Approved by OMB
3060–0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATIONEnter a description of this application to identify it on the main menu:
Carpentersville TT&C STA for NILESAT NIL102 – 2018–04 (30–Day STA)

1. Applicant

Name:	Lockheed Martin Corporation	**Phone Number:**	703–413–5747
DBA Name:		**Fax Number:**	703–413–5908
Street:	2121 Crystal Drive Suite 100	**E–Mail:**	ryan.n.terry@lmco.com
City:	Arlington	**State:**	VA
Country:	USA	**Zipcode:**	22202 –
Attention:	Ryan N. Terry		

GRANTED
International Bureau

File # SES-STA-20180416-00359
E7541
Call Sign (or other identifier) Grant Date 5-15-18
Term Dates
From: 5/15/18 To: 6/4/18
Approved:

GRANTED
International Bureau

File # SES-STA-20180416-00359
Call Sign E7541 Grant Date 5-15-18
(or other identifier)
Term Dates
From: 5-15-18 To: 6-14-18
Approved: Paul E. Blais

Applicant: Lockheed Martin Corporation
Call Sign: E7541
File No.: SES-STA-20180416-00359
Special Temporary Authority (STA)

Lockheed Martin Corporation is granted STA to operate its earth station for 30 days at location 40°38'39.1" N/ 75°11'27.8" W (NAD83) in Carpentersville, New Jersey to conduct de-orbit activity of the NILESAT NIL102 satellite (Call Sign 2232) from the 7°W orbital location to its final geostationary orbital position. Telemetry, tracking, and control ("TT&C") services will be conducted on center frequencies: 17302.5 MHz (Earth-to-space) and on 12499.0 MHz (space-to-Earth) under the following conditions:

1) Uplink emission will be 800KF2D (Earth-to-space) and downlink emission will be 300KG2D (space-to-Earth). Operations of the 14.2 m antenna with antenna transmit gain of 63.5 dBi will not exceed the maximum eirp level of 83.0 dBW for all carriers, eirp density of 23 dBW/4kHz as specified in STA request. Any operation anomaly during this STA period that requires to take extraordinary measures, Lockheed Martin will notify the FCC as soon as possible of the activity needed.

2) Operations 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) Operations must be coordinated with all operators of satellites that use the same frequency bands and are in the de-orbit path. All operators of satellites in that path will be provided with an emergency 24x7 contact phone number information for the mission.

4) Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future Lockheed Martin Corporation 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.

6) Lockheed Martin Corporation must dispose of NILESAT NIL102 satellite in accordance with 47 C.F.R.§ 25.283.

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.

2. Contact

Name:	Ryan N. Terry	**Phone Number:**	703-413-5747
Company:	Lockheed Martin Corporation	**Fax Number:**	703-413-5908
Street:	2121 Crystal Drive	E-Mail:	ryan.n.terry@lmco.com
	Suite 100		
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?
◉ If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).
○ Governmental Entity ○ Noncommercial educational licensee
○ Other(please explain):

4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

○ Use Prior to Grant ○ Change Station Location ◉ Other

6. Requested Use Prior Date 05/14/2018	
7. CityCarpentersville	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.)

Lockheed Martin Corporation hereby requests Special Temporary Authority beginning May 14, 2018, to operate its Carpentersville, NJ fixed earth station (Call Sign E7541) to provide telemetry, tracking and control (TT&C) functions during the deorbit of the NILESAT NIL102 satellite. Specifically, authority is sought to transmit telecommand signals (Earth-to-

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 ○ No

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.

12. Description

Lockheed Martin Corporation hereby requests Special Temporary Authority beginning May 14, 2018, to operate its Carpentersville, NJ fixed earth station (Call Sign E7541) to provide telemetry, tracking and control (TT&C) functions during the deorbit of the NILESAT NIL102 satellite. Specifically, authority is sought to transmit telecommand signals (Earth-to-space) on the 17302.5 MHz center frequency, and to receive telemetry signals from the satellite (space-to-Earth) at the center frequency 12499.0 MHz.

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 deorbit operations for the NILESAT NIL102 satellite.

NIL102 is destined to commence deorbiting on May 15, 2018, from the 7° W.L. orbital location. Lockheed Martin's Carpentersville was selected as being optimal for providing secondary support for the deorbiting exercise.

Accordingly, Lockheed Martin requests to begin test transmissions on May 14, 2018 in preparation for the deorbit activity. Current projections are for the deorbit mission to be completed within 14 days. Nevertheless, Lockheed Martin respectfully requests that the duration of this STA be a total of thirty (30) days to cover any slippage in the date and duration of the mission.

1. Requested STA Operations

Lockheed Martin specifically seeks authority to transmit telecommand signals (Earth-to-space) on the 17302.5 MHz center frequency, and to receive telemetry signals from the satellite (space-to-Earth) on the center frequency 12499.0 MHz.

The proposed TT&C operations in support of the NIL102 deorbit will be on a strictly non-harmful interference, non-protected basis. Lockheed Martin's proposed transmissions will use total input power and emissions for Ku-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.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to NIL102 is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following phone numbers:

(609) 865-2658 (cellular)
(908) 859-4050 (earth station desk)

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

Lockheed Martin believes that the limited operations it proposes in support of the deorbit of the NIL102 satellite serve the public interest.

Lockheed Martin's Carpentersville earth station will be part of a global network of control and ranging facilities that will be used solely to position the satellite as it progresses from its on-station orbital 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 NIL102 satellite is controlled while 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 and ranging services during the deorbit mission of the NIL102 satellite, for a term of 30 days, commencing May 14, 2018.

