



This work package applies to type 2 vehicle (for high-speed long-range transportation) and type 3 vehicle (servicing low Earth orbit).

Societal acceptability of suborbital or orbital flights will require to comply with environmental constraints which will be defined for this activity. The idea is to propose a vehicle with the lowest possible carbon and pollution footprint during its entire life cycle (from design to decommissioning).

After choosing the vehicle you will work on (either vehicle 2 for high-speed long-range suborbital transportation or vehicle 3 servicing LEO), you will define:

- For design phase, a low carbon vehicle (sustainable material, minimisation of impacts on environment throughout the entire life cycle, non-polluting propulsion, ..). Your choices will be detailed and if possible promoted,
- Environment to put in place to make such a project, including new vocational qualifications, new production chains for materials, components, fuels, ...). For example, you

will study necessary infrastructures to supply liquid oxygen and hydrogen to vehicles. You will detail their arrangement and propose the corresponding ecosystem (starting from production of propellants) near the airport, so that operating hydrogen suborbital vehicles will be profitable and as clean as possible (to be consistent with zero emission objectives).

In addition, for type 2 vehicle, you will define virtuous operations (adapted to high environmental standards, low carbon operating cycle, etc.) inspired by current studies related to classical air transport such as optimisation of trajectories in order to minimize fuel consumption.



General characteristics of reference vehicles:

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