

## **Exhibit A**

**Lockheed Martin Corp.  
Earth Station STA  
Call Sign E050272  
October 2010**

### **Description**

Lockheed Martin Corporation ("Lockheed Martin") hereby respectfully requests special temporary authority ("STA") to continue operating its Napa, California earth station (Call Sign E050272) at slight variance from the license for an additional period of 60 days, while efforts continue to remedy the effects of an anomaly that has befallen the spacecraft that hosts the LM-RPS1 satellite. Specifically, Lockheed Martin requests a 60-day extension of the STA now in force for Call Sign E050272 in File No. SES-STA-20100901-01116 ("September STA").

The Galaxy-15 satellite, which is operated by PanAmSat Licensee Corp. ("PLC") nominally at the 133° W.L. orbital location and is the host platform for LM-RPS1, suffered an anomaly of unknown origin in early April 2010. Since the onset of the anomaly, Lockheed Martin has been able to continue using the Napa earth station to access the LM-RPS1 payload in its intended manner for the provision of radionavigation-satellite service ("RNSS"). To the extent that the space station has moved outside its designated station-keeping box, Lockheed Martin's operation of the Napa earth station with a few slightly altered transmission parameters takes place under the authority granted in the September STA.

PLC has apprised Lockheed Martin that, notwithstanding the ongoing effects of the anomaly that befell Galaxy-15, it expects that continued utilization of the LM-RPS1 satellite by Lockheed Martin will be viable. Lockheed Martin requests authority to continue operating LM-RPS1 under the conditions authorized in the September STA for a period of 60 additional days – or until January 6, 2011.

As the satellite continues its very slow drift eastward from the 133° W.L. orbital location, the operational elevation angle of the earth station is now declining. During the 60-day term requested in this STA, the elevation angle from the earth station to the satellite will be at least 38.3°. With respect to other technical transmission parameters Lockheed Martin was conditionally authorized to use in the September STA (*see* File No. SES-STA-20100901-01116, at Exhibit A, p.1), Lockheed Martin requests that the azimuth range be further extended on the east to 142.3° from the STA eastern limit of 157.8 ° under the September STA.

With all of the cumulative changes over the last six months, Lockheed Martin determined that it would be appropriate to undertake a frequency coordination for the transmit frequencies under the operational mode of the earth station operating with LM-RPS1 as it drifts eastward. This report, from Comsearch, is included as Attachment 1 to this Exhibit A. The Comsearch report covers a satellite arc that extends to 75° W.L., an elevation angle range of 24.3° to 44.3° and an azimuth range with an eastern limit that is between 119.8° and 197°. Therefore, the

Report includes the range of elevation angles and eastern azimuth range proposed for operation through January 6, 2011. The report shows no potential interference cases.

Lockheed Martin has notified the GPS Wing (operators of the co-frequency GPS system) of the status of the LM-RPS1 satellite, as required. Lockheed Martin confirms that it has coordinated at-variance operations of LM-RPS1 with the GPS Wing for the duration of the requested STA term. Lockheed Martin recognizes and accepts that all operations at variance with its license for Call Sign E050272 are on a non-harmful interference/non-protected basis.

Continued use of a viable LM-RPS1 satellite via the Napa earth station by Lockheed Martin is in the public interest. The LM-RPS1/E050272 network is part of a GPS augmentation system that provides the Federal Aviation Administration (the sole customer of Lockheed Martin for LM-RPS1 capacity) with enhanced navigation data that is used in managing the nation's air traffic and control systems. Any disruption in service that is otherwise viable would cause a serious prejudice to the public and national interests. As long as Lockheed Martin can reliably communicate that information over LM-RPS1 via its Napa earth station without harmfully interfering with any authorized users of the spectrum, it should be allowed to do so.

Lockheed Martin remains prepared to submit permanent applications for the modified authority should such submissions be necessary or appropriate following resolution of the anomaly that affected Galaxy-15. Under these circumstances, a 60-day STA is appropriate. *See* 47 C.F.R. § 25.120(b)(2).

**ATTACHMENT 1**

**FREQUENCY COORDINATION AND INTERFERENCE  
ANALYSIS REPORT**

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Lockheed Martin Corporation  
Napa, California  
(Call Sign: E050272)**

**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
May 27, 2010

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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, based upon the restrictions noted in Section 2 (Summary of Results).

