**Low cost space mission trends and approaches in early design phases.**

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**Abstract**

During the last decade much more often “low cost mission” have been implemented or studied by national and international agencies, seeing a wide range of mission objectives, from In-Orbit-Demonstration to interplanetary exploration.

These led to an increase in the cadence of missions. Mission cadence is a major enabler of technological innovation and the driver for the training and testing of the next generation of managers, engineers, and scientists.

*“Buying a low-cost spacecraft is comparable to buying a family car. We look at our approximate budget, evaluate what is available on the market, and select a car which is some compromise between what we want and what we can afford.”[1]*

This paper describes recent trends and approaches related to the definition of low cost projects.

In particular, it address aspects such us: requirements definition, achievable performances, standard products utilization and reusability and related impacts on procurement, engineering and product assurance processes.

Moreover, the exploitation of future technological trends (e.g. advanced manufacturing) and commercial products such as CubeSat standard are treated.

Ultimately, this document aim to provide to the reader a compressive picture on trends and approaches for low cost missions definition.

1. **References**

[1] James R. Wertz, Simon Dawson: What’s the Price of Low Cost?, Microcosm, Inc. Torrance.