

FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT

PREPARED FOR
GE AMERICAN COMMUNICATIONS, INC.
LANSING, MICHIGAN
SATELLITE EARTH STATION

PREPARED BY
COMSEARCH
2002 EDMUND HALLEY DRIVE
RESTON, VIRGINIA 20191
MAY 10, 1998

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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

THE INTERFERENCE STUDY OF THE PROPOSED EARTH STATION SITE INDICATES THAT NO INTERFERENCE CONFLICTS EXIST AT THIS LOCATION WITHIN THE GREAT CIRCLE INTERFERENCE CONTOURS.

3. SUPPLEMENTAL SHOWING

RE: PART 25.203(C)

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 MARCH 22, 1999.

COORDINATION FOR THIS SITE HAS BEEN EXPEDITED SINCE NO INTERFERENCE CONFLICTS WERE IDENTIFIED WITHIN THE COORDINATION CONTOURS.

AT&T COMMUNICATIONS
AT&T COMMUNICATIONS OF MICHIGAN
AT&T COMMUNICATIONS OF OHIO INC.
BELL CANADA - ONTARIO REGION
INTERMEDIA COMMUNICATIONS, INC.
MCI TELECOMMUNICATIONS CORPORATION
MICHIGAN BELL TELEPHONE COMPANY
SPECIALTY ANTENNA SITE RESOURCES, INC.

4. EARTH STATION COORDINATION DATA

THIS SECTION PRESENTS THE DATA PERTINENT TO FREQUENCY COORDINATION OF THE PROPOSED EARTH STATION WHICH WAS CIRCULATED TO ALL COMMON CARRIERS WITHIN ITS COORDINATION CONTOURS.

SATELLITE EARTH STATION
 FREQUENCY COORDINATION DATA
 03/22/99

Company	GE AMERICOM		
Earth Station Name, State	LANSING, MI		
Latitude (DMS)	42 42	6.0 N	
Longitude (DMS)	84 40	3.0 W	
Ground Elevation AMSL (Ft/m)	883.8 /269.4		
Antenna Centerline AGL (Ft/m)	9.0 / 2.7		
Receive Antenna Type:	Paraclipse		
4 GHz Gain (dBi) / Diameter (m)	42.3 /	3.8	
3 dB / 15 dB Half Beamwidth	0.70 /	1.40	
Operating Mode	RECEIVE ONLY		
Modulation	ANALOG		
Emission / Receive Band (MHz)	36M0F8W / 3700.0000 - 4200.0000		
Max permissible Interference Power			
4 GHz, 20% (dBW/1 MHz)	-146.0		
4 GHz, 0.0100% (dBW/1 MHz)	-136.0		
Range of Satellite Arc (Geostationary)			
Degrees Longitude	60.0 W / 143.0 W		
Azimuth Range (Min/Max)	145.9 / 247.3		
Corresponding Elevation Angles	34.8 / 14.3		
Radio Climate	A		
Rain Zone	2		
Max Great Circle Coordination Distance (Mi/Km)			
4 GHz	189.6 / 305.1		
Precipitation Scatter contour radius (Mi/Km)			
4 GHz	315.5 / 507.9		

Note: Horizon is less than 0.2 degrees at all azimuths

Table of Earth Station Coordination Values
03/22/99

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Earth Station Name      LANSING MI
Owner                  GE AMERICOM
Latitude               42 42  6.0 N
Longitude              84 40  3.0 W
Ground Elevation (Ft/m) 883.8 / 269.4 AMSL      ACL      9.0  Feet AGL
Antenna Model          PARACLIPSE ANTENNA 3.8 METERS
Objectives: Receive    -146.0 (dBW /1 MHz)
  
