

SPACE SYSTEMS SYMPOSIUM (D1)
System Engineering Tools, Processes & Training (I) (3)

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A METHOD FOR ASSESSING COST AND VALUE FOR STAKEHOLDERS ALONG SPACE
PRODUCTS LIFE CYCLE**Abstract**

This paper aims to propose and demonstrate a method for assessing cost and value for stakeholders along space products life cycle. Space projects require continuous demonstration of sustainability. Sustainability here means the ability to sustain the level of value provided to stakeholders over a space product life cycle. In order to get the resources (not only monetary) necessary to start a project and to keep it running, it is necessary to demonstrate the value the project can deliver and the costs involved. This needs to be done from the outset of a space project and also over space product life cycle, from concept through operations up to decommissioning. The method includes essentially three stages: stakeholder identification, cost and value definitions to stakeholders, cost and value assessment over life cycle. The method runs alongside the space product architecting process showing how costs and value may vary according to architecture decisions. Metrics derived in the method can be used to manage the actual life of a space product. The method is demonstrated on the SARA suborbital system developed by the Institute of Aeronautics and Space and the Brazilian industry, in São José dos Campos, SP, Brazil. SARA is a small Brazilian reentry satellite for microgravity experiments. However simple, this project is adequate for demonstrating the method. Main stakeholders in the project are scientists, system architects, industry, funding agencies. Value and cost was defined for each of these stakeholders. Value and cost metrics, measures and indicators were derived, during the system architecting stage, and evaluated if they were adequate for being used product life. Life cycle experts evaluated how comprehensive, complementary and independent were the metrics. Conclusions were that metrics derived by the method were adequate and workshops with stakeholders showed they were also a “selling help” for the project.