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Contribution of Space Activities to Solving Global Societal Issues (2)

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BLUEPRINT FOR SOCIETY: SYSTEMS ENGINEERING FROM SPACE TO EARTH

Abstract

Designing optimal solutions to global issues is a very difficult process due to existing infrastructure, policies, laws, power structures, resource needs, and economies. Space, or any off-Earth settlement, provides a blank slate for finding optimal solutions for systems regarding survival and maintenance of a society by massively reducing waste, increasing efficiency, maintaining infrastructure, and supporting human life. Systems on Earth are constantly evolving with new technologies and opportunities, but degrade over time and are accessible in all areas. Here lies an opportunity to use Space to benefit Earth. Presented in this paper is a road map of ideal technology and policy development in an ideal, theoretical setting of a space colony with connections to implementation on Earth.

Effective space activities involve complicated logistics, planned years in advance of building. How will we design infrastructure that can be optimized for these and other parameters? In addition, no heritage exists for developing structures on other planets, so how do we also allow for the adaption and iteration necessary for alien environments, evolving technology, and changing circumstances? Future goals are to design a system and processes for space and Earth activities in a joint manner, answering questions such as: which technologies are needed to support societies on and off Earth? How are these systems integrated, and which are a priority to develop first? And at every phase, how can this be adapted for development on Earth? This road map outlines the next 20 to 30 years of societal systems such as policies, politics, technology, ideal solutions for energy, sustainable development, access to water and clean air, civil rights, and population and resource management. By outlining a road map of developmental structure, this paper outlines a “blueprint for establishing society” adaptable to Earth or any space colony.