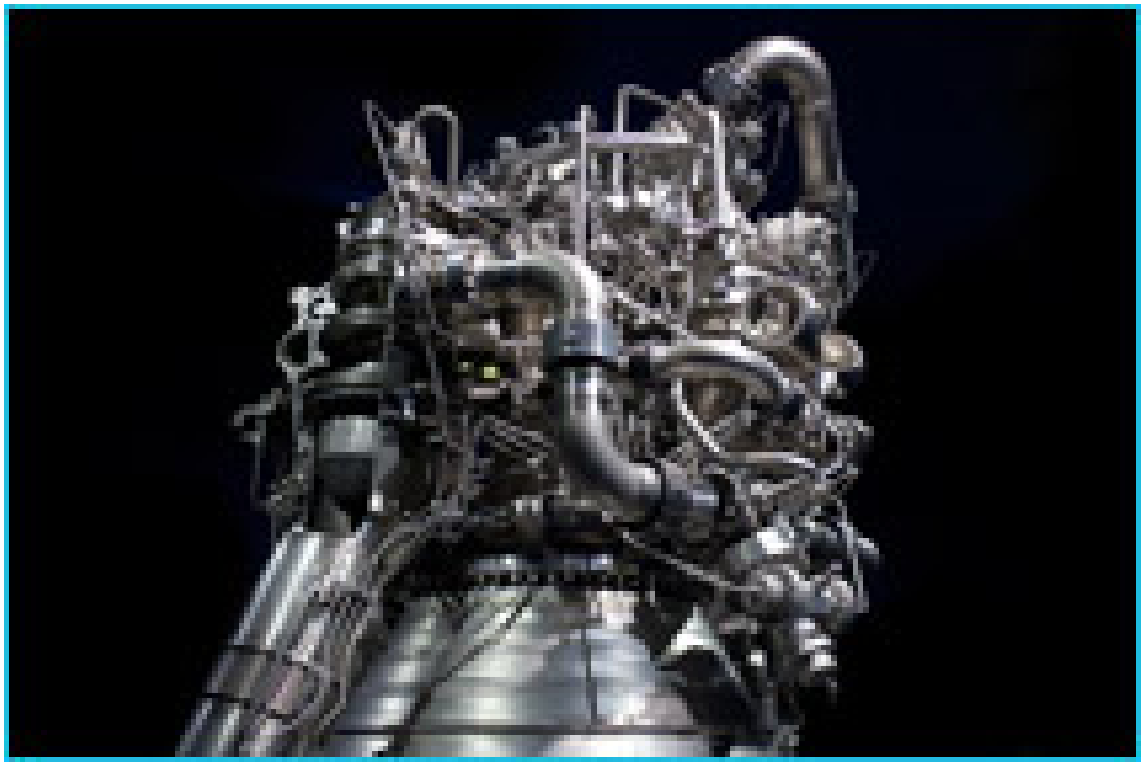

The first step of the study consists in choosing the vehicle you will work on: either vehicle 1 for local suborbital flights
,
vehicle 2 for high-speed long-range suborbital transportation
or
vehicle 3 servicing low Earth orbit
.

Note than for type 1 vehicle, the study can deal with the "generic" sub-orbital vehicle described hereafter, focusing on the “propulsion” aspects, or it can be dealing with a sub-orbital vehicle studied previously by other student team. The study will be done by taking care of the minimization of environmental impacts from the solutions proposed, as well as to the maintainability induced by the need for “reusability” of the rocket propulsion system. It is welcome to refer to, and pursue, work done by previous teams.

You will address one of the following topics:

1.

Propulsion system:

- In case of use of an existing engine and propulsion system: analysis of suitability with respect of safety needs, to the environmental impacts, and to the whole commercial life time, and of the ability for high reusability and affordable economic performance. Maintenance aspects shall be analysed. For type 2 vehicle, alternatives to the use of rocket engines only will be analysed.
- **Or** Adaptation of a rocket engine which is the « image » of an existing one (via the change of propellant, or change of operating condition / of the thrust, …) and existing propulsion system, to be adapted to the needs of a sub-orbital vehicle transporting passengers. The safety needs, the operation cost, the environmental impact, the maintenance related to reusability, will be analysed,
- **Or** Study and pre-dimension, and issue the identified high level requirement, for a propulsion system specifically defined by the student team,

Or