Exhibit B

Interference Analysis Report

An Assessment of the Impact of Radiolocation Systems Operating in 3.1-3.7 GHz Band on Fixed Satellite Services Earth Station Receiver

Prepared for

Intelsat License LLC

TRANSMIT-RECEIVE EARTH STATION (9.0 METER)

FCC CALL SIGN: KA264

Site Name: Hagerstown, Maryland

Prepared By

COMSEARCH

December 3, 2012

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1.0 Introduction

Interference calculations were performed to determine the potential for in-band and out-of-band interference from Radiolocation Systems operating in the 3.1 to 3.7 GHz band[1]. The geographical positions and operating parameters of these systems was derived from NTIA Document TR-99-361[2].

2.0 Radiolocation Systems in the 3.1 – 3.7 GHz Band

High powered mobile and fixed radar systems operated by the Federal Government operate in the 3.1 – 3.7 GHz band. These radars are used to search for and track near-surface and high-altitude airborne projectiles, sea surveillance, and airborne objects. The NTIA report referenced above has identified the locations for two types of systems: land-based and shipboard based. Also included in the report are the operating characteristics of these radars. There are two prevalent types of shipboard radars, denoted as type A and Type B, and one type of ground-based radar. An Airborne System radar is also specified. This analysis will concern itself with interference from the ground based and shipboard based radars based upon the relative operating positions and parameters specified in the NTIA report.

A summary of the operating parameters for the shipboard and ground based radar systems is shown below:

Table 1 – Technical Characteristics of 3.1-3.7 GHz Radiolocation Systems

Characteristic	Shipboard System A	Shipboard System B	Ground Based System
Modulation	P0N	Q7N	P0N
Tuning Range (GHz)	3.5-3.7	3.1-3.5	3.1-3.4
Peak transmit Power (MW)	1	4	0.12
Pulse Width (μsec.)	1.0	3.5-51.2	10.75
Pulse Repetition Rate (kHz)	1.125	0.152-6.0	2793.3-5050.51
Duty Cycle (%)	0.001	0.8-2.0	0.041
Transmit 3-dB Bandwidth (MHz)	4,16.6	4	1,10
Antenna Type	Reflector	Phased Array	Phase Scan Array
Antenna Mainbeam Gain (dBi)	32	42	36
Antenna Centerline (m)	46	20	46

[1] This report is being provided as required under Footnote US 245.

[2] National Telecommunications and Information Administration, U.S. DEPARTMENT OF COMMERCE, NTIA Report TR 99-361, *TECHNICAL CHARACTERISTICS OF RADIOLOCATION SYSTEMS OPERATING IN THE 3.1-3.7 GHz BAND AND PROCEDURES FOR ASSESSING EMC WITH FIXED EARTH STATION RECEIVERS*, (December 1999).

3.0 Earth Station System Parameters

The Fixed Satellite Service Earth Station's operational parameters are shown in the Tables 2 and 3 below:

