

To: Parker Francis
E-Mail: parker.l.francis@gmail.com
From: Leann Nguyen
Date: October 26, 2016

Subject: Request for Info - File # 0476-EX-PL-2015

Message:

IB/SD has reviewed the update information for the subject request (Univ of Texas, Armadillo) and have the following comments/questions.

In our previous email, we ask the following questions but did not received a response from the applicant.

1) In the Orbital Debris Assessment Report (ODAR), we note that a laser in AMES Research Center will be used for ranging experiments.

1a) Please provide who owns and operate the laser station.

1b) Please provide any additional available information concerning the nature of the laser ranging experiment and

1c) what frequency the laser operates?

Review of documents (Form 442 and Space Capture API file)

UPLINK:

2) In form 442, the emission designator value is NON; however, in the SpaceCap API file it has the emission designator as 25K0F1D. Please verify the uplink emission designator and update either document as appropriate.

3) In the SpaceCap API file, beam UPLINK, Max co-polar gain box B.3.a.1 has a value 14.4 dBi which is the same value as the earth station. This data field is for the Spacecraft receive antenna gain. The downlink spacecraft antenna gain is -5 dBi so this may be the value for the spacecraft uplink receive antenna gain. Applicant please verify this uplink spacecraft antenna gain and update the SpaceCap API file as appropriate.

4) In the SpaceCap API file, beam UPLINK, Group 2, max peak power (box C.8.a.1/C.8.b.1) and min peak power (box C.8.c.1) have a value of 33.6 dBW; however, form 442 max power is 100 watts (20 dBW). Applicant verify the uplink max power and update either document as appropriate.

5) In the SpaceCap API file, beam UPLINK, Group 2, Max power spectral density (box C.8.a.2/C.8.b.2) and min power spectral density (box C.8.c.3) will need to update this value if the power changes; please use the power spectral equation $PSD = \text{Power (dBW)} - 10\log_{10}(\text{Bandwidth in Hertz})$. For example if power = 10 dBW and 15kHz bandwidth then $PSD = 10 - 10 \cdot \log_{10}(15000)$

DOWNLINK:

6) In form 442, downlink we notice that the ERP value is given as 2.2 watts; however, our calculation shows a value of 0.193 watts taking into account the power of 1 watt and antenna gain of -5 dBi. Applicant please verify the ERP value and update the document as appropriate.

7) In the SpaceCap API file, beam DOWNLINK, Group 1, minimum elevation angle (box B.2.bis.b) is blank. Please provide a value in this field.

8) In the SpaceCap API file, beam DOWNLINK, Group 1, associated earth station, Noise temperature (box C.10.d.6) has a value of 75 kelvin. This value seems to be lower than typical values for UHF antennas. Can the applicant verify this value and updated the field as appropriate.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of October 26, 2016 may result in application dismissal pursuant to Section 5.67 and forfeiture of the filing fee pursuant to Section 1.1108.

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Responses to this correspondence must contain the Reference number : 34459