

Anthony Serafini

From: Anthony Serafini
Sent: Thursday, February 16, 2017 9:19 AM
To: 'jfoley@calpoly.edu'
Subject: Planetary 0136-EX-CN-2016 IB questions

Justin

Our International Bureau has provided the following comments and questions for this application. Please respond to the following:

IB/SD has reviewed the subject request and have the following comments/questions:

For the ODAR, we have the following questions:

1. Please provide an estimate of satellite orbital lifetime in the event solar arrays and sails do not deploy.
2. Please discuss reliability with respect to solar array and sail deployment—is deployment passive? Does it require specific subsystems, such as power or communications, in order to proceed? What is the estimated reliability of any such systems? (To the extent deployment of any drag-increasing components is independent of other systems and assessed to be highly reliable, please provide the estimate requested in number 1 assuming such deployment.)
3. Please indicate the specific assumptions and calculations used in deriving the C/S figure of 8 m2 in Table 4.
4. Please provide a signed copy of the final ODAR.

For form 442:

4. Please review the ERP value of 2334 W for earth station in San Luis, Atlanta and Honolulu.

Our calculation shows a value of 2851 W ERP given the following:

$17.8 \text{ dBW} + 18.9 \text{ dBi} = 36.7 \text{ EIRP}$; $36.7 - 2.15$ (convert EIRP to ERP) = 34.55 dBW ; divide by 10 and raised to the 10th power: $10^{3.455} = 2851 \text{ W ERP}$.

For SpaceCap API:

Uplink beam, group id 1:

5. the polarization type is "L" however in the NTIA it is "CR"; in other filing this also has been "CR"; please check this value.
6. max and min power level is 2; however, form 442 has it as 17.8 dBW (60 W); please check this value.
7. the max and min power spectral density values will need to be updated if the max power changes.
8. associated earth station, will either need the geographical coordinates on each location or use a typical earth station and add USA to the service area.

Downlink beam, group id 2:

9. minimum elevation angle should be 5 degrees.

10. the max and min power values should be zero based on form 442. Please confirm this value

11. the max and min power spectral density values will need to be updated if the max power changes.

12. associated earth station, will either need the geographical coordinates on each location or use a typical earth station and add USA to the service area.

NOTE: if you find ITU-R antenna pattern recommendations, applicant can cite these ITU-R recommendation(s).