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Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	4 GHz Antenna Gain (dBi)	Coordination Distance (Km)
0	0.00	111.97	-10.00	229.6
5	0.00	116.78	-10.00	229.6
10	0.00	121.58	-10.00	229.6
15	0.00	122.54	-10.00	229.6
20	0.00	118.79	-10.00	229.6
25	0.00	114.95	-10.00	229.6
30	0.00	111.03	-10.00	229.6
35	0.00	107.04	-10.00	229.6
40	0.00	103.00	-10.00	229.6
45	0.00	98.93	-10.00	229.6
50	0.00	94.84	-10.00	229.6
55	0.00	90.74	-10.00	229.6
60	0.00	86.63	-10.00	229.6
65	0.00	82.53	-10.00	229.6
70	0.00	78.45	-10.00	229.6
75	0.00	74.40	-10.00	229.6
80	0.00	70.40	-10.00	229.6
85	0.00	66.45	-10.00	229.6
90	0.00	62.57	-10.00	229.6
95	0.00	58.79	-10.00	229.6
100	0.00	55.13	-10.00	229.6
105	0.00	51.61	-10.00	229.6
110	0.00	48.28	-10.00	229.6
115	0.00	45.18	-9.37	232.6
120	0.00	42.35	-8.67	236.0
125	0.00	39.87	-8.02	239.3
130	0.00	37.81	-7.44	242.2
135	0.00	36.23	-6.98	244.6
140	0.00	35.20	-6.66	246.3
145	0.00	34.77	-6.53	247.0
150	0.00	34.97	-6.59	246.7
155	0.00	35.79	-6.84	245.3
160	0.00	37.18	-7.26	243.2
165	0.00	38.69	-7.69	240.9
170	0.00	39.80	-8.00	239.4
175	0.00	40.49	-8.18	238.4
180	0.00	40.72	-8.24	238.1

Table of Earth Station Coordination Values
03/22/99

Earth Station Name LANSING MI
 Owner GE AMERICOM
 Latitude 42 42 6.0 N
 Longitude 84 40 3.0 W
 Ground Elevation (Ft/m) 883.8 / 269.4 AMSL ACL 9.0 Feet AGL
 Antenna Model PARACLIPSE ANTENNA 3.8 METERS
 Objectives: Receive -146.0 (dBW /1 MHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	4 GHz Antenna Gain (dBi)	Coordination Distance (Km)
185	0.00	40.49	-8.18	238.4
190	0.00	39.81	-8.00	239.4
195	0.00	38.69	-7.69	240.9
200	0.00	37.18	-7.26	243.2
205	0.00	35.31	-6.70	246.1
210	0.00	33.12	-6.00	249.8
215	0.00	30.65	-5.16	254.5
220	0.00	27.94	-4.16	260.2
225	0.00	25.04	-2.96	267.1
230	0.00	21.96	-1.54	275.6
235	0.00	18.75	0.17	286.3
240	0.00	15.99	1.90	297.6
245	0.00	14.45	3.01	305.1
250	0.00	14.51	2.95	304.7
255	0.00	16.17	1.78	296.8
260	0.00	19.01	0.02	285.4
265	0.00	22.59	-1.85	273.8
270	0.00	26.61	-3.63	263.2
275	0.00	30.90	-5.25	254.1
280	0.00	35.36	-6.71	246.0
285	0.00	39.93	-8.03	239.2
290	0.00	44.58	-9.23	233.3
295	0.00	49.29	-10.00	229.6
300	0.00	54.04	-10.00	229.6
305	0.00	58.81	-10.00	229.6
310	0.00	63.61	-10.00	229.6
315	0.00	68.43	-10.00	229.6
320	0.00	73.25	-10.00	229.6
325	0.00	78.09	-10.00	229.6
330	0.00	82.93	-10.00	229.6
335	0.00	87.77	-10.00	229.6
340	0.00	92.62	-10.00	229.6
345	0.00	97.46	-10.00	229.6
350	0.00	102.31	-10.00	229.6
355	0.00	107.14	-10.00	229.6

Earth Station Azimuth and Elevation Table
03/22/99

Earth Station Name LANSING MI
 Owner GE AMERICOM
 Latitude 42 42 6.0 N
 Longitude 84 40 3.0 W
 Ground Elevation (Ft/m) 883.8 / 269.4 AMSL ACL 9.0 Feet AGL
 Satellite Arc Range 60.0 W
 143.0 W

