

# Project proposal

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Title: System Engineering: Manufacturing, Integration, V&V plan, Testing  
 Supervisor: David Rodriguez - eSpace  
 Timeframe: Spring 2021

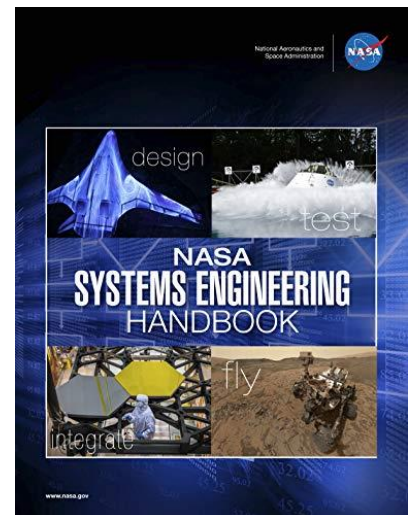
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## Project description

EPFL Xplore is an interdisciplinary project which aim is to build a Rover for the European Rover Challenge. The design phase coming to an end, it is important to look into the next steps: the manufacturing, the integration and the testing for the sub-systems and the whole rover.

## Problematic

The goal of this project is to perform the job of a System Engineer (SE) on a space mission. This semester project starts with the Critical Design Review of the EPFL Xplore project, which shows the end of the design phase. It is important then to ensure that all the feedback from this review is discussed within the subsystems and that the important decisions are taken with the SE in order to start the manufacturing phase. In parallel with coordinating manufacturing, the SE will develop a Verification & Validation plan to prepare the Testing phase. This plan will be based on the System Requirements already written and will include an advanced Stakeholders Analysis as well as a Risk Analysis on the various planned tests. This V&V plan will allow to perform well-detailed performance and functional tests. The SE will conclude on the performed tests and will adjust and define new tests consequently. Depending on the progress of the EPFL Xplore project, this semester project can also include the supervision of the Integration phase.



Regarding the competition, the SE will develop detailed Concept of Operations (ConOps), based on already existing high level ConOps, to make sure that each module of the rover is able to meet the planned task. The project will end with an analysis of the life-cycle of the rover and will prepare the way for the next missions.

This project requires great communication with the Project Manager, the other System Engineer and the Team Leaders of each subsystems as well as decision taking and tracking.



## Reference Documents

*Nasa System Engineering Handbook*

EPFL Xplore System Requirements

EPFL Xplore High Level ConOps

EPFL Xplore High Level Stakeholders Analysis

## Contact

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