1. The provided casualty risks of the spacecraft (1:19,700) and the launch vehicle adaptor (1:12,500) would present a combined risk of 1:7,647.

   REPONSE: These probabilities will be updated in revised filings to account for a change in the orbital location of the BW3. However, because the launch vehicle adaptor is released by the satellite prior to the start of the mission, it will re-enter the atmosphere well in advance of the BW3. For this reason, it is not valid to treat the casualty risks of the spacecraft and the adaptor as a combined risk. They should be viewed as separate risks, and the risk for each is never more than 1:10,000.

2. What steps were taken during the design phases of the spacecraft, and launch vehicle adaptor with separation ring with regards to demisability?

   RESPONSE: AST's design and material selection have been made to ensure a less than 1:10,000 possibility of casualty risk from reentry. For example, the LVA was designed to be just a structural frame with no internal components. Materials were selected during the design phase of both the launch vehicle adapter and satellite for demise on re-entry. The separation ring is a standard component and widely used commercially by other payloads.

3. Please provide additional information on the Control Sat component of the spacecraft. What is the mass, shape and material composition of the object? Is it nested inside the spacecraft itself, and if so how deeply, providing protection/delay from normal reentry conditions?

   RESPONSE: The ControlSat is the structural box that contains all of the major subsystem elements of the satellite. This includes avionics, propulsion, attitude determination and control system (ADCS), communications, and electrical power subsystems (EPS). The ControlSat structure is external and interfaces with the phased array. In the worst case scenario, where the ControlSat does not demise on re-entry, the total casualty risk does not exceed the 1:10,000 requirement. The ControlSat and phased array together represent a total risk assessment of 1:19,700.

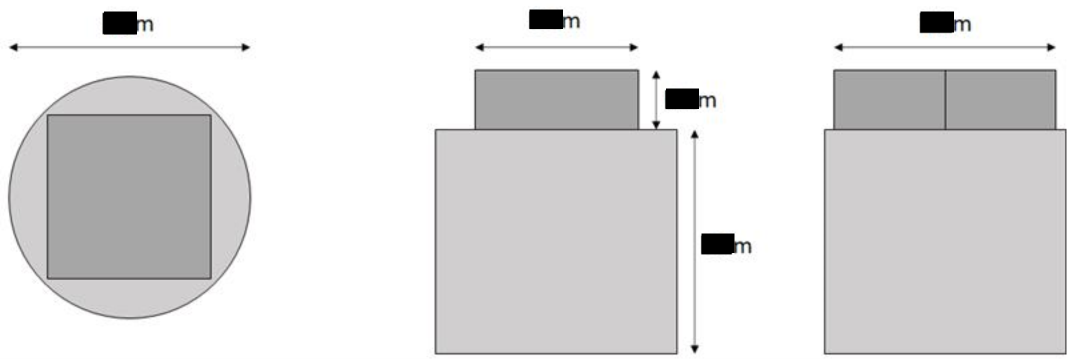
4. Would it be possible to use alternate materials that are more likely to demise during reentry?

   RESPONSE: This has already been taken into consideration during the design phase and material selection process. The re-entry analysis demonstrates the worst-case scenario where the entire ControlSat does not demise on re-entry. There is nothing special or different with regard to AST's ControlSat design when compared to any standard spacecraft already authorized by the Commission.

5. Additionally, please provide detailed information on the launch vehicle adaptor and separation ring. Are these a single object or two separate objects? Please provide the

mass(es), shape(s) and material composition(s). Were other designs considered before ultimately selecting the current design?

RESPONSE: The launch vehicle adapter (LVA) and separation ring are combined. The adaptor houses the satellite prior to deployment and connects to the separation ring so that the satellite can interface with the launch vehicle fairing. The LVA is a composite and aluminum cylinder that is [redacted]m in diameter and [redacted]m in height as seen in the image below. The ControlSat protrudes from the top of the LVA and the separation ring interfaces at the bottom of the LVA. Other designs were considered, but posed a much higher risk of failure to demise on re-entry given the complex nature of earlier designs.



6. Are other designs, with greater theoretical chances of demise, available and/or feasible?

   RESPONSE: Through all stages of the design process, AST has been aware of its responsibility to mitigate against orbit debris and has taken this duty seriously. The resulting design balances those goals with the design needs of the novel communications system that AST will offer. At this stage in the development, the current design poses the greatest theoretical chance of demise of all designs considered. It is not possible to iterate on the design process again.