TABLE 2 - SATELLITE EARTH STATION PARAMETERS AND COORDINATION DATA

Administrative Information					
Status		ENGINEER PROPOSAL			
Call Sign		KA264			
Licensee Code		INTELS			
Licensee Name		Intelsat License LLC			
Site Information		**HAGERSTOWN, MARYLAND**			
Venue Name					
Latitude (NAD 83)		39° 35' 54.8" N			
Longitude (NAD 83)		77° 45' 21.1" W			
Climate Zone		A			
Rain Zone		2			
Ground Elevation (AMSL)		167.64 m / 550.0 ft			
Link Information					
Satellite Type		Geostationary			
Mode		TR - Transmit-Receive			
Modulation		Analog and Digital			
Satellite Arc		18° W to 42° West Longitude			
Azimuth Range		110.4° to 131.5°			
Corresponding Elevation Angles		14.4° / 31.3°			
Antenna Centerline (AGL)		5.18 m / 17.0 ft			
Antenna Information		**Receive - V40901**		**Transmit - V60901**	
Manufacturer		VERTEX COMM.		VERTEX COMM.	
Model		9 KPC		9 KPC	
Gain / Diameter		50.1 dBi / 9.0 m		53.5 dBi / 9.0 m	
3-dB / 15-dB Beamwidth		0.55° / 1.20°		0.40° / 0.80°	
Max Available RF Power	(dBW/4 kHz)			SEE ATTACHMENT 1	
	(dBW/MHz)			SEE ATTACHMENT 1	
Maximum EIRP	(dBW/4 kHz)			SEE ATTACHMENT 1	
	(dBW/MHz)			SEE ATTACHMENT 1	
	(dBW)			SEE ATTACHMENT 1	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-144.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Frequency Information		**Receive 4.0 GHz**		**Transmit 6.1 GHz**	
Emission / Frequency Range (MHz)		N0N / 3625.0 - 4200.0		N0N / 5850.0 - 6425.0	
		660KF2D / 3625.0 - 4200.0		660KF2D / 5850.0 - 6425.0	
		1M00F2D / 3625.0 - 4200.0		1M00F2D / 5850.0 - 6425.0	
		56K0G7W - 72M0G7W / 3625.0 - 4200.0		56K0G7W - 72M0G7W / 5850.0 - 6425.0	
Max Great Circle Coordination Distance		302.9 km / 188.2 mi		191.9 km / 119.2 mi	
Precipitation Scatter Contour Radius		518.5 km / 322.2 mi		100.0 km / 62.1 mi	

Vertex Communications:
Model: 9 Meter KPC

4 GHz Gain: 50.1 dBi
6 GHz Gain: 53.5 dBi

Satellite Arc: 18.0 to 42.0 West Longitude

Receive Band: 3625.0 to 4200.0 MHz

Emissions

N0N
660KF2D
1M00F2D
56KG7W – 72M0G7W

Satellite Arc: 18.0 to 42.0 West Longitude

Transmit Band: 5850.0 – 6425.0 MHz

Emission	RF Power Density (dBW/4 kHz)	EIRP/Carrier (dBW)	EIRP Density (dBW/ 4 kHz)
N0N	-2.7	50.8	50.8
660KF2D	-2.7	73.0	50.8
1M00F2D	-2.7	74.8	50.8
56K0G7W to 72M0G7W	-2.7 to -14.1	62.3 to 82.0	50.8 to 39.4

Coordination Values	**HAGERSTOWN, MD**			
Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	39° 35' 54.8" N			
Longitude (NAD 83)	77° 45' 21.1" W			
Ground Elevation (AMSL)	167.64 m / 550.0 ft			
Antenna Centerline (AGL)	5.18 m / 17.0 ft			
Antenna Model	VERTEX COMMUNICATIONS 9 KPC			
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-144.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-2.7 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.32	109.75	-15.90	226.95	-15.50	137.78
5	0.25	104.91	-15.90	233.94	-15.50	143.72
10	0.23	100.07	-15.90	236.63	-15.50	146.05
15	0.26	95.23	-15.90	233.45	-15.50	143.30
20	0.25	90.38	-15.90	233.83	-15.50	143.63
25	0.24	85.53	-15.90	235.39	-15.50	144.98
30	0.00	80.69	-16.00	239.39	-15.53	148.81
35	0.23	75.84	-18.55	224.33	-16.38	143.56
40	0.31	71.00	-18.90	214.07	-16.50	135.45
45	0.00	66.21	-15.87	240.07	-16.50	145.65
50	0.00	61.41	-14.90	245.08	-16.50	145.65
55	0.00	56.62	-14.22	248.66	-16.50	145.65
60	0.00	51.87	-13.27	253.97	-16.50	145.65
65	0.00	47.14	-12.33	259.25	-16.50	145.65
70	0.00	42.47	-11.39	264.62	-14.47	152.41
75	0.00	37.85	-9.61	275.23	-11.64	162.68
80	0.00	33.34	-7.23	290.19	-10.17	170.01
85	0.00	28.96	-5.90	298.99	-8.87	175.03
90	0.00	24.79	-5.90	298.99	-6.42	184.54
95	0.00	20.97	-5.90	298.99	-4.89	190.43
100	0.00	17.70	-5.90	298.99	-4.63	191.41
105	0.00	15.37	-5.90	298.99	-4.62	191.47
110	0.00	14.42	-5.32	302.91	-4.67	191.25
115	0.00	15.12	-5.90	298.99	-4.66	191.30
120	0.00	17.27	-5.90	298.99	-4.51	191.88
125	0.00	20.41	-5.90	298.99	-4.67	191.28
130	0.00	23.83	-5.90	298.99	-6.03	186.02
135	0.00	27.11	-5.90	298.99	-7.77	179.33
140	0.00	30.23	-5.99	298.38	-9.55	172.43
145	0.00	33.14	-7.16	290.70	-10.13	170.16
150	0.00	35.82	-8.39	282.82	-10.83	165.81
155	0.00	38.38	-9.93	273.31	-11.85	161.88
160	0.00	41.30	-11.16	265.98	-13.54	155.68
165	0.00	44.53	-11.81	262.23	-16.13	146.86
170	0.00	48.01	-12.50	258.27	-16.50	145.65
175	0.00	51.67	-13.23	254.18	-16.50	145.65
180	0.00	55.49	-14.00	250.01	-16.50	145.65
185	0.00	59.43	-14.79	245.68	-16.50	145.65