Satellite Longitude	Azimuth (Degrees)	Elevation (Degrees)	Satellite Name
60.0	145.9	34.8	
61.0	147.1	35.2	
62.0	148.4	35.6	
63.0	149.6	36.1	
64.0	150.9	36.5	
65.0	152.2	36.8	BRAZILSAT B2
65.1	152.3	36.9	SBTS-1 - BRAZILSAT B2
66.0	153.5	37.2	
67.0	154.8	37.6	
68.0	156.2	37.9	
69.0	157.5	38.2	SATCOM SN2
70.0	158.9	38.5	BRAZILSAT B1
70.0	158.9	38.5	SBTS-2 - BRAZILSAT B1
71.0	160.3	38.8	
72.0	161.7	39.1	SATCOM 2R
72.0	161.7	39.1	SATCOM IIR
73.0	163.1	39.3	
74.0	164.5	39.5	GALAXY 6
75.0	165.9	39.7	
76.0	167.3	39.9	COMSTAR D4
76.0	167.3	39.9	COMSTAR D2/D4
77.0	168.8	40.1	
78.0	170.2	40.3	
79.0	171.7	40.4	BRAZILSAT A1
80.0	173.1	40.5	
81.0	174.6	40.6	
82.0	176.1	40.6	SATCOM 6-R
83.0	177.5	40.7	
84.0	179.0	40.7	
85.0	180.5	40.7	GE-2
85.0	180.5	40.7	TELSTAR 302
86.0	182.0	40.7	
87.0	183.4	40.7	GE-3
87.0	183.4	40.7	SPACENET 3
88.0	184.9	40.6	
89.0	186.4	40.5	TELSTAR 402R

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 Satellite Arc Range 60.0 W
 143.0 W

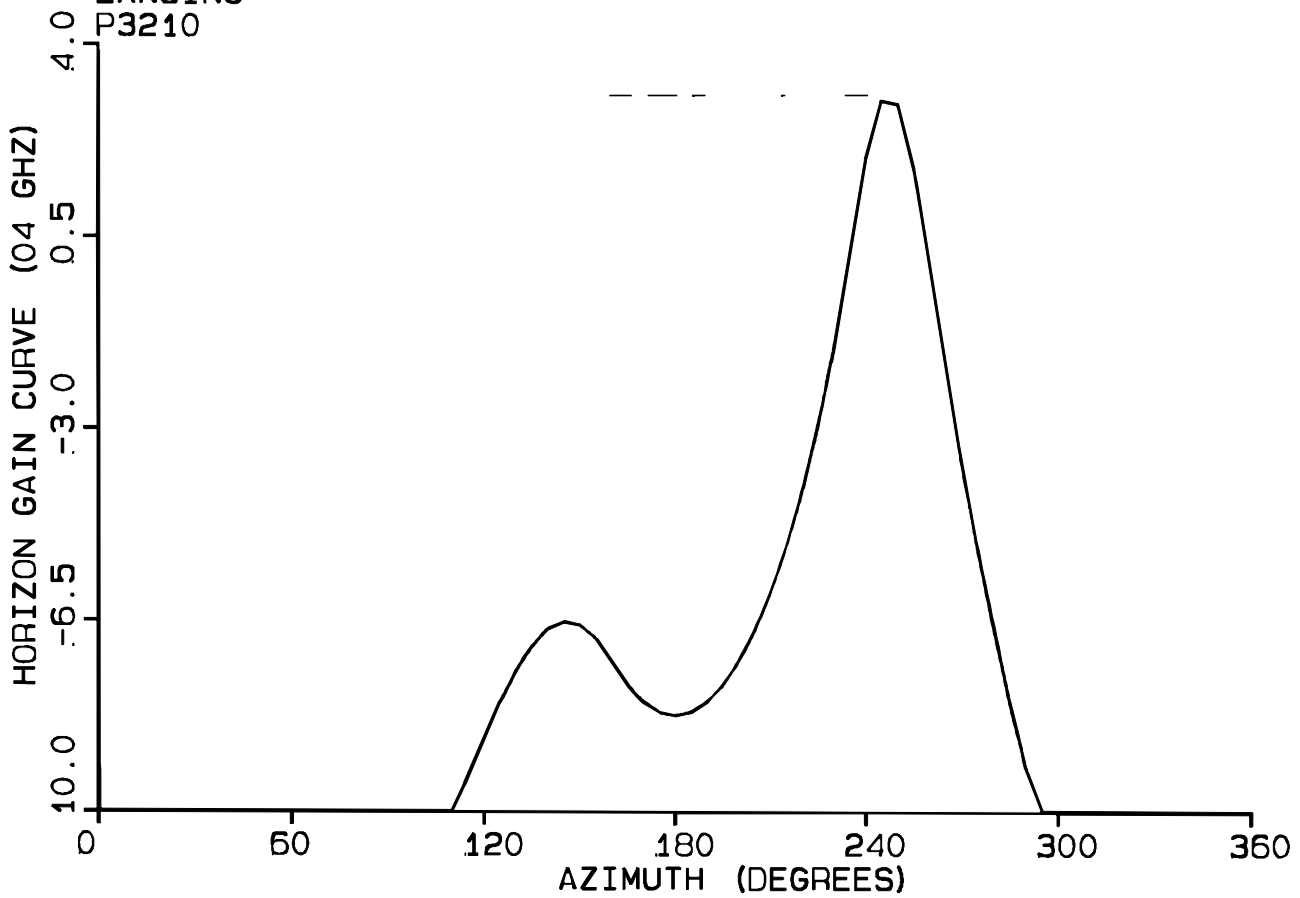
Satellite Longitude	Azimuth (Degrees)	Elevation (Degrees)	Satellite Name
90.0	187.8	40.4	
91.0	189.3	40.3	GALAXY 7
92.0	190.7	40.2	BRAZILSAT A2
93.0	192.2	40.0	
94.0	193.6	39.8	
95.0	195.0	39.6	GALAXY 3R
96.0	196.5	39.4	TELSTAR 301
97.0	197.9	39.1	TELSTAR 5
97.0	197.9	39.1	TELSTAR 401
98.0	199.3	38.9	
99.0	200.6	38.6	GALAXY 4
99.0	200.6	38.6	GALAXY 6
100.0	202.0	38.3	
101.0	203.4	38.0	DBS 1
101.0	203.4	38.0	AMSC-1
101.0	203.4	38.0	SPACENET 4
102.0	204.7	37.7	
103.0	206.0	37.3	GE-1
104.0	207.4	37.0	
105.0	208.6	36.6	
106.0	209.9	36.2	
107.0	211.2	35.8	
107.5	211.8	35.6	ANIK E2
108.0	212.5	35.4	
109.0	213.7	34.9	
109.2	213.9	34.8	SOLIDARIDAD-1
110.0	214.9	34.5	
111.0	216.1	34.0	
111.1	216.2	33.9	ANIK E1
112.0	217.3	33.5	
113.0	218.5	33.0	SOLIDARIDAD-2
114.0	219.6	32.5	
115.0	220.8	32.0	
116.0	221.9	31.5	
116.8	222.8	31.0	MORELOS-2
117.0	223.0	30.9	

