

Technical Description

Submitted by Joel Thorsheim on behalf of Insitu
The Boeing Company
Frequency Management Services
P.O. Box 3707 MC: 2T-22
Seattle, WA 98124-2207
206-544-6066 Office
206-662-0701 Fax

PURPOSE

This Special Temporary Authorization request is required to test and operate a command and control data link in the S-Band.

OPERATIONS DESCRIPTION

The system will be installed in a Ground Control Station, and provide command and control link from the GCS to the aircraft. Initial testing will be at Bingen, WA on the ground, followed up with airborne UAS testing at Boardman, OR, and then a long range test will start at Wasco Butte where the GCS will be located and a Cessna flying east up to 200 km LOS. For this range flight the Cessna may have to fly at altitudes up to 12,000 feet.

EQUIPMENT

Command and Control (Ground Station)

Manufacturer:	Freewave Technologies
Frequency Band:	2305-2314 MHz
Emission:	230KF1D
Transmit Output:	5 Watts
Power:	6.6 kilo Watts ERP
Antenna Gain:	33.3 dBi
Antenna Type:	2.7 Meter Parabolic Reflector
Note:	Antenna beam width is 3.3 degrees. Antenna will be directed in the direction of +78 degrees +/- 5 mile corridor. This RF link will be used to control a simulated UAV located inside a manned Cessna aircraft up to 200 km away.

Command and Control (Mobile Airborne)

Manufacturer:	Freewave Technologies
Frequency Band:	2305-2314 MHz
Emission:	230KF1D
Transmit Output:	2 Watts
Power:	3.2 Watts ERP
Antenna Gain:	5 dBi
Antenna Type:	omnidirectional dipole antenna

Stop Buzzer

Stop buzzer for this operation is Insitu the Operations Action Center at 509-637-4691.

SCHEDULE

Start Date: November 10, 2017
Stop Date: May 10, 2018

City	State	Latitude	Longitude	Radius (KM)	Station Type
Bingen Ground	WA	45-42-23N	121-27-23W	1	Fixed
Boardman Ground	OR	45-44-54N	119-47-38W	1	Fixed
Boardman Airborne	OR	45-44-54N	119-47-38W	50	Mobile up to 5,000 Feet Flight Level
Wasco Butte Ground	OR	45-36-26 N	121-19-53 W	2	Fixed Ground Control Station
Arlington (Center Point of flight Path)	WA	45-46-58 N	120-05-20 W	100	Cessna flight path from Wasco Butte location: heading +78 degrees with a +/- 5 mile corridor for 200 km, altitude 12,000 feet.