Coordination Values	**HAGERSTOWN, MD**			
Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	39° 35' 54.8" N			
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Ground Elevation (AMSL)	167.64 m / 550.0 ft			
Antenna Centerline (AGL)	5.18 m / 17.0 ft			
Antenna Model	VERTEX COMMUNICATIONS 9 KPC			
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-144.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-2.7 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	63.46	-14.90	245.08	-16.50	145.65
195	0.00	67.57	-16.95	234.66	-16.50	145.65
200	0.00	71.73	-18.90	225.46	-16.50	145.65
205	0.00	75.94	-18.90	225.46	-16.50	145.65
210	0.00	80.17	-16.32	237.82	-15.64	148.46
215	0.30	84.41	-15.90	228.84	-15.50	139.37
220	0.31	88.70	-15.90	227.66	-15.50	138.38
225	0.54	92.99	-15.90	207.53	-15.50	122.50
230	0.39	97.27	-15.90	219.88	-15.50	133.18
235	0.31	101.53	-15.90	228.24	-15.50	138.86
240	0.36	105.78	-15.90	222.71	-15.50	134.25
245	0.51	110.02	-15.92	209.05	-15.50	123.92
250	0.42	114.16	-19.23	205.74	-16.33	128.81
255	0.52	118.30	-19.90	194.28	-16.50	120.53
260	0.56	122.34	-19.90	192.10	-16.50	118.63
265	0.52	126.25	-19.90	194.28	-16.50	120.54
270	0.49	130.03	-19.90	196.15	-16.50	122.17
275	0.42	133.62	-19.90	202.43	-16.50	127.79
280	0.40	137.02	-19.90	204.37	-16.50	129.55
285	0.26	140.07	-19.90	214.68	-16.50	139.84
290	0.21	142.83	-19.90	220.27	-16.50	145.00
295	0.22	145.21	-19.90	219.35	-16.50	144.14
300	0.22	147.08	-19.90	218.89	-16.50	143.71
305	0.34	148.44	-19.90	207.75	-16.50	133.55
310	0.38	149.07	-19.90	206.14	-16.50	131.18
315	0.30	148.85	-19.90	211.02	-16.50	136.50
320	0.22	147.44	-19.90	219.34	-16.50	144.14
325	0.00	142.86	-19.90	220.97	-16.50	145.65
330	0.24	138.33	-19.90	216.84	-16.50	141.82
335	0.36	133.68	-19.90	205.56	-16.50	132.82
340	0.35	128.94	-19.90	206.26	-16.50	133.46
345	0.32	124.17	-19.90	209.36	-16.50	135.00
350	0.26	119.37	-19.90	214.95	-16.50	140.09
355	0.35	114.58	-19.56	207.40	-16.42	133.49

4.0 Interference Calculations

The interference was calculated into the earth station receive system for both in-band and out-of-band interference. The interference power level was calculated using the formula below:

$$P_r = P_t + G_t - FSL - OHLOSS + G_{es} - LL_t - LL_{es}$$

Where:

P_r : Interference power level received at victim earth station, in dBW
P_t: Transmitter power of Radiolocation system, in dBW
G_t: Gain of Radiolocation transmit system, in dBi
FSL: Free Space Loss between radiolocation system and earth station, in dB
OHLOSS: Over-the-Horizon losses between radiolocation system and earth station, in dB
G_{es}: Horizon gain of the earth station toward radiolocation transmitter, in dBi
LL_t: Line losses of the radiolocation system, in dB (assume 2dB per NTIA report)
LL_{es}: Line losses of the earth station system, in dB (assume 0 dB unless known)

This interference power level was then compared to in-band and out-of-band interference criteria. The in-band criteria was developed using ITU and FCC recommendations[3]. The out-of-band interference criteria was developed using the following:

The earth station's low –noise amplifier front-end overload criteria of was determined using the following calculations:

$$T = C - G$$

Where:

T = input threshold at which front-end overload occurs, dBW
C = output 1 dB gain compression point of the LNA, typical -20 dBW
G = Gain of the LNA, dB

For the purposes of this report it was assumed that the low-noise amplifier would not provide any out-of-band frequency rejection, thus no Frequency Dependent Rejection values based upon any RF selectivity, such as pre-LNA filtering or inherent LNA filtering, have been assumed. The maximum level of interference includes the input saturation threshold value minus a 10 dB output backoff value to consider in operation levels

The maximum interference power receive, P_r, allowable then becomes:

$$\text{Max } P_r \geq T - IPBO$$

For a 65 dB gain LNA this value is -95 dBW. In the absence of manufacturer LNA/LNB specifications the following typical values have been used:

T = -95 dBW
C = -20 dBW
G = 65 dB

The propagation model to determine the over-the-horizon loss is the NSMA OH-Loss model[4]. When the propagation link is very lengthy, over 250 miles, an estimated OH-loss using a rounded earth modeling value has been used.

[3] FCC Rules 47CFR25.251 by reference ITU Radio Regulations Appendix S7.
[4] National Spectrum Managers Association has developed an industry accepted version which incorporates NBS Tech Note 101.

5.0 Summary of Results

The summary calculations are shown for all shipboard based and land based systems in Tables 4 through 8 below. Whenever Radar A and B are possibly in use, the interference calculations have assumed the higher powered systems (Radar B). The antenna elevation for the Ground Based systems was assumed to be 46 m even though it was not specified in the NTIA report.

Table 4 Shipboard Radar A Land-Based Test and Training Sites													
Radar Location		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
Pensacola,	FL	302128	0871626	223.0	835.1	NO	-166.3	-82.6	N/A	-248.8	-204.7	NO	NO
Pascagoula,	MS	302200	0882900	226.8	880.6	NO	-166.7	-83.5	N/A	-250.2	-206.1	NO	NO
St.Inigoes,	MD	381000	0762300	142.7	123.4	YES	-149.6	-58.8	-58.8	-208.4	-154.4	YES	NO
Table 5 Shipboard Radar B Land-Based Test and Training Sites													
Radar Location		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
Moorestown,	NJ	395849	0745630	79.1	152.1	YES	-151.5	-67.8	-67.8	-219.3	-150.5	YES	NO
Wallops Island,	VA	375600	0752800	132.2	168.8	YES	-152.4	-66.7	-66.7	-219.1	-148.9	YES	NO
Table 6 Shipboard Radars A and B Home Ports													
Radar Location		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
Bath,	ME	435425	0694848	51.4	506.9	NO	-161.9	-73.9	N/A	-235.8	-174.7	NO	NO
Bremerton,	WA	473324	1223811	299.2	2318.6	NO	-175.1	-100.3	N/A	-275.4	-219.3	NO	NO
Everett,	WA	475858	1221354	300.0	2298.5	NO	-175.0	-100.2	N/A	-275.2	-219.1	NO	NO
Mayport,	FL	302334	0812427	199.1	667.5	NO	-164.3	-78.7	N/A	-243.0	-185.9	NO	NO
Norfolk,	VA	365200	0762100	157.5	203.4	YES	-154.0	-67.4	-67.4	-221.4	-156.5	NO	NO
Pascagoula,	MS	302253	0882933	226.9	880.2	NO	-166.7	-83.5	N/A	-250.2	-190.1	NO	NO
Pearl Harbor,	HI	212000	1580000	275.6	4950.9	NO	-181.7	-113.5	N/A	-295.2	-239.1	NO	NO
Portland,	ME	434100	0701800	51.4	478.0	NO	-161.4	-72.9	N/A	-234.3	-173.2	NO	NO
San Diego	CA	324105	1170800	269.4	2253.2	NO	-174.9	-99.8	-73.3	-274.7	-218.6	NO	NO

