

IAF SPACE SYSTEMS SYMPOSIUM (D1)  
Lessons Learned in Space Systems (7)

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TRENDS FOR LCA APPLIED IN SPACE MISSIONS

**Abstract**

ESA since 2011 leads the application of life cycle assessment (LCA) into space missions, from various satellite applications to launch segments. ESA adopt a holistic approach which requires system thinking when applying LCA to space mission, which results in a multi-disciplinary interaction typical from system engineering processes. The expertise and data acquired during the years enables the elaboration of tendencies regarding the environmental impact among different phases and contributors of a space project. In particular, the paper will focus in providing data trends coming from ESA missions analysing the typical shares of environmental impact by phases (A+B, C+D, E1, etc.) and for specific engineering processes like manufacturing, office work, system testing, equipment/unit testing, assembly and integration, and several others.