

ATTACHMENT TO
APPLICATION FOR SPECIAL TEMPORARY AUTHORITY

0409-EX-ST-2006

1. Name of Applicant: AeroSat Airborne Internet LLC

2. Mailing Address:

Address: AeroSat Airborne Internet LLC
62 Route 101A
Amherst, NH 03031-2280

Attention: William McNary
E-Mail Address: wmcnary@aerosat.com

3. Contact Person (to handle inquiries pertaining to this application):

Name: Frank Blanda
Title: Chief Technology Officer
Address: AeroSat Airborne Internet LLC
62 Route 101A
Amherst, NH 03031-2280

Phone Number: (603) 598-1771
E-Mail Address: fblanda@aerosat.com

4. Need for STA:

As explained below, AeroSat Airborne Internet LLC seeks to demonstrate and test an experimental airborne communications system under contract with the FAA. The company seeks a special temporary authority ("STA") to replace its current STA granted under callsign WC9XPO (File No. 0370-EX-ST-2006) for experimentation and demonstration to meet FAA requirements. The replacement STA would allow AeroSat to implement and test a ground station operating in the 11.2-11.7 GHz band as part of the same test contemplated by the original STA and under the same callsign.

5. Purpose of Operation:

The FAA seeks to observe Airborne Internet capability to evaluate its potential to address the advanced communications requirements of the Next Generation Air Transport System (NGATS). As the Global Airspace System evolves to extend the NGATS common integrated operational picture to aircraft, the system will require that aircraft become mobile nodes on the System Wide Information Management (SWIM) network. The Airborne Internet holds promise for connecting aircraft to the network with high-speed broadband on a global scale while reducing both communications latency and costs and increasing bandwidth utilization.

Under an FAA contract, DTFAWA-05-C-00093, AeroSat Airborne Internet will conduct Airborne Internet flight demonstrations on FAA test aircraft at the William J. Hughes Technical Center. Two aircraft will be deployed during the test. The aircraft are expected to fly a pattern off the coast of the United States between Egg Harbor, New Jersey, and

Cape Cod, Massachusetts. Specifically, the aircraft will fly in the following area of operation: North of 34 NL, South of 42 NL, East of 76 WL, and West of 68 WL at altitudes of up to 51,000 feet. Performance data will be gathered during the demonstration and used to refine the system simulation model and hardware design.

AeroSat has already received an STA under call sign WC9XPO (File No. 0370-EX-ST-2006) to test data exchange between aircraft on 902-928 MHz and from the aircraft to the ground at 45 Mbps using the band 14.2-14.4 GHz to demonstrate a non-satellite communications network at flight level. In addition, that STA permits AeroSat to operate ground stations on 902-928 MHz.

This application seeks to replace that STA and, in addition to the authority already granted by the Commission, obtain authority to transmit data from the ground station to the aircraft on 11.2 to 11.7 GHz during the testing contemplated in the previously granted STA. The 11.2-11.7 GHz band is allocated for non-Government fixed satellite services transmitting from space to Earth and the Fixed Microwave Services (as licensed under Part 101 of the Commission's rules). As demonstrated by the Comsearch showing attached, the uplink operations in this band will not interfere with satellite or fixed microwave operations. Nevertheless, AeroSat will operate on a non-interference basis and will immediately resolve any interference that may be caused, including if necessary, discontinuing its experimentation until such interference is resolved.

6. Operation Dates:

The operation contemplated by this application will coincide with the experimental operations authorized under call sign WC9XPO (File No. 0370-EX-ST-2006).

7. Technical Information:

Technical details are provided in the associated STA request. In addition to the transmissions authorized under the existing STA, the company will add transmit capability in the 11.2-11.7 GHz band to the previously authorized ground station.

Thus, in total under the replacement STA, the company will deploy antennae with the following characteristics:

Band (GHz)	Sta. Class	Dir. Ant?	Beamwidth at the half power point (deg.)	Hor. plane	Vert. plane	6m rule	AGL (m)	GE (m)	Dist. to closest airport (km)
11.2-11.7	FX	Y	1.8	steerable	steerable	5.6*	27	18.3	0.6
14.2-14.4	MO	Y	4.8	steerable	steerable	aircraft	16,000	N/A	N/A
0.902-0.928	FX	N	N/A	N/A	N/A	5**	22	18.3	0.6
0.902-0.928	MO	N	N/A	N/A	N/A	aircraft	16,000	N/A	N/A

* A directional antenna (in a radome designed to be 5.6 meters above the roof) will be deployed in the 11.2 to 11.7 GHz band.

** An antenna operating in the 902-928 MHz band will be deployed at the ground station at a height not more than 5 meters above the roof.

8. Geographic Area

During the test, the aircraft will fly in the following area of operation: North of 34 NL, South of 42 NL, East of 76 WL, and West of 68 WL at altitudes of up to 51,000 feet.

9. Additional Operational Information:

Operations will be conducted on a non-interference basis, and AeroSat will immediately address any interference that may occur, including discontinuing the demonstration if necessary. The 24-7 duty person for this operation is Mr. Frank Blanda, Chief Technology Officer. Mr. Blanda can be reached at 603-598-1771 or fblanda@aerosat.com.



