

15th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE (D4)
Innovative Concepts and Technologies (1)

Author: Dr. G.S. Krishnan
(*country is not specified*), skrishnan9@hotmail.com

STRATEGIC SYSTEM OF SYSTEMS: GLOBAL ECONOMIC CHALLENGES AND THE
EXECUTION OF SPACE MISSIONS

Abstract

The current economic conditions across the globe are forcing some space faring nations to cut down or streamline its investments in space related missions. The luxury of “doing it alone” may be seeing its final days. A new way of getting access to and into space must be considered, carefully evaluated and mankind’s desire to know more beyond our planet is to be sustained. This paper discusses how a system of systems approach can be taken to maximize existing and future infrastructure and resources without compromising safety, quality and performance of missions. System of systems engineering is an enormous and risky task by all standards. Collaborative engineering is about leveraging an organization’s relevant expertise and intellectual assets in development of its systems, which in some cases, may be a system of systems.

The paper further discusses the consolidation of facilities and infrastructure needed to meet mission requirements; dual or multi-use of systems with respect to cost-sharing and schedule optimization. Also presented by way of examples, are the benefits and challenges of the Strategic System of Systems approach in difficult economic times. This paper concludes by discussing suggested approaches and mitigation strategies for maximizing limited resources available to space programs in a world of economic turmoil.