Applicant: True Anomaly

File Number: 2110-EX-ST-2022

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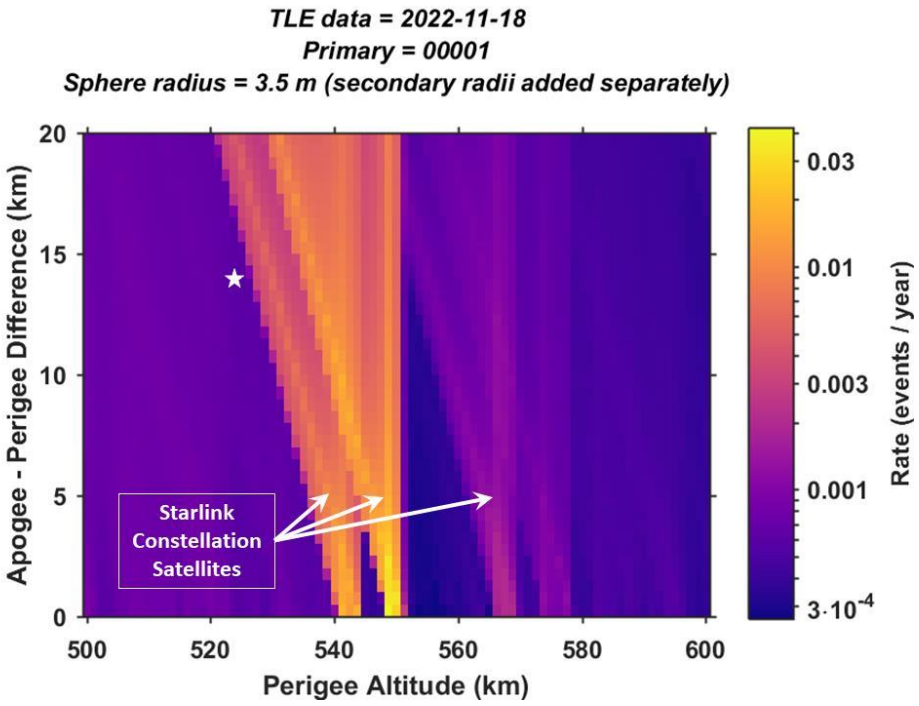
1. What is the targeted level of risk reduction?

For risk reduction processes requiring improved state knowledge, True Anomaly will work with 18 SDS on a consistent basis to share ephemeris data and utilize the Space Surveillance Network to ensure a probability of collision can be maintained that is less than 1e-4. For the cases where improved state knowledge still indicates a conjunction risk greater than 1e-4, True Anomaly will exercise a response process that includes active maneuvers.

2. Is this level of risk reduction routinely achievable?

Using the figure below provided by the NASA CARA handbook to predict expected events over the lifetime of the vehicle, a conservative event rate of .04 events per year can be used to estimate the number of expected conjunction occurrences.



The True Anomaly spacecraft can routinely reduce conjunction risk by maneuvering. For example, even assuming a highly unlikely operational scenario where 8 conjunction warnings (a very high number) are received per year over an extended 5-year mission, the spacecraft would still have ample fuel remaining for more COLA maneuvers and the intended mission. This worst-case scenario of all 8 events occurring

on a single vehicle per year would indicate the spacecraft should have sufficient propulsion resources to accommodate 40 conjunction-mitigation maneuvers over a 5-year lifespan. Using a 250-meter range threshold for acceptable conjunctions, a mitigation maneuver of .55 meters/second would quadruple the tolerable conjunction range by achieving an altitude change of 1 km in less than one hour. With a high-thrust chemical propulsion system and with a go/no go COLA maneuver timeline of TCA – 24 hours, the Jackal vehicle will have greater than 40 opportunities to correct and confirm the effects of said maneuver. The full series of conservative risk mitigation assumptions dictates a quantity of ~20 meters per second on-board each vehicle. True Anomaly's planned fuel allocation exceeds this by an order of magnitude, so the maneuvers intended to mitigate flight safety risks will be routinely achievable by the Jackal vehicles.