

FUTURE SPACE TRANSPORTATION FLPP AUTUMN SESSION 2026



AWARDEE | **FIRST! SIMULATION AND INTELLIGENCE**

COMPANY INFORMATION



Company: CFS Engineering SA

Location: Switzerland

Founded: 1998

Mission: Since 1998, CFS Engineering has been developing and applying CFD solutions for the aerospace sector, with a strong focus on space applications. Through decades of experience in European and ESA projects, we support engineers in the design, development and optimisation of space vehicles. Our work is based on our in-house CFD code, continuously developed and validated over the years and used by leading European aerospace companies.

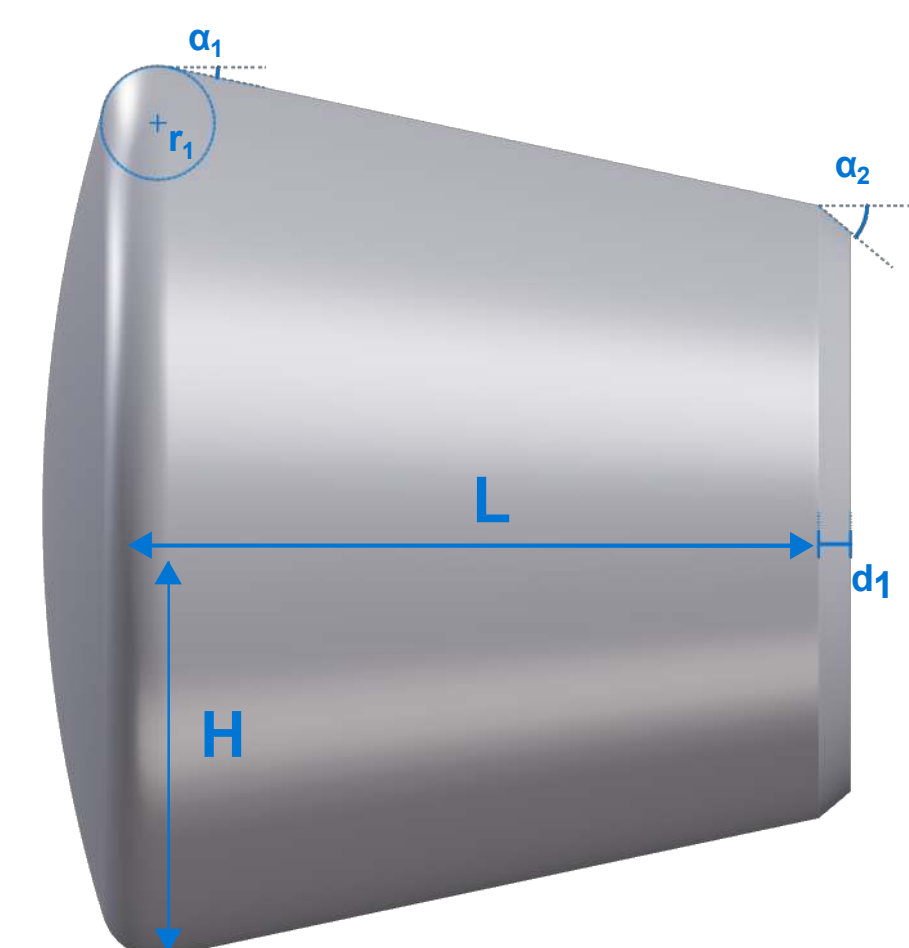


ACTIVITY

Project name: ATLAS, AI-enabled Tool for Launch and Space vehicles design

Objective: Accelerate the design process of re-entry capsules by combining the capabilities of a well-validated CFD code (NSMB), wind tunnel testing and AI, enabling faster and more reliable thermoaerodynamic design and optimisation.