TECHNICAL DETAILS OF SPECIAL TEMPORARY AUTHORITY

Satellite Characteristics

Satellite: NILESAT NIL102

Orbital Location: 7.0° W.L.

Manufacturer: Astrium

Launch Vehicle: Ariane 44LP

* * *

Earth Station Characteristics

Antenna: 14.2-m TIW Systems

Antenna Location: 40°38' 39.1" N / 075° 11' 27.8" W

Telecommand Uplink Frequencies:
17302.5 MHz (LHCP/RHCP)

Telemetry Downlink Frequencies:
12499.0 MHz (LHCP/RHCP)

Antenna Gain: 63.5 dBi @ 14 GHz

Antenna Power: 19.1 dBW (into the flange)

Maximum EIRP: 83.0 dBW for all carriers

EIRP Density: 23.0 dBW/4kHz

Uplink Emission: 800KF2D
Downlink Emission: 300KG2D

COMSEARCH®
A CommScope Company

March 21, 2018

Re: Lockheed Martin Corporation-Phillipsburg
CARPENTERSVILLE, NJ
Temporary Transmit-Only Earth Station
Operation Dates: 05/15/2018 - 05/25/2018
Job Number: 180321COMSGE01

Dear Frequency Coordinator:

On behalf of Lockheed Martin Corporation-Phillipsburg, we are forwarding the attached coordination data for a Temporary Transmit-Only Earth Station to be located at the site referenced above.

This earth station will transmit only on the satellite(s) and frequency or frequencies as described in the attached data. Please do not report cases involving non-active paths or frequencies outside the specified range.

If there are any questions concerning this coordination notice, please contact Comsearch.

Sincerely,

COMSEARCH

Gary K. Edwards
Senior Manager
gedwards@comsearch.com

Enclosure(s)

Date:	03/21/2018
Job Number:	180321COMSGE01

Administrative Information	
Status	TEMPORARY (Operation from 05/15/2018 to 05/25/2018)
Call Sign	TEMP05
Licensee Code	RCASTR
Licensee Name	Lockheed Martin Corporation-Phillipsburg

Site Information	**CARPENTERSVILLE, NJ**
Venue Name	
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		63.9 dBi / 14.2 m	
3-dB / 15-dB Beamwidth		0.12° / 0.22°	
Max Available RF Power	(dBW/4 kHz)	-3.9	
	(dBW/MHz)	20.1	
Maximum EIRP	(dBW/4 kHz)	60.0	
	(dBW/MHz)	84.0	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%

Frequency Information	**Transmit 18.0 GHz**
Emission / Frequency Range (MHz)	800KF2D / 17302.1 - 17302.9
Max Great Circle Coordination Distance	415.3 km / 258.0 mi
Precipitation Scatter Contour Radius	128.5 km / 79.9 mi

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 18.0 GHz		
Interference Objectives: Long Term	-154.0 dBW/4 kHz	20%	
Short Term	-131.0 dBW/4 kHz	0.0025%	
Max Available RF Power	-3.9 (dBW/4 kHz)		

			Transmit 18.0 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	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	100.00
75	3.07	27.61	-4.03	100.00
80	3.04	22.64	-1.87	100.00
85	3.06	17.68	0.82	100.00
90	3.07	12.74	4.37	100.00
95	2.74	8.00	9.42	120.96
100	2.73	3.74	17.68	150.83
105	2.58	3.84	17.40	255.15
110	2.72	7.37	10.31	124.38
115	2.80	10.92	6.05	107.98
120	2.62	14.56	2.92	100.72
125	2.05	18.40	0.38	102.88
130	1.63	22.02	-1.57	106.53
135	2.22	24.75	-2.84	100.00
140	2.76	27.32	-3.91	100.00
145	2.31	30.46	-5.09	100.00
150	2.22	33.06	-5.98	100.00
155	1.94	35.55	-6.77	100.00
160	2.22	37.22	-7.27	100.00
165	2.67	38.33	-7.59	100.00
170	2.46	39.65	-7.95	100.00
175	1.94	40.84	-8.28	100.00
180	1.90	41.11	-8.35	100.00
185	1.86	40.92	-8.30	100.00

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 18.0 GHz		
Interference Objectives: Long Term	-154.0 dBW/4 kHz	20%	
Short Term	-131.0 dBW/4 kHz	0.0025%	
Max Available RF Power	-3.9 (dBW/4 kHz)		

Transmit 18.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.23	40.84	-8.28	100.00
195	1.33	39.59	-7.94	100.00
200	2.37	37.09	-7.23	100.00
205	1.76	35.72	-6.82	100.00
210	1.77	33.44	-6.11	100.00
215	2.21	30.54	-5.12	100.00
220	3.42	26.81	-3.71	100.00
225	3.50	23.78	-2.41	100.00
230	4.90	19.59	-0.30	100.00
235	4.41	16.68	1.44	100.00
240	4.50	13.22	3.97	100.00
245	3.77	10.24	6.75	100.00
250	2.53	7.51	10.11	126.88
255	2.28	4.01	16.92	274.70
260	2.60	3.20	19.36	415.30
265	3.11	7.34	10.36	117.87
270	3.39	12.19	4.85	100.00
275	2.86	17.22	1.10	100.00
280	2.80	22.19	-1.65	100.00
285	3.05	27.15	-3.84	100.00
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