

Functionality-based value assessment of alternative electric satellite propulsion architectures

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ABSTRACT: The static relation between business and engineering hinders pace in the preliminary design phases. While program managers often evaluate a design in terms of financial value generated over a number of business scenarios, engineering design teams base their activities on improving product functionality and meeting technical requirements. This often results in insufficient common understanding during gate meetings about the business implications of alternative technological trade-offs.

The first results of a functional-driven value modelling method used in the design evaluation of electric propulsion architectures are presented. The method has been used to assess architectural configurations for different space applications: 1) geostationary and 2) mega constellations satellites.

The results indicate a bi-directional interest in between business stakeholders and technology focused design teams. The methodology supports the creation of common representations that can be used by stakeholders to share knowledge and find common ground in gate meetings.