

Lockheed Martin Corporation
Carpentersville, New Jersey Earth Station
Call Sign E7541
STA Request for LEOp TT&C Operations
May 2011
Attachment

Description

Lockheed Martin Corporation (“Lockheed Martin”) requests special temporary authority (“STA”) to operate its Carpentersville, New Jersey Ku-band 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 transfer orbit phases of operation for the BSAT-3c satellite that will be operated by the Broadcasting Satellite System Corporation of Japan. BSAT-3c is currently scheduled for launch on July 1, 2011, and Lockheed Martin intends to perform test transmissions in preparation for the launch on or about June 1, 2011.² To the extent required to meet this timetable, Lockheed Martin requests expedited treatment of the instant STA request and action by May 31, 2011.

Lockheed Martin specifically seeks authority to transmit on the 17305.0 MHz telecommand uplink channel. The earth station would receive telemetry signals from the BSAT-3c satellite on the 11701.5 MHz channels. The mission duration for the TT&C operations requested here is 6 to 10 days. Lockheed Martin thus requests an STA window of 60 days to encompass the tests on June 1 through June 5, 2011, and a 23-day window running from July 1 to July 23 for 6 to 10 days of TT&C operations, to enable it to accommodate any slippage in the launch date without the need for additional authority from the Commission. Together, the two windows for tests and TT&C operation have a duration that is less than the 30-day period specified in Section 25.120(b)(4) of the Commission’s Rules, 47 C.F.R. § 25.120(b)(4).

The transmit frequencies Lockheed Martin seeks to use for the BSAT-3c TT&C support operations are not included in Lockheed Martin’s former license for Call Sign E920702 and current application for the Ku-band antenna in File No. SES-LIC-20081103-01443 (under Call Sign E7541). Lockheed Martin notes, however, that the Commission previously granted Lockheed Martin STA requests for launch and early-operations TT&C support using frequencies in the ranges sought in the instant STA request. Most recently, the Commission authorized Lockheed Martin to perform launch support operations for the BSAT-3b satellite in the Fall of 2010 using the 17306.4 MHz telecommand frequency and the 11707.1 MHz telemetry frequency. *See Request of Lockheed Martin Corp. for STA to support LEOp TT&C Functions*

¹ The pending application in File No. SES-LIC-20081103-01443, under Call Sign E7541, was filed on a provisional basis to replace Lockheed Martin’s inadvertently non-renewed license for a 14.2 meter Ku-band antenna at the Carpentersville, NJ site under Call Sign E920702. 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, are pending.

² The test transmissions that would begin on or about June 1, 2011 would occur over a period of approximately two 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.

of BSAT-3b, File No. SES-STA-20101012-01276. *See also*, Request of Lockheed Martin Corp. for STA to Support LEOp TT&C Functions of NS-201, File No. SES-STA-20100706-00875 (STA to support launch and early operations TT&C functions for NS-201 using 17305.5 MHz); Request of Lockheed Martin Corp. for STA to Support LEOp TT&C Functions for EchoStar-7, File No. SES-STA-20020208-00160 (STA to support launch and early operations TT&C functions for EchoStar-7 satellite using 17.3-17.8 GHz band frequencies for Earth-to-space telecommand transmissions) (“EchoStar-7 TT&C STA”); Request of Lockheed Martin Corp. for STA to Support LEOp TT&C Functions of Astra 3B, File No. SES-STA-20100511-00579 (STA to support launch and early operations TT&C functions for Astra 3B using 17304 MHz). The EchoStar-7 TT&C STA request included a radiation hazard study for this frequency range that Lockheed Martin hereby incorporates by reference. *See* EchoStar-7 TT&C STA, at Attachment 3.

The 11701.5 MHz receive frequency is in the 11.7-12.2 GHz range that was authorized to Lockheed Martin under Call Sign E920702 and that is proposed in the license “replacement” application under Call Sign E7541. The parameters of operation are within the parameters in the pending application referenced in Note 1 above.

