Delft University of Technology
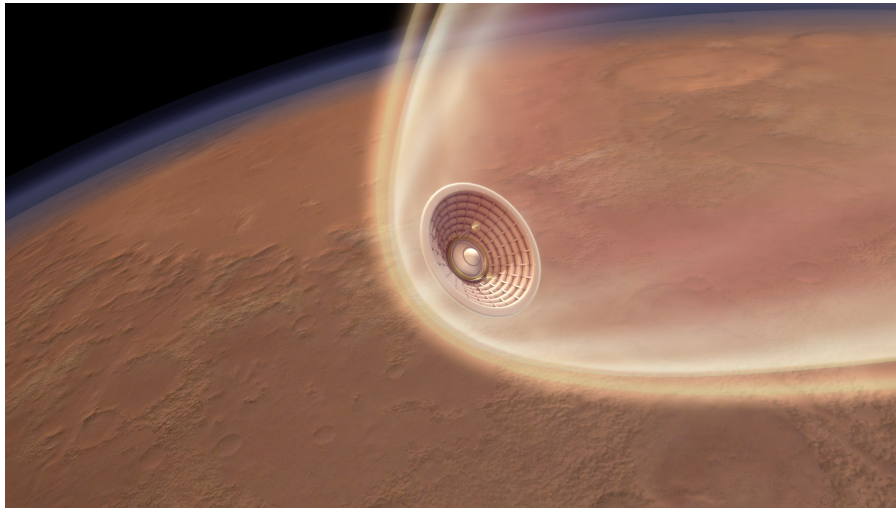## Design Synthesis Exercise

Design of a Controllable Inflatable Aeroshell
Project plan

S. Balasooriyan
B.R. van Dongen
D.D. Hage
T. Keijzer
G. van Koppenhagen
L.C.J.M. Mathijssen
J.F. Meulenbeld
A.P. van Oostrum
S.P.C. van Schie

April 20, 2015

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 manager

One of the tasks of the documentation manager is to maintain a structure in the file system used on the computer (i.e. keeping Dropbox and Github organized). The documentation manager is also the person to set up the initial files (like the LaTeX templates) and folder structures. The documentation manager should provide basic rules for the layout of the documents, communication with the editor is needed when the layout does not conform these rules. It is needed that this structure is maintained throughout the project and group members should make an effort to keep it this way, if not it is the documentation manager that will point out these problems towards the group and come with possible solutions.

1.4 Planner

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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List of Symbols

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