Table 7 Naval At-Sea Operational Areas													
Operational Area	Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
AFWTF (North Range)												
AFWTF (NR)1	183000	0670000	153.3	1592.2	NO	-171.9	-93.8	N/A	-265.6	-198.0	NO	NO
AFWTF (NR)2	200000	0670000	151.7	1496.5	NO	-171.3	-92.7	N/A	-264.0	-196.4	NO	NO
AFWTF (NR)3	221000	0654800	146.3	1395.2	NO	-170.7	-91.5	N/A	-262.2	-194.6	NO	NO
AFWTF (NR)4	221000	0652000	145.2	1409.5	NO	-170.8	-91.7	N/A	-262.5	-194.8	NO	NO
AFWTF (NR)5	185000	0620000	142.5	1718.0	NO	-172.5	-95.1	N/A	-267.6	-197.6	NO	NO
AFWTF (NR)6	185000	0620000	142.5	1718.0	NO	-172.5	-95.1	N/A	-267.6	-197.6	NO	NO
AFWTF (NR)7	182500	0643000	148.0	1664.9	NO	-172.2	-94.6	N/A	-266.8	-199.2	NO	NO
AFWTF (NR)8	183000	0644500	148.4	1652.5	NO	-172.2	-94.4	N/A	-266.6	-199.0	NO	NO
AFWTF (NR)9	183000	0663800	152.4	1601.4	NO	-171.9	-93.9	N/A	-265.8	-198.2	NO	NO
AFWTF (South Range)												
AFWTF (SR)1	180500	0675500	155.7	1597.3	NO	-171.9	-93.8	N/A	-265.7	-200.9	NO	NO
AFWTF (SR)2	180500	0652700	150.3	1659.0	NO	-172.2	-94.5	N/A	-266.7	-199.1	NO	NO
AFWTF (SR)3	181500	0651000	149.5	1656.3	NO	-172.2	-94.5	N/A	-266.7	-199.0	NO	NO
AFWTF (SR)4	181500	0641000	147.5	1685.1	NO	-172.4	-94.8	N/A	-267.1	-199.5	NO	NO
AFWTF (SR)5	170000	0641000	148.8	1762.8	NO	-172.7	-95.5	N/A	-268.3	-200.7	NO	NO
AFWTF (SR)6	165800	0642800	149.4	1756.4	NO	-172.7	-95.5	N/A	-268.2	-200.6	NO	NO
AFWTF (SR)7	153300	0660600	153.9	1803.7	NO	-172.9	-95.9	N/A	-268.9	-201.3	NO	NO
AFWTF (SR)8	153900	0662300	154.4	1790.4	NO	-172.9	-95.8	N/A	-268.7	-201.1	NO	NO
AFWTF (SR)9	163000	0662300	153.7	1735.6	NO	-172.6	-95.3	N/A	-267.9	-200.3	NO	NO
AFWTF (SR)10	163000	0675500	157.0	1700.3	NO	-172.4	-94.9	N/A	-267.3	-202.5	NO	NO

