

SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FAR FUTURE (D4)  
Novel Concepts and Technologies (1)

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CRITICAL CAPABILITIES AND SYSTEMS FOR ECONOMIC DEVELOPMENT OF CISLUNAR  
SPACE: IS THE NBIC (NANO-BIO-INFO-COGNO) REVOLUTION CHANGING THE PROSPECTS?

**Abstract**

Even before the opening of the space age, in 1957, concepts about the extension of humankind's sphere of economic activities beyond the Earth atmosphere have been proposed by visionaries like Arthur C. Clarke or Krafft A. Ehrlicke. In the following decades, while astronauts succeeded in traveling to the Moon, and establishing outposts close to the Earth, new and fascinating concepts of Cislunar space economical development were imagined by other visionaries like Arthur Glaser (Solar Power Satellites), Gerry O. Neil (Space Colonies) or Roger Angel (space screens to block solar light and limit global warming). However the fact is that in 2012 none these advanced concepts have exhibited any real progress towards development, deployment and utilization. Does this mean that the concepts of industrializing Cislunar space are totally wrong? Or is it simply that, in the first half-century of space activities, the available technologies were not sufficient to enable a transition from a state in which mostly information (without mass) can be traded in space to a situation in which large scale engineering and industrial projects (involving material and energy) can be undertaken in the Earth-Moon system? If the second hypothesis is right, which we are inclined to believe, what are the critical capabilities and systems that would be necessary to jump-start industrialization of Cislunar space? And could the accelerating progress in NBIC technologies contributes in a significant, or even revolutionary way, to the acquisition of these capabilities and to the development of these systems? The paper will address these different issues.