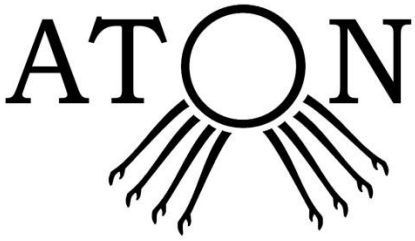

Process Report

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Process report

Introduction

This report is to asses how this project is moving on and it gives us a good overview of the progress that has been made during the project. It also shows the coöperation and the skills within the team. Another part of the report is to have an overview of the problems the team has encountered and how those problems have been solved.

Story behind the design

At first, we brainstormed about how to build our frame for the SSV. Our first idea was to build a tubeframe out of small tubes of aluminium. Our teamleader's father works in a metal workshop and his welder was able to weld the small tubes of alluminium together. After some calculations about the weight, we concluded a plexiglass frame would be more efficient and versitile.

In the beginning we considered building a mechanism to minimize energy loss if a collision with the walls were to occur. But any system we could think of would result in a proper amount of energy loss. That's why we opted for a steering mechanism to prevent any collision.

From the beginning we opted for three wheels of which only one will be driven. This wheel will be in the back. One driven wheel seemed like the best option because there will be less moving parts. This means less energy will be lost.

For the wheels, we opted for plexiglass wheels. These are lightweight and easy to manufacture. A problem with plexiglass wheels could be that they don't have enough grip. A solution for this problem could be to give the driving wheel a rubber surface. But the necessitiy of this will be assessed by real world tests.

Planning

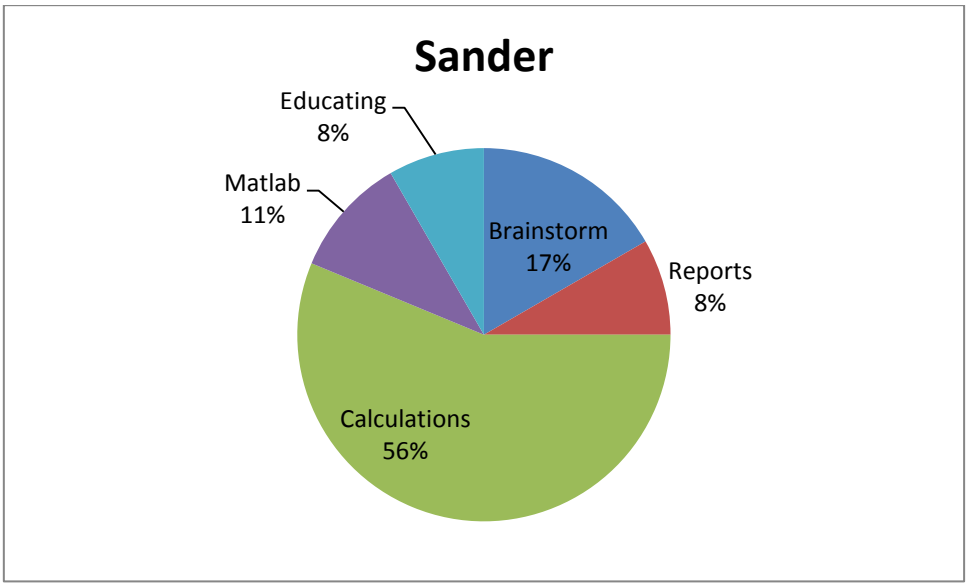
When we compare the Gantt chart we have made in the beginning of the project with our actual progress, we can see that not all deadline estimates were very acurate. Most of the missed deadlines are caused by missing information and an inadequate solar panel. Due to this inadequate solar panel, we were unable to start production of the frame. If we get a new solar panel, its dimensions might change which results in other dimensions for our frame.

