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Space Elevator as Transportation Infrastructure to Access Space (3)

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SPACE ELEVATORS ENTERING ENGINEERING DEVELOPMENT - NOW

Abstract

The Space Elevator community has developed the necessary body of knowledge sufficient for the initiation of a Space Elevator development program. With the publishing of 15 technical studies (2 IAA, 13 ISEC, 1 Obayashi) we believe the implementation of a Space Elevator is now necessary to support humanity's needs and dreams. We can make the bold statement -

We are ready to initiate a mega-project, called the Space Elevator - as the technologies are lined up as required. It is not only desirable for moving tonnage to orbit, but it is necessary for the health of Humankind. The process of Architectural Engineering, which focuses on major system development, is relatively new in the space arena. This paper looks at Architectural Engineering as a discipline and shows its strengths for producing developmental roadmaps. Space Elevators are shown as being in a sequence, or flow, of development. This explains how the design of Space Elevators has moved past the preliminary technological readiness assessment and is ready to initiate segment level testing towards engineering validations. The development of Space Elevators should be initiated NOW for two reasons. • First: The Demand Pull for customer delivery of massive tonnage to GEO and beyond cannot reasonably be accomplished with traditional approaches. • Second: The situation has altered in the Space Elevator developmental status. We now have a material that can be used for the tether and is long enough and strong enough. Phase two can begin now as phase one has been completed. Industry involvement is an imperative. Phase two activities are driven by six major activities: examine Industry's production foundation, determine if the segments can be built, assess schedule technical risk, delineate design criteria, set criteria and standards to enter the Design Validation Phase, and baseline operations performance.