

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
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FRAMEWORK DESIGN OF AEROSPACE VEHICLES COMMON MISSION PLANNING SYSTEM
FOR PLAN OPTIMIZATION

Abstract

With the rapid development of the space technology, the research of aerospace vehicles mission planning systems is becoming more important. Aiming at fulfilling the future development requirements of aerospace vehicles, a framework of aerospace vehicles common mission planning system in component based hierarchical architecture is proposed. Based on the basic unified standard framework, functional components can be flexibly divided and expanded. Planning results can be simulated and evaluated in the mission planning system as well. Besides, the common mission planning framework can be applied throughout aerospace vehicles full life cycle including demonstration, research, operation and maintenance ,recycling and reuse, taking several factors such as cost, safety coefficient, convenience and practicability into account. It can be applied to support the rapid development of mission planning system, studies of the aerospace vehicles flight plan scheme and evaluation for numerical simulation so as to fulfill the requirements for different aerospace application. Eventually, it can provide the optimized results which are suitable for specific aerospace vehicles plan scheme.

Keywords: optimization, aerospace vehicles, mission planning, framework design