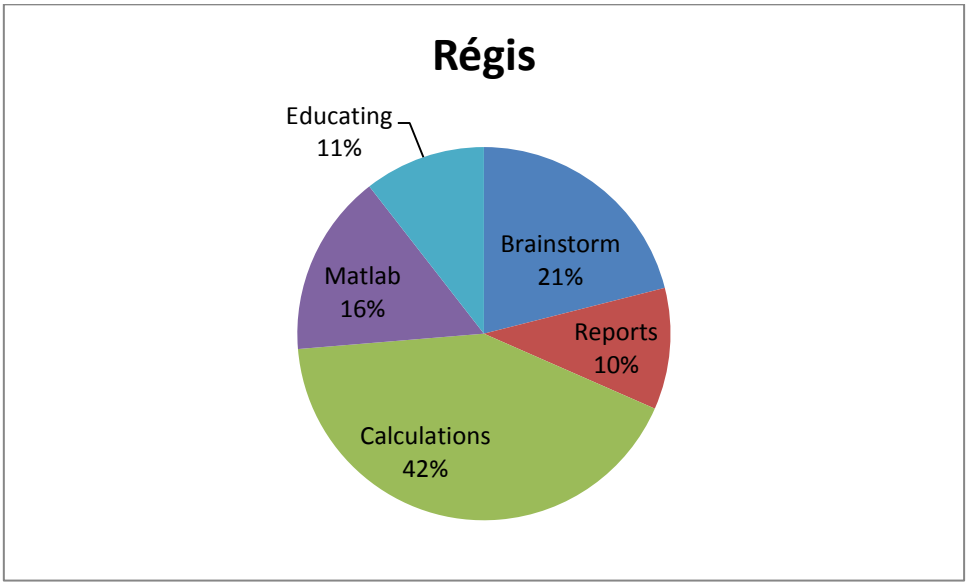
Some of our original subtasks we implemented in our Gantt chart turned out to be unnecessary. This is due to other solutions we have found for that particular problem.

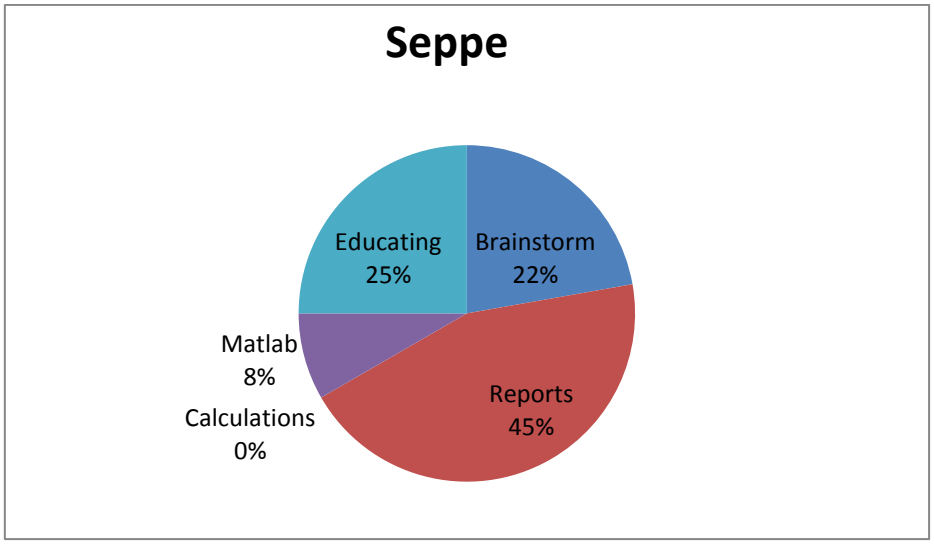
The estimations for the working time or each subtask are pretty acurate.