Table 7 Naval At-Sea Operational Areas (continued)													
Operational Area		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
AUTEC													
AUTEC1		252000	0780500	181.2	983.1	NO	-167.7	-85.4	N/A	-253.1	-191.1	NO	NO
AUTEC2		252000	0774500	180.0	982.9	NO	-167.7	-85.4	N/A	-253.1	-191.0	NO	NO
AUTEC3		232500	0762000	175.3	1118.0	NO	-168.8	-87.6	N/A	-256.4	-194.4	NO	NO
AUTEC4		232500	0771500	178.3	1115.2	NO	-168.8	-87.6	N/A	-256.4	-194.3	NO	NO
FORACS, Hawaii													
FORACS, Hawaii1		212530	1581100	275.8	4957.7	NO	-181.7	-113.5	N/A	-295.2	-239.1	NO	NO
FORACS, Hawaii2		212100	1581500	275.7	4964.7	NO	-181.7	-113.5	N/A	-295.3	-239.1	NO	NO
FORACS, Hawaii3		211500	1580800	275.6	4962.1	NO	-181.7	-113.5	N/A	-295.3	-239.1	NO	NO
FORACS, Hawaii4		211500	1580700	275.6	4961.1	NO	-181.7	-113.5	N/A	-295.3	-239.1	NO	NO
Gulf of Mexico OPAREA													
GoM1		293601	0800130	191.3	701.2	NO	-164.7	-79.5	N/A	-244.3	-183.1	NO	NO
GoM2		292521	0864800	218.9	870.8	NO	-166.6	-83.3	N/A	-249.9	-189.8	NO	NO
GoM3		284101	0864800	217.1	913.6	NO	-167.0	-84.1	N/A	-251.2	-191.0	NO	NO
GoM4		285231	0874400	220.5	934.1	NO	-167.2	-84.5	N/A	-251.7	-191.6	NO	NO
Pacific Missile Range Facility (PMRF)													
PMRF1		220000	1594500	277.0	5024.5	NO	-181.8	-113.7	N/A	-295.6	-239.5	NO	NO
PMRF2		220800	1620000	278.1	5149.0	NO	-182.1	-114.2	N/A	-296.2	-240.1	NO	NO
PMRF3		224500	1614000	278.6	5104.3	NO	-182.0	-114.0	N/A	-296.0	-239.9	NO	NO
PMRF4		260000	1581500	280.5	4777.7	NO	-181.4	-112.9	N/A	-294.3	-238.1	NO	NO
Pearl Harbor South OPAREA													
PHS1		190800	1591500	274.0	5114.8	NO	-182.0	-114.1	N/A	-296.0	-239.9	NO	NO
PHS2		210000	1580800	275.3	4972.4	NO	-181.8	-113.6	N/A	-295.3	-239.2	NO	NO
PHS3		210000	1573600	275.1	4941.6	NO	-181.7	-113.5	N/A	-295.1	-239.0	NO	NO
PHS4		191800	1562000	272.9	4938.9	NO	-181.7	-113.4	N/A	-295.1	-239.0	NO	NO
PHS5		184900	1574500	273.0	5041.1	NO	-181.9	-113.8	N/A	-295.7	-239.5	NO	NO

Table 7 Naval At-Sea Operational Areas (continued)													
Operational Area		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
Southern California (SOCAL)													
SOCAL1		385200	1255200	284.1	2581.7	NO	-176.1	-102.2	N/A	-278.2	-222.1	NO	NO
SOCAL2		390000	1240000	283.7	2479.1	NO	-175.7	-101.5	N/A	-277.2	-221.1	NO	NO
SOCAL3		311500	1163000	266.5	2260.8	NO	-174.9	-99.9	-72.8	-274.8	-218.7	NO	NO
SOCAL4		300000	1203000	267.0	2519.0	NO	-175.8	-101.7	N/A	-277.6	-221.5	NO	NO
Virginia Capes OPAREA													
VC1		384500	0750000	110.7	159.1	YES	-151.9	-68.0	-68	-219.9	-149.2	YES	NO
VC2		384500	0743000	107.5	184.4	YES	-153.1	-71.7	-71.7	-224.8	-154.1	YES	NO
VC3		374500	0724000	113.3	303.3	NO	-157.5	-85.4	-85.4	-242.9	-172.2	NO	NO
VC4		350600	0724000	136.4	418.0	NO	-160.2	-70.5	N/A	-230.8	-160.8	NO	NO
VC5		320000	0771200	176.4	524.8	NO	-162.2	-74.5	N/A	-236.7	-174.7	NO	NO
VC6		342400	0773000	177.7	358.8	NO	-158.9	-67.9	N/A	-226.8	-164.8	NO	NO
VC7		354000	0752500	154.0	300.0	NO	-157.4	-79.6	-79.6	-237.0	-169.3	NO	NO
VC8		370000	0755000	149.2	207.5	YES	-154.2	-70.8	-70.8	-225.0	-157.3	NO	NO