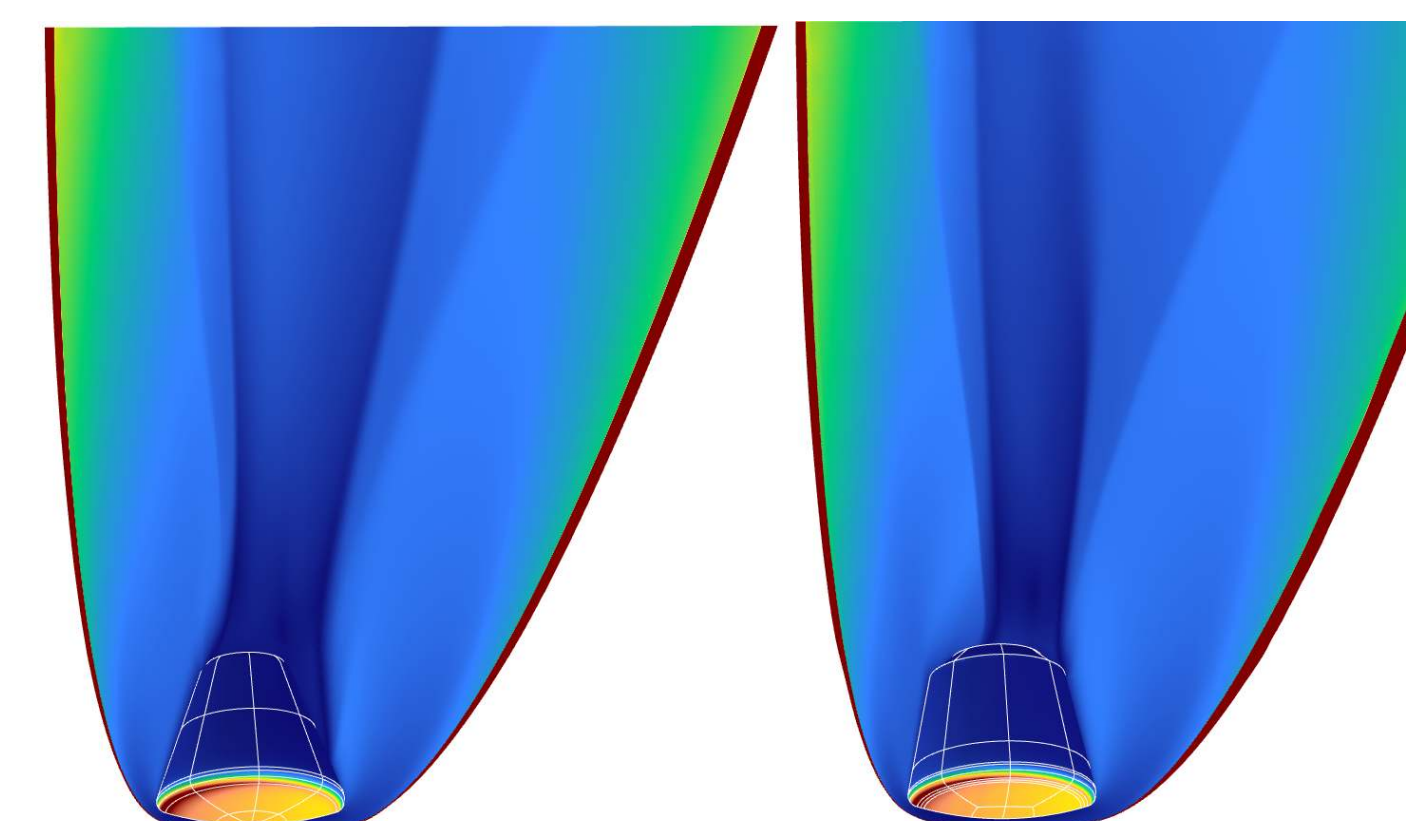
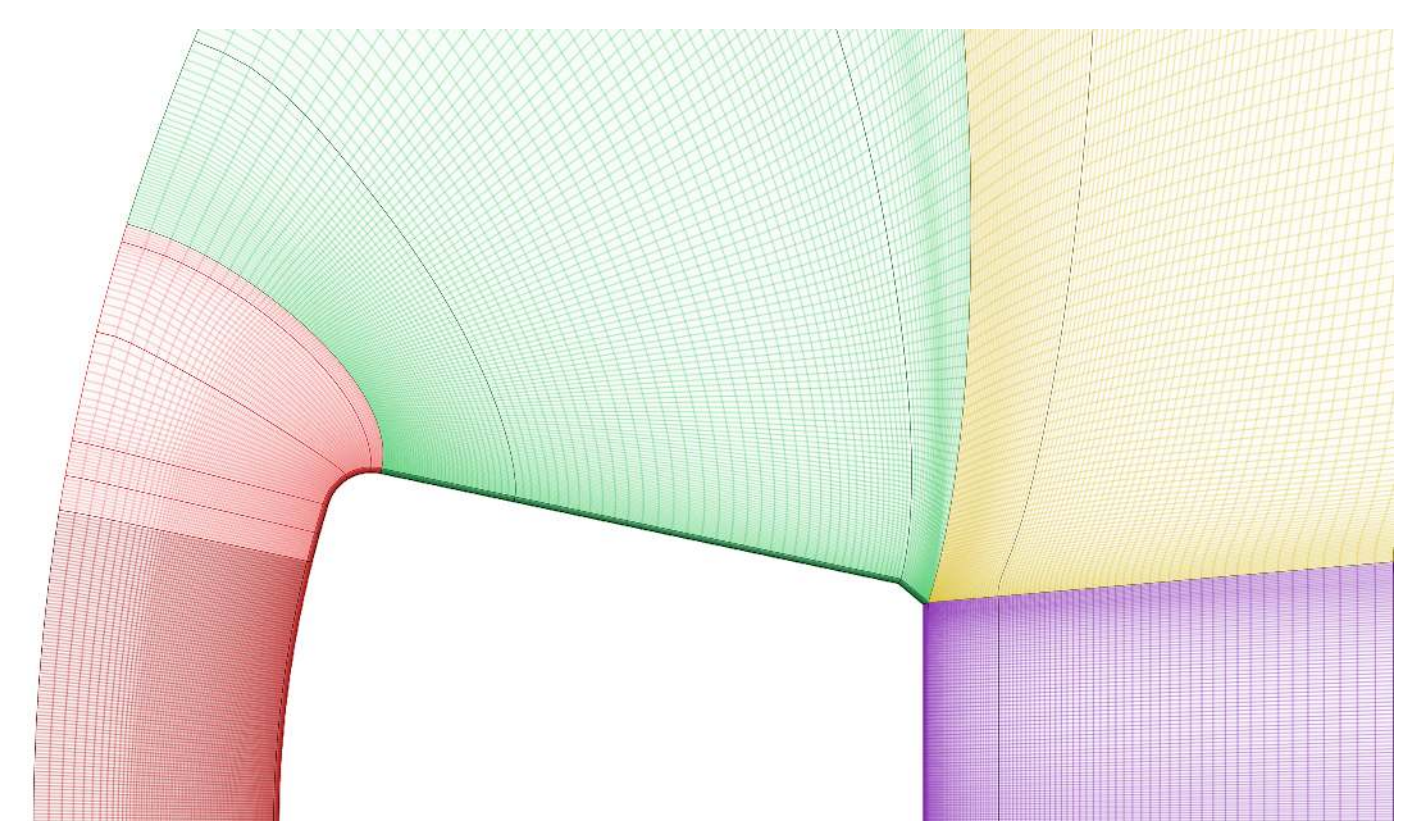
Applications: The methodology is applicable to a wide range of space vehicles, from launchers to re-entry vehicles and spaceriders. The required database size depends on the complexity and design space of each application. Once trained, the AI model enables rapid estimation of aerodynamic coefficients and thermal loads, allowing designers to quickly explore and compare different vehicle configurations.



TECHNOLOGY AND INNOVATION

Key Features: An integrated workflow combining design, simulation, AI and sustainability.

- Geometry parametrisation: Definition of the vehicle design space from an initial reference geometry.
- Automatic multiblock mesh generation: Rapid pre-processing of parametrised geometries for CFD simulations.
- Complementary expertise: Capsule design (Orbital Paradigm), high-fidelity CFD (CFS Engineering) and AI model development (IngeniAI).
- Environmental sustainability: Assessment of the technology's environmental impact alongside its technical performance, supported by EcoDeltaV.



Contact: Giacomo Benedetti

<https://www.cfse.ch/>

giacomo.benedetti@cfse.ch

<https://ch.linkedin.com/company/cfs-engineering-sa>