Lockheed Martin’s proposed transmissions on the 17305.0 MHz transmit frequency will use the emission designators for telecommand functions that are proposed in the pending license application, or will use carriers that do not exceed the highest e.i.r.p., e.i.r.p. density, and bandwidth prescribed in the application for the telecommand carriers. When no commands are being sent, a CW carrier that is within the emission envelope proposed in Lockheed Martin’s application, as amended, would be present. *See* File No. SES-AMD-20081219-01664, at Schedule B. The 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. Lockheed Martin notes that it is possible that during an unexpected emergency with the satellite, the power levels proposed for the earth station in the 2008 application as amended may need to be exceeded to help recover the satellite. Under these extremely unlikely circumstances, Lockheed Martin will make every effort to coordinate such operations with affected users, and will take all reasonable steps to swiftly eliminate any harmful interference caused. Lockheed Martin fully understands that all of its proposed launch and early-operations TT&C support for the BSAT-3c launch will be on a strictly non-harmful interference, non-protected basis.

Lockheed Martin has secured a temporary frequency coordination that covers the entire proposed STA window (June 1, 2011 through July 23, 2011) for operations on the BSAT-3c TT&C frequencies from its Carpentersville earth station facility. The report is attached to this Exhibit A.

Lockheed Martin believes that the limited operations it proposed in support of the launch of BSAT-3c – operations Lockheed Martin and the satellite operator will coordinate in advance with any and all potentially affected entities that operate communications systems in compliance with the Table of Frequency Allocations during the limited period of use – are required in the public interest. Lockheed Martin’s earth station will be part of a global network of control facilities that will be used to position the satellite as it progresses from transfer orbit to its final

location. The safe and orderly use of the entire geostationary orbital resource and protection of the hundreds of satellites from the U.S. and other countries that operate there depends in no small part on ensuring that the BSAT-3c satellite is controlled while over North America, and Lockheed Martin's earth station thus will serve a limited-duration, but nonetheless vital function.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, BSAT-3c 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.

The antenna to be used for operations under the proposed STA is already built. It is the same antenna that was previously authorized under Call Sign E920270 and that is now the subject of the pending application and reinstatement request described in Note 1 above, and, as noted, has been authorized for use on an STA-basis to support other satellite launches.

In sum, Lockheed Martin requests authority to operate its Carpentersville, NJ Ku-band earth station antenna to provide critical TT&C services during the launch and early operations phase of the BSAT-3c satellite, for a term of 14 days – June 1 to June 5 for calibration testing, and July 1 to July 23 for six to ten days of TT&C support operations..

EXHIBIT A

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: 05/23/2011 - 07/23/2011

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 May 14, 2010.

Company

ABC Radio Networks Assets, LLC
ABC, Inc. - WPVI-TV
ACCELACOM-BALTIMORE LLC
ADAMS COUNTY EMERGENCY MANAGEMENT AGENCY
ART Licensing Corp.
AT&T CORP
Airband Communications Inc
American Broadcasting Companies, Inc.
BUSINESS INFORMATION GROUP, INC.
Believe Wireless, LLC
Boeing Company
Borough of Fort Lee, New Jersey
Borough of Sayreville
Business Only Broadband, LLC
CABLEVISION LIGHTPATH
CAMP HILL SCHOOL DISTRICT
CAMPUS TELEVIDEO
CBS Broadcasting Inc
CECIL COUNTY PUBLIC SCHOOLS
COLUMBIA UNIVERSITY IN THE CITY NEW YORK
COMCAST CABLEVISION OF PHILADELPHIA LLC
CRISPUS ATTUCKS ASSOCIATION
Cape May County Municipal Utilities Auth
Cape May County, MIS Department
Carlisle Area School District
City of Bethlehem
City of Jersey City
City of Jersey City, Police Department
Clearwire Spectrum Holdings III, LLC
Commissioners of Caroline County

Company (Continued)

