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QUICK-LOOK OPERATIONS CONCEPT FOR A SPACE ELEVATOR

Abstract

The ability to inexpensively move massive amounts of materials and people will enable space colonization. The needs of the people and their habitats will drive logistics loads to levels never achieved before in the space arena. Key to this enabling technology is the space elevator. One of the first steps in developing an infrastructure is the drafting of an operations concept and plan for a space elevator. The Mission Operations Plan documents the operations concept. It is one of the most important deliverables from the mission operations organization before launch and their main tool to influence the design of the mission and spacecraft. A mission operations concept specifies how the mission operations system (MOS) will meet mission objectives. It describes—in operator and user terms—the operational attributes of the mission’s flight and ground-based elements to include (a) Provides derived requirements for the mission operations system and traceability to top-level mission requirements, (b) Emphasizes areas where trades can be made to minimize lifecycle costs and get better information from the mission—look for high cost areas, (c) Requires different disciplines (designers, users, operators) to communicate with each other, and (d) Assures that the operations organization provides a tested and certified mission operations system that meets requirements at the lowest cost. This paper will take a “quick-look” at an operations concept for a future space elevator.