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Antenna Registration Question 4 Directional Antenna Information

The directional antenna information was filed under the original application (0354-EX-PL-2008). In summary, this directional antenna being used for this project is a 21-meter reflector with an 0.37 F/D ratio. The maximum vertical height above ground (apex of feed at 90 degree elevation) is 25.6 meters (84 feet). The height above ground to the elevation axle is 14.17 meters (46.5 ft). The height to center of feed ring at 0 degrees (horizon) pointing elevation is 14.17 meters (46.5 ft).

Form 442 Question 4: Government Project Description

The Johns Hopkins University/Applied Physics Laboratory (JHU/APL) is performing this work under NASA Contract #NNN06AA01C. Under this contract, JHU/APL is responsible for the calibration of the Mini-RF radar system, which is an instrument of NASA's Lunar Reconnaissance Orbiter (LRO) program. This spacecraft is currently orbiting the Moon. Until JHU/APL located the 21-meter Morehead State University ground station in mid June 2009, we did not believe we were going to be able to calibrate this instrument at 7140 MHz. This test is currently scheduled to take place in mid-August 2009 timeframe.

Form 442 Question 6: Description of Research Project

This ground station will be used to uplink a CW tone within the RF band (7130 to 7150 MHz) to the Mini-RF Synthetic Aperture Radar which is currently orbiting the moon. This CW tone will be received by the Mini-RF radar system and used to calibrate the receive system of the radar.