

### **Narrative Statement**

By this application, Orbital Sciences Corporation (“Orbital”) seeks a license to replace its Special Temporary Authorization under call sign WA9XFR, File No. 0178-EX-ST-1999, and to modify its authority so that it may conduct additional experimental operations on two itinerant frequencies and at other locations in the United States to further its research and development. While most of the experimentation would occur in the vicinity of its test site at Linthicum, Maryland (Coordinates: 39-12-25 N, 76-40-22 W (NAD83)), Orbital proposes to conduct tests at other sites as well. It is unable at this time, however, to determine the exact locations of these other experimental operations.

Orbital is testing 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 are equipped with an Intelligent Vehicle Logic Unit (IVLU), a Global Positioning System (GPS) receiver and a mobile receiver. Some vehicles are equipped with an Advanced Mobile Data Terminal (AMDT) or Radio Vehicle Logic Unit (RVLU) in lieu of an IVLU. The vehicles are driven in the vicinity of the base station site, which in limited cases could include residential areas. The base station equipment attempts to maintain contact with the moving vehicles by steering the transmission to the transceiver station and carry on simultaneous communications with mobiles, separately and as groups.

Orbital will employ not more than 5 base station transmitters and 100 mobile units at each test location and not more than 15 base stations and 300 mobile units overall under the requested authority. In other words, 15 base stations and 300 mobiles reflect the maximum number of units that would be in operation at any given time under this authorization. As required, Orbital would seek separate and specific authority if more units are needed to conduct a particular experiment. 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 fully with the FCC’s rules in this respect.

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. Moreover, operation in the 901-902 MHz and 940-941 MHz bands will be coordinated with PCS licensees to avoid interference.

The following frequencies are requested:

<u>Freq. (MHz)</u>	<u>Power (W)</u>	<u>ERP (W)</u>	<u>Station Class</u>
451.8 - 451.8	75	75	Fixed
451.8 - 451.8	40	40	Mobile
452.7 - 452.7	75	75	Fixed
452.8 - 452.8	75	75	Fixed
456.8 - 456.8	75	75	Fixed
456.8 - 456.8	40	40	Mobile
457.7 - 457.7	40	40	Mobile
457.8 - 457.8	40	40	Mobile
806 - 824	15	30	Mobile
851 - 869	75	160	Fixed
896 - 902	15	30	Mobile
935 - 941	75	160	Fixed

All power measurements are mean. The primary emissions designators are 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 requested frequencies.

The modulated signal and necessary bandwidth for the 450 MHz operations will be 5 kHz data and 20 kHz voice. 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.

Orbital submits that issuance of a license is in the public interest, convenience, and necessity as it will allow Orbital to develop advanced telecommunications systems.

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