

SPACE SYSTEMS SYMPOSIUM (D1)
Space Systems Engineering - Methods, Processes and Tools (2) (4B)

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PLATFORM ADOPTION OR DESIGN A SPECIFIC SATELLITE FOR A SPACE MISSION
DEVELOPMENT

Abstract

Nowadays, the adoption of platforms conceived for multiples missions has been adopted by several countries as a mean to reduce space mission cost or delay. Each mission has specific requirements like orbit, pointing target and payload. These characteristics usually affect the platform by changing its layout (positioning the solar panels, payload target, antennas, solar and star sensors) or the equipment dimensioning (tanks, torque rods, reaction wheels capacity, data storage capacity, etc.). Some of these changes possibly were considered during the platform design and qualification phase. For some of them were not considered and require a complementary qualification or design new equipment. For these cases, the mission cost and delay will increase up to overcome a limit for what a design of a specific satellite, is more suitable. A satellite designed for a specific mission is more efficient due to the overhead reduction (avoiding dimensioning for the worst case of all platform considered scenarios). The main question is, how to detect, at the project begin, that is more suitable to develop a specific satellite instead of designing a satellite based on a platform. The main objective of this paper is to establish some guidelines to take this decision, as soon as possible in the project phases, avoiding enter too much in the design phases.