Table 8 Land-Based Radar Test and Training Sites													
Radar Location		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
Fort Lewis	WA	470525	1223510	298.3	2317.2	NO	-175.1	-100.3	N/A	-275.4	-219.3	NO	NO
Yakima Firing	WA	464018	1202135	297.3	2208.6	NO	-174.7	-99.5	N/A	-274.2	-218.0	NO	NO
Fort Carson	CO	383810	1044750	275.9	1454.7	NO	-171.1	-92.2	N/A	-263.3	-207.2	NO	NO
Fort Rliey	KS	385813	0965139	273.6	1025.2	NO	-168.0	-86.1	N/A	-254.2	-198.0	NO	NO
Fort Shafter	HI	211800	1574900	275.5	4941.7	NO	-181.7	-113.5	N/A	-295.1	-239.0	NO	NO
Hunter AAF	GA	320100	0810800	200.9	556.1	NO	-162.7	-75.5	N/A	-238.2	-181.1	NO	NO
Fort Gillem	GA	333600	0841900	223.4	551.5	NO	-162.6	-75.4	N/A	-238.0	-177.9	NO	NO
Fort Benning	GA	322130	0845815	221.1	642.4	NO	-164.0	-78.0	N/A	-242.0	-181.9	NO	NO
Fort Stewart	GA	315145	0813655	203.3	575.8	NO	-163.0	-76.1	N/A	-239.1	-182.0	NO	NO
Fort Rucker	AL	311947	0854255	220.5	725.6	NO	-165.0	-80.1	N/A	-245.2	-185.0	NO	NO
Yuma Proving	AZ	330114	1141855	268.3	2090.1	NO	-174.2	-98.5	-72.8	-272.7	-216.6	NO	NO
Fort Hood	TX	310830	0974550	248.5	1271.4	NO	-169.9	-89.9	N/A	-259.8	-203.0	NO	NO
Fort Knox	KY	375350	0855655	257.7	457.9	NO	-161.0	-98.3	-98.3	-259.3	-203.2	NO	NO
Fort Bragg	NC	350805	0790035	193.0	315.5	NO	-157.8	-81.3	-81.3	-239.1	-178.0	NO	NO
Fort Campbell	KY	363950	0872820	252.1	566.7	NO	-162.9	-108.6	N/A	-271.5	-214.7	NO	NO
Fort Polk	LA	310343	0931226	240.5	1052.8	NO	-168.3	-86.6	N/A	-254.9	-194.7	NO	NO
Fort Leonard	MO	374430	0920737	265.1	787.6	NO	-165.7	-81.6	N/A	-247.3	-191.2	NO	NO
Fort Irwin	CA	351536	1164102	273.9	2161.8	NO	-174.5	-99.1	-68.1	-273.6	-217.5	NO	NO
Fort Sill	OK	344024	0982352	259.6	1189.2	NO	-169.3	-88.7	N/A	-258.0	-201.9	NO	NO
Fort Bliss	TX	314850	1062533	260.0	1699.2	NO	-172.4	-94.9	N/A	-267.3	-226.2	NO	NO
Fort Leavenworth	KS	392115	0945500	274.4	917.7	NO	-167.1	-84.2	N/A	-251.3	-195.2	NO	NO
Fort Drum	NY	440115	0754844	17.6	321.3	NO	-158.0	-66.0	N/A	-223.9	-163.8	NO	NO
Fort Gordon	GA	332510	0820910	211.2	491.4	NO	-161.6	-73.4	N/A	-235.0	-175.3	NO	NO
Fort McCoy	WI	440636	0904127	299.3	736.5	NO	-165.2	-80.4	N/A	-245.5	-189.4	NO	NO
Fort Dix	NJ	400025	0743713	79.4	169.2	YES	-152.4	-69.4	-69.4	-221.8	-153.0	YES	NO
Parks Reserve	CA	374254	1214218	280.6	2380.6	NO	-175.4	-100.8	N/A	-276.1	-220.0	NO	NO
Aberdeen Proving	MD	392825	0760655	95.1	88.1	YES	-146.7	-62.2	-62.2	-208.9	-138.8	YES	NO
Fort Huachuca	AZ	313500	1102000	262.7	1916.0	NO	-173.5	-97.0	N/A	-270.5	-229.3	NO	NO
Fort Monmouth	NJ	401900	0740215	74.7	203.5	YES	-154.0	-73.4	-73.4	-227.4	-162.8	NO	NO
Picatinny Arsenal	NJ	405600	0743400	60.3	192.1	YES	-153.5	-74.5	-74.5	-228.0	-165.2	NO	NO

