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Real Options and Flexibility Approach to Systems Engineering
Enterprise Wide Satellite Communications

Topics
Networks & Networking
Cognitive Social Issues
Organizational Issues

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Abstract

Satellite communications have become a significant form of communications for government agencies. While traditional systems engineering (TSE) has served the satellite developers and terminal developers, this has often been focused on determining the requirements for that constellation, and then separately determining the requirements for each terminal. The incorporation of Real Options (RO) and Flexibility concepts, combined with Enterprise Systems Engineering (ESE) paradigms, provides the opportunity to add significant value to the using community while impacting the budget to any great extent. This paper will evaluate the concept of satellite communications from the standpoint of a group of satellite systems and terminals being procured by a single agency that would be responsible for the total capability for a 30 year timeperiod. This concept will remove the concept of each capability being bought by individual programs, and will introduce the concept of measuring initial utility and utility over rolling time periods to ensure progress is being made. This paper will also introduce the concepts of inserting Real Options from a bottom up approach for each subsystem (satellite and terminal), and from a top down approach across the total enterprise of constellations and terminals.