

Supporting Statement for Experimental License

The Seattle-Tacoma International Airport (“SEA”) is participating in an experiment in conjunction with the Federal Aviation Administration (“FAA”).¹ Specifically, the experiment is to develop a radar system capable of observing and tracking bird activities. Such a system will permit the FAA to notify pilots of bird activity to minimize or eliminate aircraft striking of in-flight birds, which can cause serious damage to the aircraft. The system is currently operating under Special Temporary Authority, call sign WD2XZD. This request is for an Experimental License to allow long-term testing of the radar at a slightly different location than that authorized by the STA and to put the license in the name of the Seattle-Tacoma Airport.

Information concerning the system is identical to that filed with the application for WD2XZD. The two transmitters being utilized will both be a Furuno Model FR8252 X-Band, marine radar. The frequency of operation will be 9.410 MHz +/- 30 MHz. The emission type is 60M0P0N, which is a sequence of unmodulated pulses with no encoded information. Pulse duration and repetition rate will depend on the range setting of the radar in nautical miles. The following table applies:

Range Setting in Nautical Miles	Pulse Duration in microseconds	Pulse Repetition Rate in Hertz
0.125 to 1.50	0.08	2100
1.50 to 3.0	0.30	1200
3.0 to 96.0	0.80	600.

The system utilizes two antennas. The first antenna is a six-foot slotted array (Furuno type XN-13A slotted antenna). This antenna has a vertical beamwidth of 22°, a horizontal beamwidth of 1.35°, and a gain of 29 dBi. The second antenna is a two-foot parabolic dish (Accipiter type HPIM2219 parabolic antenna). It has vertical and horizontal beamwidths of 3.8° and a gain of 32 dBi. Considering a transmitter output power of 25.0 kw, the pulse duration and repetition rates, and the antenna gains, the average power being transmitted is as shown in the following table.

Range Setting in Nautical Miles	Average TPO in Watts	Ant One ERP in kilowatts	Ant Two ERP in kilowatts
0.125 to 1.50	4.2	3.34	6.66
1.50 to 3.0	9.0	7.15	14.26
3.0 to 96.0	12.0	9.53	19.02

¹ Federal Aviation Administration Research and Development Program AAR 411.

The Seattle-Tacoma Airport realizes that operation with an Experimental License is secondary and subject to causing no interference to other authorized services. The Airport also recognizes that because marine radar units are being used, the experimental configuration may not be eligible for permanent licensing under Part 90 of the FCC Rules and Regulations.

The Seattle-Tacoma Airport requests that the Commission grant the application, as submitted.