# Plan of Approach: Solar International

## 1. Client
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## 2. Project Team

- *Cedric Van Hove: Team Leader*
- *Sven Vermeulen*
- *Xavier Ziemba*
- *Jean Kockerols*
- *Florian Vanlessen*
- *Vantha Chhoeum*
- *Miengma Phommainh*
- *Suihong Xu*

## 3.Plan
Following our course Engineering Experience 4 we have been assigned with the task to, roughly, "build" a scale model solar vehicle in a team of 8 members. This project will be executed following Group T's background visions concerning Engineering, Enterprising and Educating. The idea is to present a vehicle ready to compete on a 14m road against other vehicles, the fastest vehicle wins. This assignment has to be completed within a time range of approximately 10 weeks, during these 10 weeks a system of strict deadlines has to be followed, where we'll have to deliver reports and analyses about the solar car. We have been instructed about this task in week 1, in order to start building as soon as possible. At the end of this project we will be quoted for our work as a team, not only regarding the vehicle itself, but also the reports, tasks and simulations we will have to hand in during this project.

## 4. Goals
- The main goal is of course creating a Small Solar Vehicle (SSV) able to drive at least 14 meters, using only solar energy. We can use a basic set of materials to build it, if we want to use additional materials we need to buy it ourselves. It should preferably be a fast vehicle since it has to compete with other teams creations. Next to this main assignment there are other cases we have to keep in mind:
    - ⇨ Case Simulink: Using simulation software to optimize our vehicle, for example what will theoretically happen when the vehicle rolls freely down a ramp.
    - ⇨ SSV part 2: Based on the results obtained in the simulink case, we have to make a critical analysis of the vehicle stresses, a technical drawing and a Sankey diagram of Umicar.
    - ⇨ Analyse a market position for a miniature version of the Umicar.
    - ⇨ Control our budget, we can spend max 200 euros on additional construction materials.
    - ⇨ Create a wiki, and update it every week.

## 5.Limitations

Within a team all kind of limitations may occur, but most of them can be avoided by working efficiently and setting a firm organization. Right below some problems that may happen are enumerated:

1. Someone leaves the team due to certain circumstances. If this occurs, first of all the team structure will be disrupted, especially if this member happened to work on an important case. This may result in the loss of critical information for the team and we might have to start this task from scratch again. That is why we will try to divide every task to at least 2 persons, and in case someone leaves, the work in progress won't be completely lost and we are able to replace the teammember. Another way to avoid this is to keep structure within our team, every member should be clearly aware of what is going on within the team.
2. Clashes or conflicts within the team, these can happen for any kind of reason. In this case we will apply to the team leader who will find a solution for this problem.
3. A technical problem with the engine or some part of the vehicle gets broken. In this case, the reason for the problem may be negligence or bad calculations. Therefore we will always control our calculations several times before putting them into practice. Working with engine parts requires carefulness; we wouldn't want to have a technical defect right before starting the race.
4. Misunderstandings within the team. We use English to communicate in our team, and since for most of the members this isn't a native language, some may be inexperienced with the use of it and this may result in misunderstandings and ineffectiveness in the team. Communication is the most important aspect when working in team, so we will have to make sure we fully understand each other when sending mails or having conferences.

## 5. Suppositions

It's hard to predict what is going to happen in the next weeks or which problem we will have to deal with. But as from now on, we expect to hold on all the deadlines and hand in all our cases. We haven't started building yet, but we already divided several tasks within our team to optimize further progress. We expect to achieve a decent SSV by week 10, although we don't know yet what shape, size, speed,… the vehicle will have. We also know every member of our team has different course schedules so it is going to be hard to find a free spot else than Tuesday afternoon. So if more time is needed, we'll have to meet during the weekend or in the evening when we all finished our courses. During the first session we exchanged our interests, making it easier to divide tasks in the team, some may like to program with Matlab, others enjoy writing reports, and taking this in mind we can work more efficient as every member does what he likes to do.