## 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 most cases.

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 and frequency separation are considered on the interfering paths, sufficient losses exist to negate harmful interference from occurring with the transmit-only earth station. The transmit spectrum will be limited to frequencies 6639.27 MHz and 6690.42 MHz.

Company

None

No carriers reported potential interference cases.

### 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 April 28, 2010.

#### Company

Alameda County of California  
CALIFORNIA STATE UNIV SACRAMENTO  
CALIFORNIA STATE UNIVERSITY  
CBS Broadcasting Inc  
CONTRA COSTA COUNTY COMMUNICATIONS DEPT.  
CRYSTAL SMR INC.  
Cagal Cellular Communications Corp.  
California Rural Service Area #1, Inc.  
California, State of  
City & County of San Francisco PUC  
County of San Mateo  
EAST BAY MUNICIPAL UTILITY DISTRICT  
EAST BAY REGIONAL PARK DISTRICT  
Edge Wireless LLC- Northern California  
GOLDEN GATE BRIDGE HWY & TRANS DIST  
GTE Mobilnet of California LTD Partnersh  
LOS RIOS COMMUNITY COLLEGE DISTRICT  
M.U.T. Licensing, LLC  
MODESTO IRRIGATION DISTRICT  
Marin County of California  
NEXTEL OF CALIFORNIA INC  
Napa, City of  
Napa, County of  
New Cingular Wireless PCS LLC - N CAL  
PACIFIC SATELLITE CONNECTION, INC  
Pacific Gas and Electric Company  
Pappas Radio of California  
RICHMOND CITY CALIFORNIA  
Sacramento County  
Sacramento Municipal Utility District  
Sacramento Valley Limited Partnership  
SACRAMENTO, CITY OF  
Sacramento Television Stations, Inc  
San Joaquin County  
San Mateo Count Transit District - PCJPB  
Santa Clara, County of



Company

Solano County Communications Division  
Sonoma County, California  
Transmission Agency of Northern Californ  
Union Pacific Railroad Company  
YUBA COUNTY WATER AGENCY  
Yolo County Flood Control & Wtr Con Dist  
enXco, Inc.  
East Bay Regional Park Police  
KGO Television, Inc.  
YOUNG BROADCASTING OF SAN FRANCISCO INC

## **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: 05/27/2010  
Job Number: 100428COMSJC08

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**Administrative Information**

Status	ENGINEER PROPOSAL
Call Sign	E050272
Licensee Code	LOKROK
Licensee Name	Lockheed Martin Corporation

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**Site Information** **NAPA, CALIFORNIA**

Venue Name	
Latitude (NAD 83)	38° 14' 41.6" N
Longitude (NAD 83)	122° 16' 45.8" W
Climate Zone	A
Rain Zone	3
Ground Elevation (AMSL)	12.19 m / 40.0 ft

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**Link Information**

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	75° W to 133° West Longitude
Azimuth Range	119.8° to 197.0°
Corresponding Elevation Angles	24.3° / 44.3°
Antenna Centerline (AGL)	7.32 m / 24.0 ft

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**Antenna Information****Transmit**

Manufacturer	Vertex/RSI
Model	11.1 MKX
Gain / Diameter	55.5 dBi / 11.1 m
3-dB / 15-dB Beamwidth	0.28° / 0.59°

Max Available RF Power	(dBW/4 kHz)	-10.6
	(dBW/MHz)	13.4

Maximum EIRP	(dBW/4 kHz)	44.9
	(dBW/MHz)	68.9
	(dBW)	82.0

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

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**Frequency Information****Transmit 6.0 GHz**

Emission / Frequency Range (MHz)	20M5G7D / 6639.27
	20M5G7D / 6690.42

Max Great Circle Coordination Distance	141.3 km / 87.8 mi
Precipitation Scatter Contour Radius	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