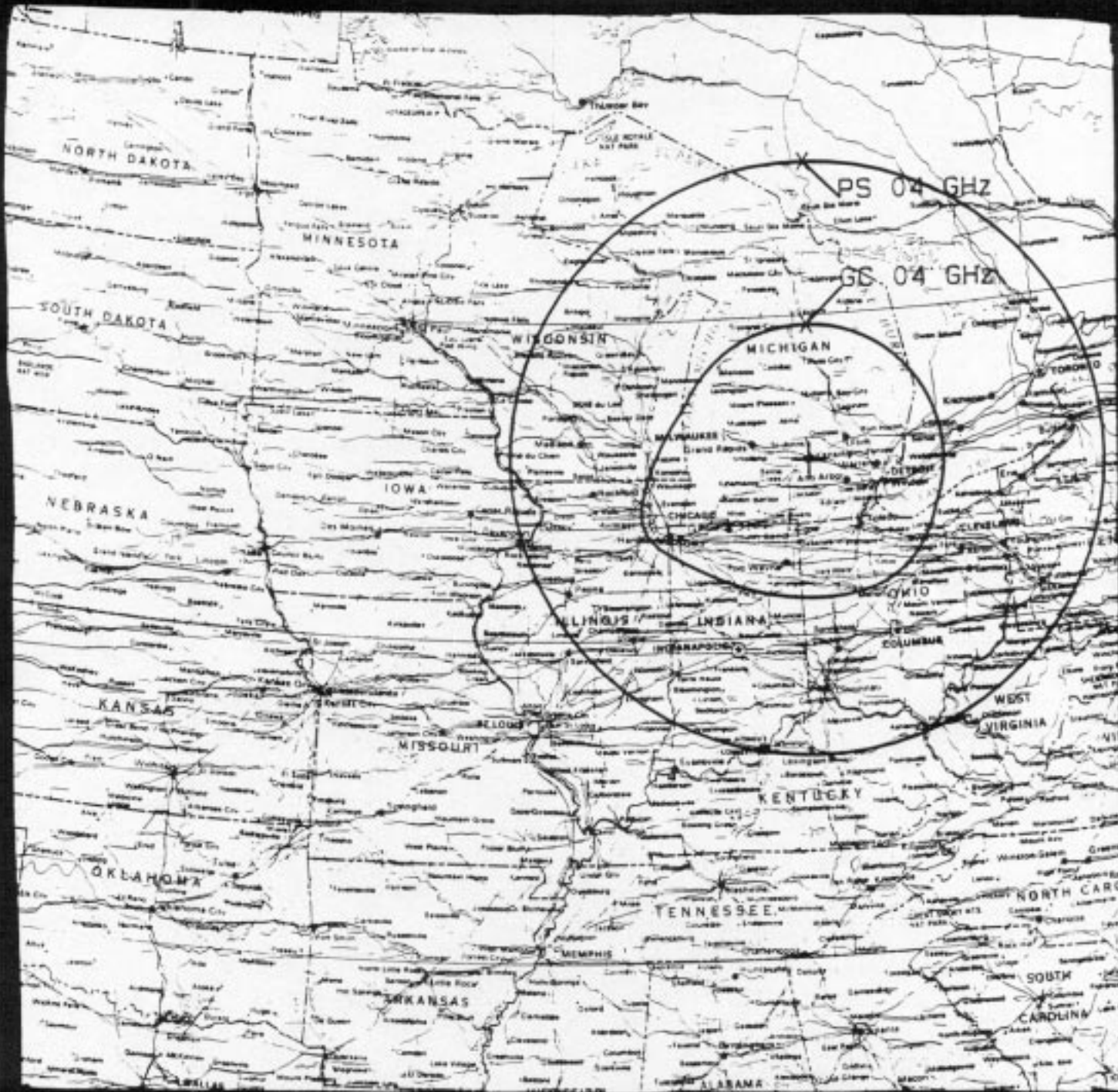
Earth Station Azimuth and Elevation Table
03/22/99

