# Delft University of Technology
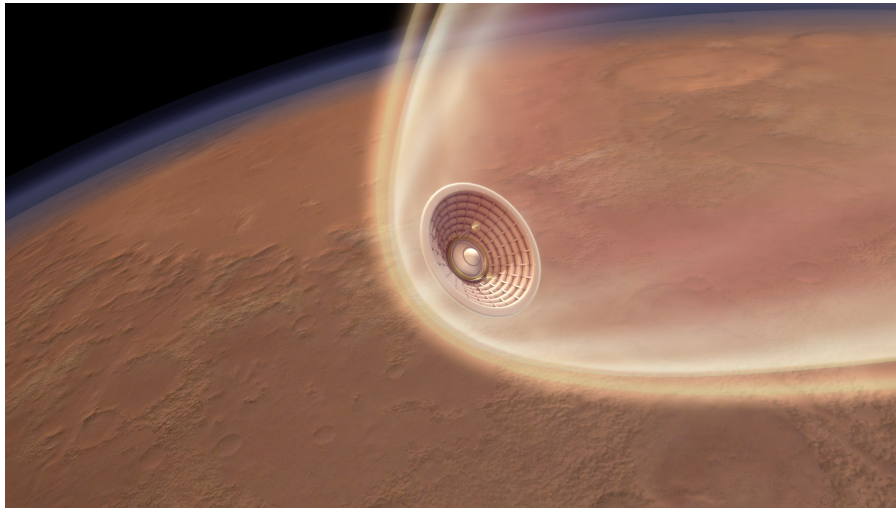## Design Synthesis Exercise

## Design of a Controllable Inflatable Aeroshell
# Project plan

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# Summary

-Requirements -Description of the entire system (the Global Picture)

# Contents

# 1 Organisational Breakdown Structure

## 1.1 Chairman

The size of the DSE project group, with 9 people, is too large to be self-organizing: if no organizational structure is apparent, people will not have a clear view of the required work, leading to inefficient time-management. The role of the chairman is to prepare team meetings and guide them such that the meeting itself is performed in an efficient manner, but also the goal of the meeting is achieved: at the end of the meeting, all team members should have a clear overview of the current status of the project, as well as their present responsibilities. It is the task of the chairman to guide meetings such that this information is conveyed between the team members including the members responsible for planning, documentation, and the system engineer.

## 1.2 Secretary

## 1.3 Documentation & Archiving

## 1.4 Planner

**Planner**   The planner provides an overview for all the work packages as progressing through to time in the form of a Gantt chart. It is the function of the planner to frequently update and further detail this chart throughout the progress of the project. Furthermore more the planner is required to communicate all deadlines to the group members. Interactions between different tasks are provided and planning is made accordingly to allow all tasks to be finished before the set deadlines or milestones. Progression is recorded throughout the process to ascertain that all deadlines are met.

## 1.5 Systems engineer

## 1.6 Risk Engineer

## 1.7 Quality assurance

**Editor**   Primary function is assuring consistent and high quality of all written communication, by means of proof-reading and correcting of pieces submitted by all group members. In addition, the lay-out and structure of reports and presentations is scrutinized and egalized. Strong interaction takes place with all group members with direct contributions to the written work, while open communication with documentation manager is maintained to resolve issues with the formatting of reports. In case of repeated errors by group members, the editor makes an effort to enter conversation with the repeaters in order to identify the origin of the problem and if need be to take pre-emptive action against future occurrences.

**Verification** Verification shall occur at multiple stages of the design. For example, in the initial stages it can be used to verify the requirements. At the end, the final product should be verified to check whether the developed product meets the requirements. Another definition given by NASA is that verification should proof that the product complies with design solution specifications and descriptive documents. Thus the responsibility is to have the product meet the specified requirements.

**Validation**

# 2 Work Breakdown Structure

# 3 Project planning

# 4 Project logic diagram

# 5    Conclusion

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# References

# List of Symbols

| Symbol | Description | Dimension |
|--------|-------------|-----------|
| $a$ | Speed of sound | $m/s$ |
| $A$ | Aspect ratio | $-$ |
| $\alpha$ | Angle of attack | $^{\circ}$ |