	-10.00	100.00
35	3.78	67.52	-10.00	100.00
40	3.82	62.52	-10.00	100.00
45	3.80	57.53	-10.00	100.00
50	3.59	52.54	-10.00	100.00
55	3.40	47.55	-9.93	100.00
60	3.31	42.56	-8.72	100.00
65	3.12	37.58	-7.37	100.00
70	2.88	32.61	-5.83	101.16
75	3.07	27.61	-4.03	104.21
80	3.04	22.64	-1.87	112.87
85	3.06	17.68	0.82	122.92
90	3.07	12.74	4.37	134.52
95	2.74	8.00	9.42	164.56
100	2.73	3.74	17.68	206.10
105	2.58	3.84	17.40	320.36
110	2.72	7.37	10.31	171.30
115	2.80	10.92	6.05	146.79
120	2.62	14.56	2.92	137.59
125	2.05	18.40	0.38	139.30
130	1.63	22.02	-1.57	141.89
135	2.22	24.75	-2.84	124.77
140	2.76	27.32	-3.91	110.38
145	2.31	30.46	-5.09	114.81
150	2.22	33.06	-5.98	113.26
155	1.94	35.55	-6.77	116.37
160	2.22	37.22	-7.27	108.80
165	2.67	38.33	-7.59	100.00
170	2.46	39.65	-7.95	101.71
175	1.94	40.84	-8.28	111.10
180	1.90	41.11	-8.35	111.81
185	1.86	40.92	-8.30	113.07

COMSEARCH

Earth Station Data Sheet

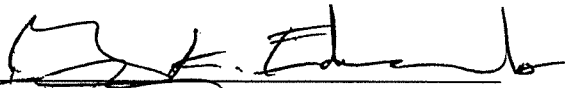
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values	CARPENTERSVI, NJ
Licensee Name	Lockheed Martin Corporation-Phillipsburg
Latitude (NAD 83)	40° 38' 39.1" N
Longitude (NAD 83)	75° 11' 27.8" 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	1.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.7 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.23	40.84	-8.28	128.90
195	1.33	39.59	-7.94	127.55
200	2.37	37.09	-7.23	106.01
205	1.76	35.72	-6.82	120.65
210	1.77	33.44	-6.11	122.77
215	2.21	30.54	-5.12	116.67
220	3.42	26.81	-3.71	100.00
225	3.50	23.78	-2.41	102.55
230	4.90	19.59	-0.30	100.00
235	4.41	16.68	1.44	102.85
240	4.50	13.22	3.97	111.12
245	3.77	10.24	6.75	132.56
250	2.53	7.51	10.11	174.62
255	2.28	4.01	16.92	341.90
260	2.60	3.20	19.36	506.22
265	3.11	7.34	10.36	160.68
270	3.39	12.19	4.85	131.96
275	2.86	17.22	1.10	127.53
280	2.80	22.19	-1.65	118.13
285	3.05	27.15	-3.84	105.27
290	3.56	32.11	-5.67	100.00
295	4.21	37.09	-7.23	100.00
300	4.98	42.08	-8.60	100.00
305	5.49	47.09	-9.82	100.00
310	5.46	52.09	-10.00	100.00
315	5.57	57.09	-10.00	100.00
320	4.81	62.08	-10.00	100.00
325	3.99	67.09	-10.00	100.00
330	3.36	72.09	-10.00	100.00
335	3.16	77.09	-10.00	100.00
340	3.15	82.09	-10.00	100.00
345	3.00	87.09	-10.00	100.00
350	3.23	92.08	-10.00	100.00
355	3.48	97.08	-10.00	100.00

5. CERTIFICATION

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

BY: 

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

DATED: July 26, 2016