

SPACE SYSTEMS SYMPOSIUM (D1)
System Engineering Tools, Processes and Training (2) (6)

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ARCHITECTING METHOD TO ASSESS CONCEPTUAL DESIGN OF PLATFORM BASED
SATELLITES

Abstract

This paper aims to propose a systems architecting method to assess and guide the conceptual design of platform based solutions for satellite space applications. The method helps the developers to assess the platform comprehensiveness in terms of possible missions and to assess the platform changeability to achieve future missions with a minimum impact in terms of modifications. Comprehensiveness aims to balance platform comprehensiveness attributes in terms of missions and the platform efficiency, based on the additional mass necessary to comply with space environment requirements like drag, radiation, torque, etc. The more over dimensioned, the less efficient is the satellite. Changeability attributes applicable to the platform aims to implement parameters like robustness, flexibility, agility, etc. showing the capacity of the platform to comply, fast and with minimum modifications, with the future missions. Comprehensiveness will be exemplified with a real case, the Multi-Mission Platform (PMM) conceptual design. Conclusions are that the method promotes a great enhancement on the productivity of platform based solutions conception while increasing the quality of the conceptual phase results.