

## **SDP project plan – Group 4 - Feedback**

### **Concepts and Goals**

The basic concept and motivation is clear, although the background might suggest that a more interactive system (e.g. a shopping trolley or luggage that powers itself to climb stairs while being guided by a human holding the handle) could be an alternative to a fully autonomous robot that carries shopping or luggage (and could then scale beyond domestic use). It is good that you have researched both the potential demand, the existing alternatives for this problem, and existing designs for stairclimbing robots. The goal breakdown for each demo is reasonably clear but seems to leave the really key capability – actually showing that the robot can lift itself up a stair – rather late in the process. It may be better to solve this first for a very constrained situation (robot is placed in a specific location on standardised set of stairs, and executes a climbing routine) before developing the sensing, or even the basic (non-stair) driving solutions, as this will strongly determine the key layout of the physical structure. Although the test set up is described, it is not clear how well this represents the real task: real stairs have a very constrained set of heights and almost never irregular heights (see building regulations!); but do, for example, have a wide variety of surface coverings.

### **Time Planning**

The Gantt chart is not very convincing as the 'task' descriptions read more like milestones and the time periods have been simply mapped backward from demo deadlines. It should provide a more complete breakdown of hardware tasks, robot software tasks and the additional software, integration and testing tasks that need to be completed and their relation to the team organisation. It also does not include time for demo preparation and report writing. Similarly the basis for the time estimates in the chart or in the pie-chart breakdown is not explained. 25% of time preparing reports + 9.4% preparing presentations seems excessive.

### **Identification of Dependencies and Risks**

The technical risks listed appear too fundamental – i.e. building a robot that is strong, stable and efficient enough to perform its basic task should be part of your basic plan, not 'risks' that might require a change of plan. Similarly the human risks seem too general, and some of the solutions not appropriate – adding an extra communication channel is unlikely to solve problems with poor communication.

### **Organisational Structure**

It is helpful to provide the summary of skills and how that maps to some of the choices in the project specification; and to outline the specific responsibilities and duties of each team member. However this information could have been explicitly linked, i.e., explain why the individual's skills make them appropriate for their role. The communication and support is clear and it is good to have specified a Git workflow. You could explain why you have chosen Click-Up vs. an alternative task management system (simplicity? familiarity? integration with other systems?)

### **Quality of the Report**

The mockups are potentially helpful in illustrating the initial ideas, but if fig 2 is directly copied from ref [4] you should say so in the caption, and not describe it as a 'mock-up'. The sectioning here seems rather random, but as a whole the report is clearly organised and well written.