### NAPA, CA

Licensee Name Lockheed Martin Corporation  
Latitude (NAD 83) 38° 14' 41.6" N  
Longitude (NAD 83) 122° 16' 45.8" W  
Ground Elevation (AMSL) 12.19 m / 40.0 ft  
Antenna Centerline (AGL) 7.32 m / 24.0 ft  
Antenna Model Vertex/RSI 11.1 MKX  
Antenna Mode Transmit 6.0 GHz  
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%  
Short Term -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -10.6 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	116.90	-10.00	141.27
5	0.00	112.44	-10.00	141.27
10	0.80	108.06	-10.00	104.12
15	0.47	103.48	-10.00	119.97
20	0.47	98.92	-10.00	120.52
25	0.47	94.35	-10.00	119.86
30	1.43	89.78	-10.00	100.00
35	2.13	85.14	-10.00	100.00
40	2.04	80.52	-10.00	100.00
45	2.98	75.82	-10.00	100.00
50	2.80	71.22	-10.00	100.00
55	3.61	66.48	-10.00	100.00
60	3.70	61.86	-10.00	100.00
65	4.52	57.10	-10.00	100.00
70	4.62	52.52	-10.00	100.00
75	4.38	48.11	-10.00	100.00
80	4.21	43.77	-9.03	100.00
85	4.06	39.56	-7.93	100.00
90	3.85	35.55	-6.77	100.00
95	3.03	32.18	-5.69	100.00
100	3.40	28.43	-4.35	100.00
105	3.04	25.66	-3.23	100.00
110	3.15	23.17	-2.12	100.00
115	3.47	21.31	-1.22	100.00
120	3.37	20.90	-1.00	100.00
125	3.76	21.14	-1.13	100.00
130	5.54	21.26	-1.19	100.00
135	5.07	24.34	-2.66	100.00
140	5.40	27.15	-3.84	100.00
145	5.02	30.31	-5.04	100.00
150	5.04	32.89	-5.93	100.00
155	4.39	35.74	-6.83	100.00
160	3.95	38.09	-7.52	100.00
165	2.39	41.13	-8.35	100.00
170	2.29	42.43	-8.69	100.00
175	2.11	43.34	-8.92	100.00
180	1.93	43.77	-9.03	100.00
185	2.43	43.02	-8.84	100.00

# COMSEARCH

## Earth Station Data Sheet

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Latitude (NAD 83) 38° 14' 41.6" N  
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Ground Elevation (AMSL) 12.19 m / 40.0 ft  
Antenna Centerline (AGL) 7.32 m / 24.0 ft  
Antenna Model Vertex/RSI 11.1 MKX  
Antenna Mode Transmit 6.0 GHz  
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%  
Short Term -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -10.6 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	2.43	42.33	-8.67	100.00
195	2.80	41.53	-8.46	100.00
200	2.80	41.58	-8.47	100.00
205	2.63	42.28	-8.65	100.00
210	2.63	43.28	-8.91	100.00
215	2.10	45.19	-9.38	100.00
220	0.67	48.21	-10.00	110.11
225	0.52	50.38	-10.00	116.77
230	0.00	53.10	-10.00	141.27
235	0.00	55.66	-10.00	141.27
240	0.00	58.43	-10.00	141.27
245	0.00	61.38	-10.00	141.27
250	0.00	64.48	-10.00	141.27
255	0.00	67.71	-10.00	141.27
260	0.25	70.95	-10.00	136.81
265	0.46	74.32	-10.00	121.12
270	0.51	77.81	-10.00	117.35
275	0.41	81.38	-10.00	125.16
280	0.42	84.96	-10.00	124.41
285	0.44	88.56	-10.00	122.34
290	0.82	92.17	-10.00	103.25
295	0.81	95.79	-10.00	103.51
300	0.76	99.38	-10.00	105.90
305	1.16	103.03	-10.00	100.00
310	0.73	106.45	-10.00	107.20
315	0.85	109.93	-10.00	101.99
320	0.90	113.31	-10.00	100.00
325	0.98	116.61	-10.00	100.00
330	0.84	119.68	-10.00	102.21
335	0.00	122.14	-10.00	141.27
340	0.00	124.87	-10.00	141.27
345	0.00	127.37	-10.00	141.27
350	0.00	125.66	-10.00	141.27
355	0.00	121.31	-10.00	141.27

## 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  
Principal Frequency Planner  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Va.20147

DATED: May 27, 2010