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Assuring a Safe, Secure and Sustainable Space Environment for Space Activities (4)

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SUSTAINABLE TECHNOLOGY MANAGEMENT MODEL FOR SPACE DEBRIS CONTROL.

**Abstract**

Today, the development of space technology has provoked pollution that expands beyond the frontiers of earth surface becoming a latent threat for space activities. The generation of space debris originated from different causes such as the collision of solid objects in space, fuel tank explosions, meteor impacts or satellite malfunctioning has generated pollution in space threatening space activities. The world space agencies are searching for solutions to mitigate and control debris located on low earth orbits, which makes more important to consider the space debris problem from an integral point of view. This work aims to present research advances to elaborate a proposal of a technology management model that integrates sustainable strategies for the decision makers referred upon the control of satellite final disposal at the end of use life. The model is based on the planning, evaluation, control, execution, and implementation processes. The technology management is an industrial activity and an educational and research emerging field that has not being consistently defined, where innovation processes through research and development projects to introduce the use of technology in products, industrial processes and in other structural and functional fields of an organization, as well as the utilization of this knowledge in the solution of different society, human being and environmental problems are included. In a addition, this proposal suggests the analysis of product life cycle as a tool incorporated within the satellite design process to identify the indicators to establish the necessary sustainable characteristics to be observed to generate a comprehensive proposal of the technology management model for space projects in Mexico. This will allow to link science, engineering processes and administrative disciplines through a model that considers planning, development and execution with all technological capacities in research and development space projects with a sustainable perspective.