

# **Orbital Sciences Corporation**

21700 Atlantic Boulevard

Dulles, VA 20166

Federal Communications Commission  
Experimental Radio Services  
P.O. Box 358320  
Pittsburgh, PA 15251-5320

**Re: Request for Special Temporary Authority**

To the Commission:

Orbital Sciences Corporation (“Orbital”) hereby requests Special Temporary Authority (“STA”), beginning June 4, 1999, to operate experimental radio facilities as described below.

In accordance with Section 5.61 of the Commission’s Rules, the following information is provided in support of this request:

**1) Name and Address of the Applicant:**

Orbital Sciences Corporation  
21700 Atlantic Boulevard  
Dulles, VA 20166

Technical Contact:

Dave Sikora, Program Manager  
Orbital Sciences Corporation  
800 International Drive  
Linthicum, MD 21090  
Telephone: (410) 981-1146  
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**2) Need for STA:**

Orbital seeks to begin experimentation on June 4, 1999. The STA will allow it to commence immediately experimentation that will support the design and development of innovative communications products pending the grant of an application on FCC Form 442 for regular authority that it intends to file shortly.

3) **Description and Purpose of Operation:**

Orbital seeks to test the functionality and acceptability of a mobile radio network known as CAD/AVL. CAD (Computer Aided Dispatch)/AVL (Automatic Vehicle Location) is used to monitor the location and performance of a variety of vehicles, such as transit buses, supervisor vehicles, maintenance vehicles, light rail cars, and heavy rail trains.

Test vehicles will be equipped with an Intelligent Vehicle Logic Unit (IVLU), a Global Positioning System (GPS) receiver and a mobile receiver. Some vehicles will be equipped with an Advanced Mobile Data Terminal (AMDT) or Radio Vehicle Logic Unit (RVLU) in lieu of an IVLU. The vehicle will be driven in the vicinity of the base station site. The base station equipment will attempt to maintain contact with the moving vehicle by steering the transmission to the transceiver station and carry on simultaneous conversations with mobiles, separately and as groups.

4) **Time and Dates of Operation:**

Orbital proposes operation under the STA beginning June 4, 1999, through December 4, 1999.

5) **Classes of Station:**

Fixed and mobile.

6) **Location of Operation:**

The base stations will be located at:

800 International Drive  
Linthicum (Anne Arundel), MD  
39-12-25 N, 76-40-22 W (NAD 83)

The mobiles will operate in the vicinity of the base station.

7) **Equipment to be Used:**

Orbital seeks to employ not more than 5 base station transmitters and not more than 10 mobile units during its experimental efforts. These devices either have already received equipment authorization from the FCC or are the subject of a pending application for certification at the FCC. Orbital understands that unapproved devices may not be marketed inconsistent with Section 2.803 of the Commission's Rules. 47 C.F.R. § 2.803 (1998). Orbital will comply with the FCC's rules in this respect.

**8) Frequencies Desired:**

452.7 MHz FX  
452.8 MHz FX  
457.7 MHz MO  
457.8 MHz MO  
806-824 MHz MO  
851-869 MHz FX  
896-902 MHz MO  
935-941 MHz FX

Orbital recognizes that the proposed operation must not cause harmful interference to authorized facilities. It does not expect interference to occur, however, as its experimental transmissions will occur only during short periods during the day. Nevertheless, should interference occur, Orbital will take immediate steps to resolve the interference, including, if necessary, arranging for the discontinuance of operation.

**9) Maximum Power:**

For the 452.7-457.8 MHz operations, the output power of the base stations will not exceed 75 watts and the effective radiated power (ERP) will not exceed 75 watts. The mobile output power and ERP will not exceed 40 watts.

For the 806-941 MHz operations, the output power of the base stations will not exceed 75 watts and the ERP will not exceed 160 watts. The mobile output power will not exceed 15 watts and the ERP will not exceed 30 watts.

All power measurements are mean.

**10) Emission Designators:**

15K0F1D, 15K0F2D, 20K0F1D and 20K0F3E. Orbital also seeks to employ other emissions during its experimentation, but in no event will the emissions extend beyond the frequencies set forth under Item 8.

The modulated signal and necessary bandwidth for the 450 MHz operations will be 5 kHz data and 20 kHz voice. Tolerance will be +/- 0.005%.

For the 800 and 900 MHz operations, the modulated signal and necessary bandwidth will be 5 kHz data. In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits.

**11) Overall Height of Antenna Structure Above Ground:**

Orbital will comply with all FCC and FAA antenna requirements. The ground terminal antennas will be mounted either: (1) not higher than 20 feet above ground or 20 feet above a building; (2) on an FAA-approved structure in a manner that will not exceed the approved height (e.g., side mounted below the approved height); or (3) in a manner that does not require FAA approval.

**12) 47 C.F.R. § 1.2002 Certification:**

Orbital Sciences Corporation hereby certifies that it, its officers and directors, and any party with five percent or greater interest in this request for special temporary authorization is not subject to a denial of the Federal benefits requested herein pursuant to Section 5301 of the Anti Drug Abuse Act of 1988, 21 U.S.C. § 862.

Orbital submits that issuance of an STA is in the public interest, convenience, and necessity as it will help Orbital in developing advanced telecommunication systems.

If you have questions, please call our FCC counsel Kurt E. DeSoto of Wiley, Rein & Fielding at (202) 719-7235.

Respectfully submitted,

/s/

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Joan Deoul  
Contracts Manager

Date: \_\_\_\_\_