Applicant: The Boeing Company
File Number: 0279-EX-CN-2022
Correspondence Reference Number: 68374

1) It is indicated in the narrative that 4 modules will be used, but only 2 slots on the Sherpa transfer vehicle will be occupied.

    a. Please provide additional details on the physical configuration of the spacecraft and integration.

    b. Please provide a detailed technical description of the spacecraft, to include but not limited to: power subsystems, thermal control subsystem, attitude control subsystems, etc.

Please see attached charts, which are marked as confidential. The Varuna Sherpa vehicle mounts to the launch vehicle adapter ring. Only two "slots" on the Sherpa are used for this mission – one for the Command and Control System (CCS) Module and one for the Mission Payload Module. Ballast masses may be attached to some of the empty ports to help modify the vehicle center of gravity. None of these modules or masses deploy and there are no other payloads, separable or attached. The UHF whip antenna is the only deployment that occurs after separation of the Varuna Sherpa vehicle from the launch vehicle. The accompanying slides attempt to clarify this, in addition to provide additional detail on several vehicle subsystems. We request that this information be treated as Confidential.

2) Provide stop buzzer POC information.

    a. **The Payload Test Director, Chris Eubanks, can be contacted at 310-529-7849 or christopher.r.eubanks@boeing.com with any concerns or issues regarding the operation of the Varuna mission**

3) Please confirm emissions from the spacecraft can be turned off by command from a ground station and method of termination.

    a. **We confirm a set of commands can be sent to the spacecraft via the TT&C radios to terminate beaconing and any other RF transmission**

4) A quick calculation using the emission designator and minimum peak power provided In the spacecap for UTX E and UTX2 E would appear to give a minimum peak power density closer to -86 than the provided -60. Please confirm if the minimum power density values for UTX E and UTX2E provided in the spacecap are correct or require updating.

    a. **The minimum peak power was changed to -14 dBW in the corrected SpaceCap file that we have provided with these responses, correlating to the -60 dB(W/Hz) minimum peak power density.**

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5) Please include ALL transmissions, uplink and downlink (including all earth stations) in the spacecap. If you are requesting use of V-Band frequencies in this experimental filing, please include the required information in the spacecap

    a. **The V-Band frequencies associated with VARUNA mission will be used in accordance with the Boeing V-Band license (Call Sign, S2993, IBFS File Nos. SAT-LOA-20170301-00028) and notified to the ITU as USASAT-NGSO-5. Therefore, the V-Band frequencies for this experimental filing have already been submitted to the FCC and, coordinated and notified at the ITU under the filing name USASAT-NGSO-5.**