19700 Janelia Farm Boulevard
Ashburn, VA 20147
703-726-5500
Fax 703-726-5600

June 7, 2006

Mr. William McNary
AeroSat Corporation
P.O. Box 176
Temple, NH 03084
Via Email

Re: Atlantic City International Airport (ACY)
Experimental Authorization in the 11200-11700 MHz Band

Dear Mr. McNary:

We have completed an interference analysis for the proposed experimental transmissions at the Atlantic City International Airport in the 11,200-11,700 MHz segment. The results of the analysis are that the transmissions do not have the potential to cause harmful interference to any licensed, applied, or proposed terrestrial microwave station or International Ku earth station in the band. The parameters of the analysis are shown in Table 1.

Station Location	Atlantic City International Airport
Station Latitude	N 39° 26' 58.11" (39.44948° N)
Station Longitude	W 74° 33' 57.35" (74.56593° W)
Total Transmitter EIRP (dBW)	26.4
Transmitter Bandwidth (MHz)	50
EIRP Density (dBW/MHz)	9.4
Frequency Range (MHz)	11,200 – 11,700
Station Ground Elevation AMSL (ft)	60
Station Antenna Height AGL (ft)	70
Analyzed Antenna Pattern	Omnidirectional (Isotropic)

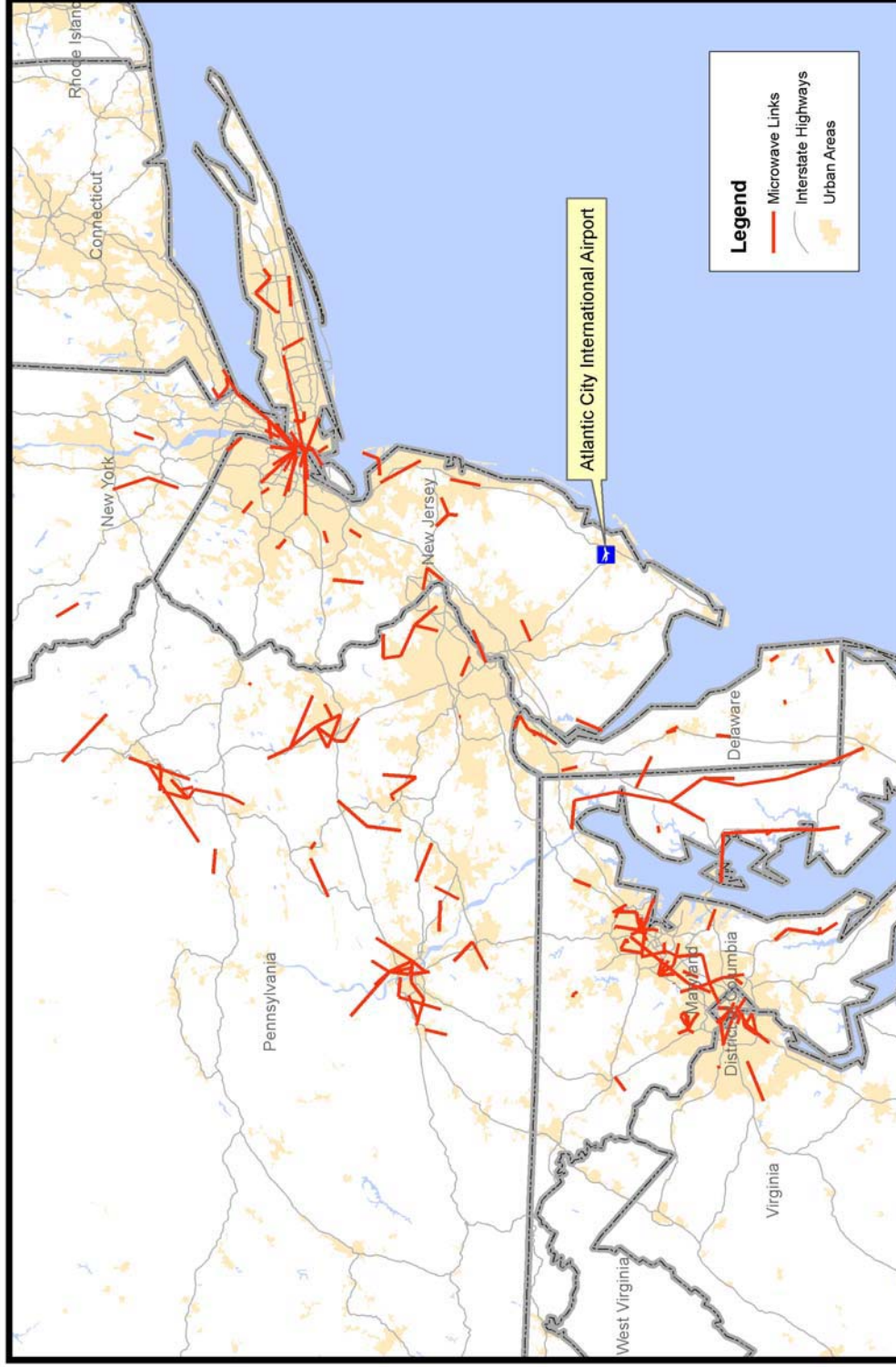
Table 1: Analysis Parameters

We analyzed the interference potential of the proposed transmitter into all microwave receivers in the Comsearch database with frequencies between 11175-11700 MHz (see Figure 1). This range includes all microwave receivers that would be either co-channel or adjacent channel to a 50 MHz bandwidth transmitter operating within the desired segment. We also analyzed the interference potential into all earth stations in the Comsearch database using the International Ku band (10950-11200 MHz and 11450-11700 MHz, see Figure 2). The analysis results indicate that each potential case meets the required objective.

If you should have any questions or require additional information please contact me at (703) 726-5681 or wperkins@comsearch.com.

Sincerely,

William W. Perkins
Comsearch
Principal Engineer



**Microwave Links 11175 -11700 MHz
within 250KM of Atlantic City International Airport**

Figure 1: Microwave Path Plot

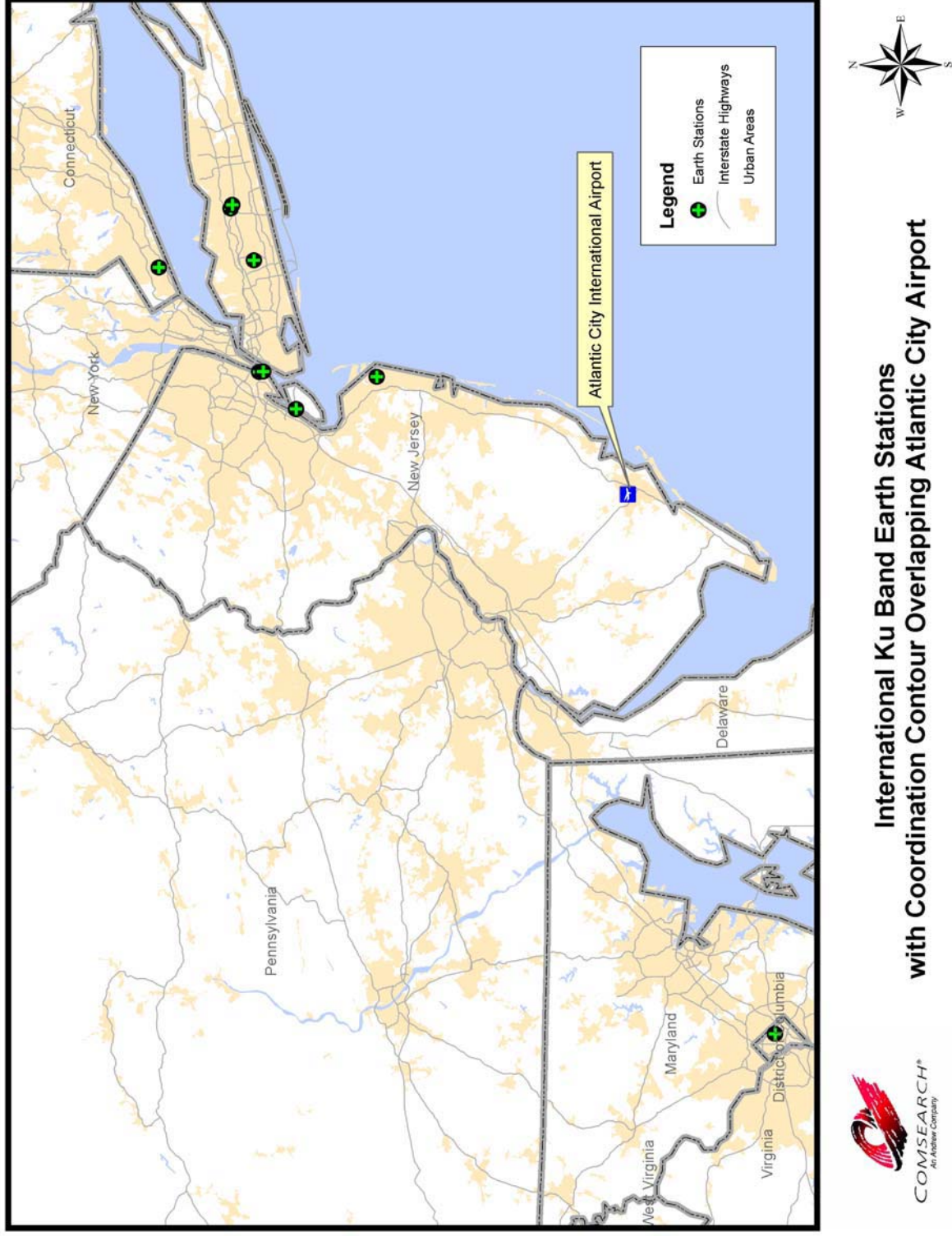


Figure 2: Earth Station Plot