Conterra Ultra Broadband, LLC
County of Bergen, Bergen Cnty Police Dep
County of Hunterdon
Cumberland County, New Jersey
Cumberland Valley School District
DOVER AREA SCHOOL DISTRICT
DREXEL UNIVERSITY
DREXEL UNIVERSITY
Delmarva Power & Light Company
East Pennsboro Area School
Eastern Lancaster County School District
Enoch Pratt Free Library
Entergy Nuclear Indian Point 2, LLC
FIRST BOSTON CORPORATION
FORDHAM UNIVERSITY
Federal Communications Commission
Federal Home Loan Bank of New York
FiberTower Network Services Corp.
Franklin County Dept. of Emergency Servi
Freehold Township Police Department
Greenwich, Town of (CT)
HALIFAX AREA SCHOOL DISTRICT
HISPANIC INFORMATION AND TELECOMM NETWRK
Hopewell Radiology Group
Hotwire Communications
Hudson County MIS Department
IDT Corporation - IDT Spectrum
J & R ELECTRONIC INC
Jamaica Hospital Medical Center
LANCASTER GENERAL HOSPITAL
LAWRENCE SCHOOL DISTRICT
Last Mile Inc.
MARYLAND, STATE OF - MDOT - MTA
METRO NETWORKS COMMUNICATIONS INC
MINEOLA UNION FREE SCHOOL DISTRICT
MONTGOMERY, McCracken, Walker & Rhoads
MPX, Inc.
MTA - Long Island Railroad
Microwave Satellite Technologies, Inc.
Millennium Shore License Holdco, LLC
Monmouth County, NJ
NBC TELEMUNDO LICENSE CO.
NBC Telemundo License Co.
NEW JERSEY PUBLIC BROADCASTING AUTHORITY
NEW JERSEY STATE DEPT OF TRANSPORTATION
NEW YORK CITY HOUSING AUTHORITY
NEW YORK CITY DEPT OF INFO TECH & TELECO
NEW YORK CITY POLICE DEPARTMENT
NEW YORK CITY POLICE DEPARTMENT
NEW YORK POLICE DEPARTMENT - TARU
NEW YORK UNIVERSITY

Company (Continued)

NEXTEL COMM. OF THE MID-ATLANTIC
NEXTEL OF NEW YORK, INC
NW TECHNOLOGIES, LLC
NYU MEDICAL CENTER
Nassau County Government
Nassau County Police Department
Netrepid, Inc.
New Jersey Telcomm
New York Health and Hospitals Corp/North
New York Methodist Hospital
New York Power Authority
New York Presbyterian Hospital
New York SMSA Limited Partnership
New York State Police
Northern York County School District
Northrop Grumman Information Technology
OCEAN, COUNTY OF
Ocean, County of-Div of Wireless Tech.
Open Range Communications
PENNSYLVANIA MICROWAVE NETWORK INC.
PENNSYLVANIA TURNPIKE COMMISSION
PPL Telecom, LLC.
Philadelphia, City of
Plymouth Township Police Department
Port Authority of New York & New Jersey
Pottsville Area School District
RCN Telecom Services, LLC
READING HOSPITAL & MEDICAL CENTER
Red Rose Transit Authority
Rutgers, The State University of N.J.
SECOM NET
SHIPPENSBURG AREA SCHOOL DISTRICT
SONSHINE FAMILY TELEVISION CORPORATION
SOUTHEASTERN PENNSYLVANIA TRANSIT AUTH
SPEAR LEEDS AND KELLOGG INC
ST. LUKE'S HOSPITAL
SUSQUEHANNA TOWNSHIP SCHOOL DISTRICT
Sachem Central School District
Sesame Workshop
Sprint Spectrum LP DBA Sprint PCS
St. Joseph Medical Center
St. Lukes Cornwall Hospital
Steelton-Highspire School District
T-Mobile License LLC
T-Mobile License LLC
TELEMARK NETWORKS, INC
THE BROOKLYN HOSPITAL CENTER
THE HERSHEY COMPANY
THOMAS OLSZEWSKI, INC
TRIBUNE TELEVISION COMPANY

Company (Continued)

Telecom Transport Management, Inc
The Goldman Sachs Group, Inc.
Total Recall Corp
Towerstream Corp
ULTRAVISION INC
University of Medicine & Dentistry of NJ
Verizon New Jersey, Inc.
WDAS LICENSE LIMITED PARTNERSHIP
WESTCHESTER, COUNTY OF
WINEMILLER COMMUNICATIONS, INC.
WLIG TV INC
WXTU LICENSE LIMITED PARTNERSHIP
WYCKOFF HEIGHTS MEDICAL CENTER
York County Dept of Emergency Services
York Water Co

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: 05/17/2011
Job Number: 110514COMSJC01

Administrative Information

Status: TEMPORARY (Operation from 05/23/2011 to 07/23/2011)
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

Transmit

Manufacturer: TIW
Model: 14.2 Meter
Gain / Diameter: 63.9 dBi / 14.2 m
3-dB / 15-dB Beamwidth: 0.10° / 0.20°

