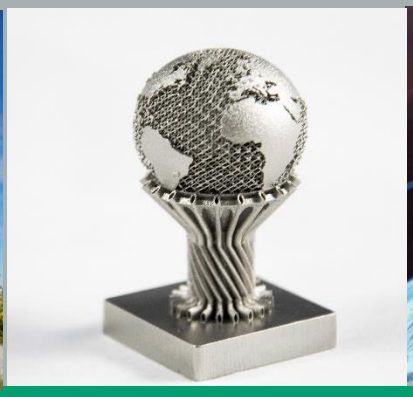
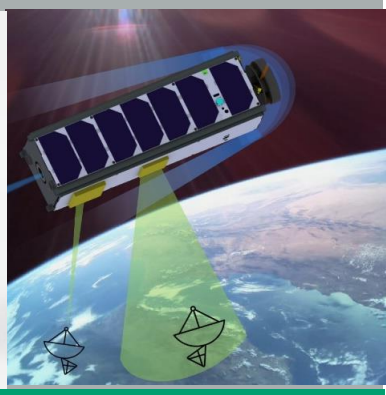
ZENTRUM FÜR TELEMATIK

ca.i CAMPUS ADDITIVE INNOVATIONEN





COOPERATIVE TEAM PROJECT WORK

Potential analysis and feasibility study of Additive Manufacturing for nano-satellites

Aim of the work: Additive Manufacturing is already used in various industries. In order to evaluate the potentials especially in the field of aerospace for very small satellites of a few kg of mass, a potential analysis and a short feasibility study will be carried out within the scope of this cooperative project work. The focus will be on increasing the functionality, lightweight construction and integral design of the components of nano-satellites through additive manufacturing.

The following scopes of work are to be processed (exact work packages are not fixed):

1. **Literature review** of basis and state of the art of
   - Additive Manufacturing and production technology (basics, potentials, materials)
   - Nano-satellites and space technology (basics, manufacturing, usage)
2. **Research** of requirements of nano-satellites and its components (e.g. mechanical, thermal, electrical etc.) and **derivation** of a specification sheet regarding manufacturing technologies
3. **Structured Analysis** and comparison of specifications and AM potentials and possibilities and **potential analysis/prioritization** of AM technologies and materials and components of microsatellites
4. **Development** of a AM design for prioritized nano-satellites component
5. **Prototyping** of the new nano-satellite components with a AM design

The project work should be done by one student team each from Bayreuth and Würzburg with interdisciplinary competences. A strong cooperation within the teams is highly appreciated.

We look forward to working with you in this exciting field!

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