Memorandum

To	*Federal Communications Commission*			
From	*Firefly Aerospace*			
Subject	*Mission Overview*			
Date	*09/18/2020*			
Alpha	*FRN Number: 0028054328*	*STA File Number: 1386-EX-ST-2020*	*Call Sign: WQ9XZZ*	*Firefly Tracking Number: RPT_MSS_0029*

MISSION OVERVIEW

The purpose of the mission is to demonstrate Alpha as a small satellite launcher and to demonstrate Firefly Aerospace is ready to support small satellite launches from Vandenberg Air Force Base (VAFB). The mission will be launched from SLC-2W at VAFB. The launch will initially target a 300 km by 300km orbit inclined at 137 degrees then the vehicle will execute a technology demonstration to achieve a 300km by 450km orbit inclined at 137.5 degrees. It will have a 2215MHz downlink for telemetry and a 2205MHz downlink for ranging/location information. The 2215 MHz downlink will terminate 4,722 seconds into flight; the 2205 MHz downlink will terminate less than 600s into the flight. The stage will complete less than 2 orbits while it downlinks data to VAFB and KSAT ground station locations in Hawaii, Mauritius, and South Africa. The entire mission is expected to last no more than 1.5 hours.

The launch vehicle uses a traditional Flight Termination System (FTS) - ground-commanded initiation of the onboard ordnance, with additional failsafes, for the purpose of ending powered flight if necessary. The FTS will be armed just prior to launch and will not receive a ground commanded signal once the period of Range Safety responsibility has ended. The FTS will be inoperable after passivation.

Once the vehicle reaches an altitude of 300km with an inclination of 137°, it will deploy payloads. After this deployment, Stage Two will perform a relight, for technology demonstration purposes, to achieve a 450km apogee with a 137.5° inclination. After the relight, the final payload will be powered on – completing the mission. Stage Two will autonomously passivate – venting onboard propellant and gas, draining the flight batteries, and ensuring there is no remaining source of energy available on Stage Two. All radios on the stage will automatically turn off at this point as well, not including payload signals which are licensed separately. The passivation and RF control script is programmed into the control system and is autonomous. Therefore, the RF communication link is not able to be controlled or turned off from the ground.