Max Available RF Power (dBW/4 kHz): 31.1
(dBW/MHz): 31.1

Maximum EIRP (dBW/4 kHz): 95.0
(dBW/MHz): 95.0

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

Frequency Information

Transmit 18.0 GHz

Emission / Frequency Range (MHz): 1K03F3D / 17305.0
4K10G2D / 17305.0

Max Great Circle Coordination Distance: 250.3 km / 155.5 mi
Precipitation Scatter Contour Radius: 513.6 km / 319.1 mi

COMSEARCH

Earth Station Data Sheet

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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 18.0 GHz
Interference Objectives: Long Term -151.0 dBW/4 kHz 20%
Short Term -128.0 dBW/4 kHz 0.0025%
Max Available RF Power 31.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 18.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	3.54	112.22	-10.00	153.79
5	3.44	107.35	-10.00	155.60
10	4.05	102.50	-10.00	144.56
15	4.33	97.62	-10.00	140.64
20	3.97	92.72	-10.00	145.81
25	3.25	87.83	-10.00	159.79
30	3.56	82.95	-10.00	153.27
35	3.60	78.07	-10.00	152.69
40	3.62	73.19	-10.00	152.13
45	3.66	68.31	-10.00	151.48
50	3.42	63.48	-10.00	155.99
55	3.51	58.62	-10.00	154.24
60	3.29	53.83	-10.00	159.06
65	3.08	49.07	-10.00	163.28
70	3.20	44.28	-9.15	164.63
75	3.00	39.61	-7.95	174.18
80	2.76	35.05	-6.62	185.30
85	2.54	30.60	-5.14	196.53
90	2.27	26.37	-3.53	210.24
95	2.23	22.30	-1.71	220.40
100	2.55	18.41	0.38	224.49
105	2.55	15.42	2.29	234.37
110	2.11	14.08	3.29	250.31
115	2.43	13.66	3.61	244.78
120	2.11	15.55	2.21	243.91
125	2.45	18.11	0.55	227.81
130	2.22	21.59	-1.36	222.57
135	2.16	24.80	-2.86	216.09
140	2.65	27.42	-3.95	200.09
145	2.25	30.50	-5.11	202.78
150	2.21	33.07	-5.99	199.43
155	1.91	35.58	-6.78	202.61
160	2.13	37.30	-7.29	195.00
165	2.60	38.39	-7.61	183.82
170	2.41	39.69	-7.97	186.18
175	1.90	40.87	-8.29	195.77
180	1.90	41.11	-8.35	195.49
185	1.85	40.92	-8.30	196.96

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Antenna Mode Transmit 18.0 GHz
Interference Objectives: Long Term -151.0 dBW/4 kHz 20%
Short Term -128.0 dBW/4 kHz 0.0025%
Max Available RF Power 31.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 18.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.24	40.83	-8.27	213.92
195	1.36	39.56	-7.93	212.06
200	2.31	37.14	-7.25	191.73
205	1.76	35.72	-6.82	206.50
210	1.78	33.43	-6.10	209.28
215	2.34	30.43	-5.08	200.98
220	2.98	27.15	-3.85	193.73
225	4.04	23.36	-2.21	181.19
230	4.93	19.56	-0.29	177.70
235	4.30	16.77	1.39	195.81
240	4.35	13.69	3.59	207.16
245	3.60	12.73	4.38	225.03
250	2.38	14.15	3.23	243.80
255	2.22	16.10	1.83	239.15
260	2.59	18.79	0.15	222.56
265	3.08	22.21	-1.66	202.62
270	2.75	26.53	-3.59	199.79
275	2.58	30.96	-5.27	195.17
280	2.85	35.38	-6.72	182.86
285	3.20	39.91	-8.03	169.70
290	3.81	44.49	-9.21	152.14
295	4.44	49.15	-10.00	139.19
300	5.32	53.85	-10.00	129.00
305	5.47	58.70	-10.00	128.48
310	5.49	63.59	-10.00	128.29
315	5.43	68.49	-10.00	128.83
320	4.59	73.44	-10.00	137.16
325	3.78	78.36	-10.00	149.16
330	3.36	83.25	-10.00	157.29
335	3.12	88.13	-10.00	162.42
340	2.98	93.00	-10.00	165.37
345	3.16	97.87	-10.00	161.68
350	3.35	102.75	-10.00	157.39
355	3.44	107.62	-10.00	155.65

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: May 17, 2011