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WASHINGTON, DC

September 23, 2009

**VIA ELECTRONIC POSTING**

Ms. Marlene Dortch, Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

**Re: Experimental Radio Service Application of  
Northrop Grumman Space & Mission Systems Corp.  
File No. 0327-EX-PL-2009**

Dear Ms. Dortch:

In its initial filing for an Experimental Radio Service license in the above-referenced proceeding, Northrop Grumman Space & Mission Systems Corporation (“NGAS”) indicated that it was in the process of coordinating its proposed use of the earth station equipment described in the application with the National Aeronautics and Space Administration’s Jet Propulsion Laboratory (“NASA/JPL”). See NGAS Application, File No. 0327-EX-PL-2009, Exhibit A at 5 (filed September 9, 2009). NGAS stated that it would supplement its application with a copy of the coordination agreement with NASA/JPL once the agreement is finalized. *Id.* at 6.

NGAS and NASA/JPL have now completed the coordination of NGAS’s proposed facility and identified the conditions of NGAS’s use that would be acceptable to NASA/JPL. NGAS will abide by these conditions. A copy of the letter agreement between NGAS and NASA/JPL regarding the use of the proposed equipment is enclosed with this letter.

Please include a copy of this letter and the enclosed coordination agreement in the application file of File No. 0327-EX-PL-2009.

Please direct any questions regarding this supplement to me.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Stephen D. Baruch', is written over a horizontal line.

Stephen D. Baruch  
*Attorney for Northrop Grumman Space &  
Mission Systems Corporation*

Enclosure

Northrop Grumman Aerospace Systems

September 16, 2009

Mr. Farzin Manshadi,  
JPL Spectrum Manager  
Jet Propulsion Laboratory  
M/S: 126-260  
4800 Oak Grove Drive  
Pasadena, CA 91109

**Re: Coordination Conditions for Northrop Grumman  
Experimental Earth Station Operations with TECSAR  
Satellite**

Dear Mr. Manshadi:

This letter documents the coordination agreement between the National Aeronautics and Space Administration ("NASA") Jet Propulsion Laboratory ("JPL") and Northrop Grumman Space and Mission Systems Corporation ("NGAS") regarding NGAS's proposed operation of earth station equipment from three locations in communication with the Israeli TECSAR satellite as part of an NGAS demonstration program. The TECSAR satellite would conduct space-to-Earth transmissions in the Earth-exploration satellite service ("EESS") at 8150 MHz, 8250 MHz, and 8350 MHz center frequencies with the channel bandwidth of 70 MHz for the mission data downlink and at the 2285 MHz or 2290 MHz center frequencies with the channel bandwidth less than 50 kHz for telemetry operations. NGAS would receive these transmissions at locations in Redondo Beach, CA, Chantilly, VA, and Tampa, FL. The NGAS Earth station would transmit telecommand signals for payload tasking to the TECSAR satellite using the 2085 MHz or 2090 MHz at center frequencies with the channel bandwidth less than 50 kHz.

NGAS understands that NASA/JPL has conducted an RFI analysis based on the operational parameters of TECSAR and the links to and from the proposed NGAS Earth stations. The following conditions, identified by NASA/JPL, for the different bands and ground stations are acceptable and agreed to by NGAS:

1. For TECSAR space-to-Earth transmissions at 8150 MHz, 8250 MHz, and 8350 MHz:
  - a. Receive operations by the NGAS Earth station in Redondo Beach, CA shall be limited to use of the 8150 MHz frequency, and such operations shall be conducted only when the Earth station-to-satellite elevation angle is 20 degrees or greater.
  - b. Receive operations by the NGAS Earth stations in Chantilly, VA and Tampa, FL may be made using the 8150 MHz, 8250 MHz, and 8350 MHz frequencies, subject to the condition that such operations shall be conducted only when the Earth station-to-satellite elevation angle is 10 degrees or greater.

2. For Telemetry and Telecommand (Payload Tasking) Transmission to/from TECSAR Using the 2285/2085 MHz and 2290/2090 MHz Frequencies:

- a. Telecommand (payload tasking) Earth-to-space operations on the 2085 MHz and 2090 MHz frequencies, and receipt of telemetry transmissions from TECSAR on the 2285 MHz frequency may be conducted from the Earth stations in Redondo Beach, CA, Chantilly, VA, and Tampa, FL.
- b. The NGAS Earth stations in Chantilly, VA and Tampa, FL may receive telemetry transmission from TECSAR on the 2290 MHz frequency.
- c. The NGAS Earth station in Redondo Beach, CA may not use the 2290 MHz frequency (or any other frequency in the 2290-2300 MHz band) to receive telemetry transmissions from TECSAR, as the 2290-2300 MHz band is allocated to the Space Research Service (deep space), while TECSAR is an EESS satellite operating near-Earth. Deep space receivers at Goldstone, CA using the 2290-2300 MHz band are extremely sensitive, and can be severely interfered with by near-Earth satellites.

Please acknowledge your consent to these conditions of NGAS use of Earth stations with TECSAR by signing at the place provided below, and returning a copy to me. NGAS will include this letter with its pending application to the Federal Communications Commission for an experimental Earth station license.

Thank you very much for your assistance and cooperation.

Sincerely,

*Hau H. Ho*

Hau H. Ho  
Northrop Grumman Aerospace Systems

**Accepted:**

By: *Farzin Manshadi*  
Farzin Manshadi,  
JPL Spectrum Manager  
Jet Propulsion Laboratory

Dated: \_\_\_\_\_