

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

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A DECADE OF LCA APPLICATION AT ESA

Abstract

European Space Agency (ESA) since 2011 leads the application of life cycle assessment (LCA) into space missions, from various satellite applications to launch segments. ESA adopts 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 enabled the creation of the ESA LCA Handbook and Database, which have been applied to ESA project and missions. The paper will cover the heritage and achievement in a decade of applications in space, launch and ground segment. In addition, it will propose a study assessment, showing the results of a comparison of the environmental impact of several ESA Earth Observation missions and the related lessons learned.