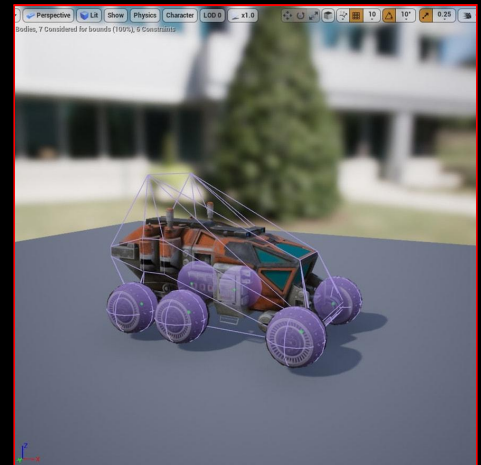




# Virtual Reality Project

This project aims at developing 3D objects that will be used in a virtual reality (VR) Moon-like environment.

<b>Laboratory:</b>	SKIL, IIG
<b>Number of students:</b>	1
<b>Section:</b>	SC, IN
<b>Status:</b>	Available (Spring 2022)



## Description of the project

Asclepios aims at organizing an analogue space mission. Therefore, by design, it will take place on earth, where a lot of parameters are different than on other celestial bodies, making it less realistic. This can be an issue for example when the goal is to simulate an EVA and analyze how astronauts would react (e.g. to operate/open the airlock, or to repair impaired critical infrastructures such as solar panels). The lack of immersion resulting from the realisation of a space mission on earth reduces the advantages of such a simulation. Therefore, this project will be the first step in a larger effort to enhance the "immersive" aspect of Asclepios missions, i.e. creating a virtual environment in which analogue astronauts will be able to test protocols and evolve as if they were in a real mission. In addition to this virtual environment, the student will be asked to create 3D objects corresponding to the ones in the virtual environment to increase the realism of the mission.

## Description of the student's work and mission

The student's mission will be four-fold::

- Using the Unreal engine 3D or Unity to model different objects (e.g. a pump, an airlock valve);
- Building these objects in real life using the Skil's infrastructures;
- Creating events involving those objects in VR;
- Superposing 3D objects in VR with corresponding real objects.

In order to conduct this project, the student will need to have strong coding skills (C, C-sharp), be curious & autonomous, and be able to work in a team.

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