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 Longitude 84 40 3.0 W
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 Satellite Arc Range 60.0 W
 143.0 W

Satellite Longitude	Azimuth (Degrees)	Elevation (Degrees)	Satellite Name
118.0	224.1	30.4	
119.0	225.2	29.8	
120.0	226.3	29.3	
121.0	227.3	28.7	
122.0	228.4	28.1	
123.0	229.4	27.5	TELSTAR 303
124.0	230.4	26.9	
125.0	231.4	26.3	GALAXY 5-W
126.0	232.4	25.7	
127.0	233.3	25.0	
128.0	234.3	24.4	
129.0	235.2	23.8	
130.0	236.2	23.1	
131.0	237.1	22.5	SATCOM C-3
131.0	237.1	22.5	SATCOM C-3/IR
132.0	238.0	21.8	
133.0	238.9	21.1	GALAXY 1R
133.0	238.9	21.1	GALAXY 1-R
134.0	239.8	20.5	
135.0	240.6	19.8	SATCOM C-4
136.0	241.5	19.1	
137.0	242.4	18.4	SATCOM C-1
138.0	243.2	17.7	
139.0	244.0	17.1	AURORA II/SATCOM C-5
139.0	244.0	17.1	SATCOM C-5/AURORA II
140.0	244.9	16.4	
141.0	245.7	15.7	
142.0	246.5	15.0	
143.0	247.3	14.3	

LANSING
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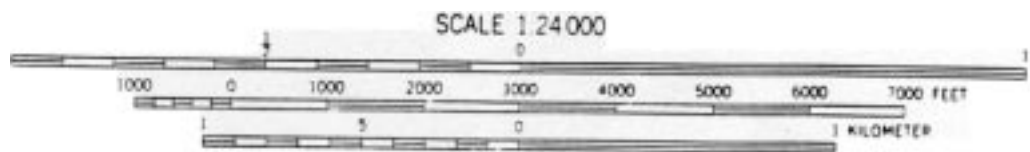




COA,ISEARCH
 Leader--@ip and Dimwty for Wireless

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 20197

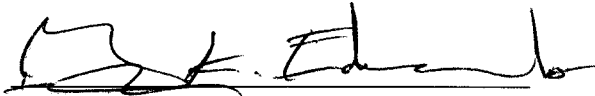
uu
 Ta 703.620.6390
 703.476.2607



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:

A handwritten signature in black ink, appearing to read "G. K. Edwards", written over a horizontal line.

GARY K. EDWARDS
GROUP MANAGER SATELLITE SERVICES
COMSEARCH
2002 EDMUND HALLEY DRIVE
RESTON, VIRGINIA 20191

DATED: May 10, 1999