

**FILING NUMBER:** 0635-EX-PL-2012

Application for New Experimental Radio Station Authorization (FCC Form 442)

**QUESTION 6: STATEMENT OF RESEARCH PROJECT**

(a) Blue Origin is an aerospace research and development company developing commercial space launch vehicle technology. Blue Origin conducts flight testing of these vehicles at its private test facility in Culberson County, Texas. This test facility is in the sparsely-populated desert of Western Texas, approximately 25 miles north of the small town of Van Horn.

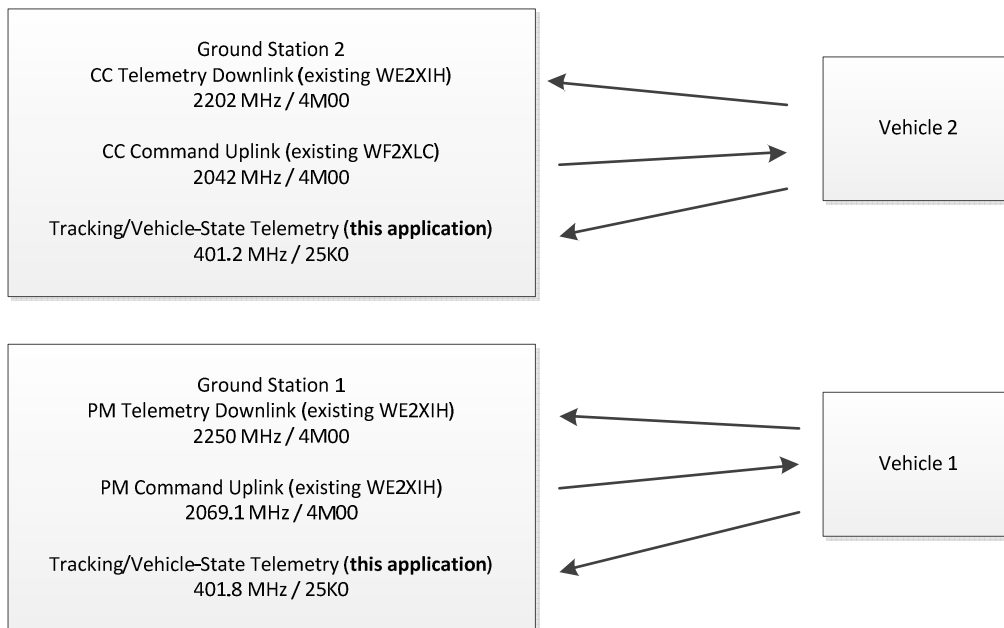
(b) The FCC license sought in this application will be used for flight testing vehicles under development. A telemetry radio link is required to receive data from the vehicles in real time while they are in flight and while undergoing ground testing. This application is for two frequencies for tracking acquisition of multiple vehicles flying simultaneously.

**ADDITIONAL INFORMATION**

The aerial vehicles fly a predominantly vertical trajectory before returning to land. During the flight, the vehicle lateral position will vary from directly over the landing pad up to approximately a 5-mile radius. The vehicles will employ real-time communications systems to provide telemetry to the ground. The frequencies will also be used to provide telemetry verifying the state of the vehicles.

The frequencies sought in this application will be used with transmitters located on the aerial vehicles and receivers located on the ground. The receiving antennas will be non-directional to assist with maintaining other, directional antennas pointing at the vehicles during flight.

These links between the ground and the vehicles are shown in the following diagram:



The telemetry downlink system has the following characteristics:

1. Digital data source with up to 10 kilobit/second data stream
2. RF transmitter
  - a. 401.2 MHz or 401.8 MHz carrier frequency
  - b. 10W RF output
  - c. Frequency-shift-key or Phase-shift-key modulation
  - d. 25 kHz bandwidth
3. Antennas
  - a. Two antennas per downlink
  - b. Omni-directional gain pattern
  - c. Either RHCP (right-hand circular polarization) or linear polarization (TBD)

**QUESTION 8: LENGTH OF TIME THAT WILL BE REQUIRED TO COMPLETE THE PROGRAM OF EXPERIMENTATION**

Blue Origin is developing a series of launch vehicles. Extensive flight testing is planned for multiple vehicles for more than a 5-year period. Blue Origin plans to use the telemetry equipment on multiple test vehicles over the course of a 5-year period following receipt of the license sought in this application.

**QUESTION 12: TYPE OF APPLICANT**

Blue Origin, LLC is a limited liability corporation formed under the laws of the State of Washington.