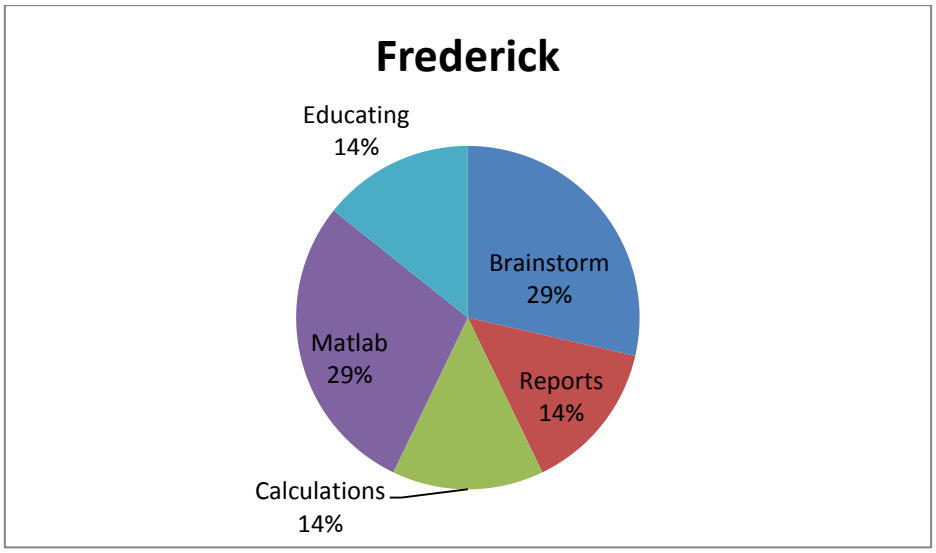
Cooperation

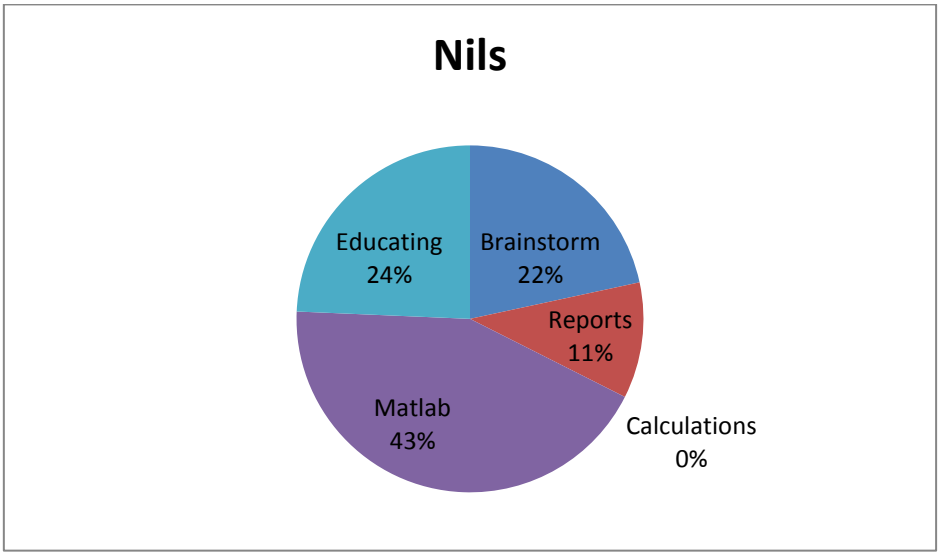
In the following pie diagrams we show a pie chart for each team member, showing how much time went to different subtasks.











By analysing these pie charts, we can conclude that most team members have a specific focus on one of the tasks of the project. This division of workload makes it possible to work efficiently as a team.

Skills

The skills that were sufficiently present within the team from the beginning of the project were planning and cooperation skills. Another skill that was present was 3D-modelling, we all learned this skill from last year's project EE2. Finally experimental working method and fault analysis were also skills that the team mastered from our time as engeneering students.

Working with Matlab and Simulink was new to us and required a learning approach. Aside of this we had to learn how to implement load forces on a 3D-model to simulate wheter the material can cope with the forces.

Conclusion

We have hit some bumps in the road, but most of the time we were able to find solutions as a team. As long as we can keep this team spirit, our approach doesn't need a lot of adjustments and we will get there in the end.

Literature

Work Breakdown Structure

Plan of Aproach

Cooperation Contract

Gantt Chart