Table 8 Land-Based Radar Test and Training Sites (continued)													
Radar Location		Lat (N)	Lon (w)	Bearing (deg.)	Distance (mi)	Profile (Is path under 250 miles?)	FSL (dB)	Estimated OH-Loss (dB)	Profiled OH-Loss (dB)	Total Path Loss (dB)	Interfering Power Level (dBW/MHz)	In-Band Interference?	Out-of Band Overload?
Redstone Arsenal	AL	343630	0863610	237.5	597.7	NO	-163.3	-76.8	N/A	-240.1	-180.0	NO	NO
White Sands	NM	322246	1062813	261.2	1684.2	NO	-172.3	-94.8	N/A	-267.1	-226.0	NO	NO
Army Research	MD	390000	0765800	134.1	59.1	YES	-143.3	-60.5	-60.5	-203.8	-133.6	YES	NO
Fort Hunter	CA	355756	1211404	277.3	2393.1	NO	-175.4	-100.9	N/A	-276.3	-235.1	NO	NO
Kelly Support	PA	402357	0800925	294.2	138.9	YES	-150.7	-60.8	-60.8	-211.5	-155.4	YES	NO

Table Headings

Radar Location : The site name of the radar system
Lat (N) : Radar latitude
Lon (w) : Radar Longitude
Bearing (deg.) : Azimuth from earth station toward radar.
Distance (mi) : Distance from earth station to radar
Profile (Is path under 250 miles?) : If path is over 250 miles no OH-loss profile is generated
FSL (dB) : Free Space Loss
Estimated OH-Loss (dB) : Using a rounded-earth model an estimated OH-loss is calculated for long paths
Profiled OH-Loss (dB) : Using the NSMA Tropo Loss actual OH-loss calculcations are performed for shorter paths
Total Path Loss (dB) : Total of Free Space Loss plus Over-the-Horizon loss
Interfering Power Level (dBW/MHz) : Level of RF interference at the earth station's LNA input
In-Band Interference? : If the Radar is operating in-band is the max. permissible interference criteria being met?
Out-of Band Overload? : If the Radar is operating in out-of-band spectrum is the LNA overload threshold being met?

6.0 Conclusions

Calculations were performed to assess the electromagnetic compatibility (EMC) between the radars listed below and adjacent-band FSS earth station receiver at Hagerstown, Maryland. Interference assessment for Earth Stations Operating at 3625 - 3700 MHz at the Hagerstown, MD site identified 9 cases of In-band potential interference. The applicant is aware of this potential for interference and will work with the Government Users to mitigate the problem.

Results

Total Number of Paths 9 sites		Lat (N)	Lon (W)	Out-of-Band Overload?	In-Band Interference?
St.Inigoes,	MD	381000	0762300	No	Yes
Moorestown,	NJ	395849	0745630	No	Yes
Wallops Island,	VA	375600	0752800	No	Yes
VC 1 OPEREA		384500	0750000	No	Yes
VC 2 OPEREA		384500	0743000	No	Yes
Fort Dix	NJ	400025	0743713	No	Yes
Aberdeen Proving	MD	392825	0760655	No	Yes
Army Research	MD	390000	0765800	No	Yes
Kelly Support	PA	402357	0800925	No	Yes