**Review on Concurrent Design practice in the space sector**

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1. **Abstract**

Over the last decades the concurrent design approach got widely adopted by organizations dealing with feasibility studies of space missions. It has shown to be an effective method to evaluate new space missions as well as to verify given proposals in a time efficient manner. Common to the various implementations of the concurrent engineering paradigm into conceptual design studies are: a multidisciplinary team, a tool for managing a shared system model, a structured process for collaboration, and an environment for the team to get together for concentrated face-to-face work sessions. Besides theses commonalities, different organizations have developed different practices.

#### The goal of our work is to analyse the differences in people management, tools, processes and facilities across many organizations using this type of concurrent design. Our analysis is primarily based on data collected through a survey along the four topics: 1) people and team, 2) tools and shared model, 3) process, 4) infrastructure and facility. Most of the questions can be evaluated quantitatively to allow a clear characterization of the state-of-the-art. Moreover, we capture current challenges and future trends for each of the four topics. The survey is conducted among subject matter experts involved in various roles in this type of concurrent design.

We explain the different applications of concurrent design approach by their organizational context and the specific purpose the approach is used for. This review gives a broad insight into the practice of concurrent design in the space sector. Finally, we point out topics most relevant for future research.

1. **References**

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