PDR Review Team Ares, 16/01/2020

Hi Team Ares,

I've been reading your PDR report with great interest. It appears like you are at the very beginning of your conceptual work. I recommend advancing your design quickly, so you can identify and tackle the missing bits in time.

General:

- Submit such documents as a PDF rather than as editable word. This makes sure nothing is edited by mistake, and the layout is not dependent on the readers software.
- The document is not very well structured. Something along the structure proposed in the rules and requirements document from UKSEDS would make much more sense.

Team structure:

- Do you really need a secretary? Surely Erika can contribute more than just typing stuff.

Schedule:

- The first part of this section should go under a section "testing" or similar. This is not part of the schedule
- Good practise is to create a Gantt chart for scheduling. Break your project down into small pieces and think about how they are linked together.
- Phased approach: You shouldn't wait with working on electronics and sample retrieval until March. The sooner you can start, and more parallel with other topics, the better you can react to unforeseen issues.

Budget:

- How much cost do you foresee for which parts of the rover and why?
- How is your phased schedule dependent on the budget?

Mechanical Design:

- In this section you should outline the design you have in mind, rather than describing the software you are planning to use.
- This section should then be placed after requirements, trade-offs etc.

Requirements:

- State where in the document you addressed each of the requirements, and what solution you propose to meet it.

Risks:

- Organise your risks by assigning a score to each risk: score = probability x severity
- This allows you to identify the highest risks
- Include technical risks that come out of your chosen design, e.g. certain things not working or difficult to develop

Trade-offs:

- What is the trade off and result from the table? Which parts are you buying, which ones are you making yourself?

Design Baseline:

- Are you sure that you need a suspension?
- How do you know that the rover is above the sample?
- How did you conclude that three wheels on each side are needed to make the caterpillar track?

Several important topics are not addressed:

- How do you plan to communicate with the rover?
- How do you plan to operate your rover? What are the different steps, like driving -> locating the sample -> picking the sample?
- What kind of electronics modules are needed?
- What does your gripper look like? How will you activate it?