

Group – 7 Project 3

TEAM ORGANIZATION AND TASK ALLOCATION PROPOSAL

The group will be split into two teams, the hardware team and the software team. The hardware team will be primarily concerned with the mechanics of the robot, while the software team will be primarily concerned with the software needed for the robot. There will be overlap between the groups when necessary but the two groups will proceed forward on parallel paths. The given subdivision will reduce the bandwidth needed for communication between all four group members and hopefully reduce the scheduling complexity needed for team meetings.

Each team will consist of two members. The four members of the total group will rotate through the two sub-groups in a round robin fashion. For each project there will be a senior member and a junior member. For each project a new member will enter a sub-group but one of the members will remain in the group. The person who remains in the group is the senior member. The new member in the group becomes the junior member. In this way there will be overlap between projects and the senior member can help the junior member get up to speed. For the first project the senior member will be chosen by each sub-group.

The hardware team will be responsible for the design, building, testing and documentation for the robot platform. The software team will be responsible for the design, code, testing and documentation for the robot platform. The exact division of labor will be decided for each project by each team. In this way the two different teams can independently decide how to optimally split up their task.

The senior group member of each team is responsible for attending all group meetings. In this way all four members of the group do not have to find time in their schedule for a meeting. The junior member is encouraged to attend all meetings if possible.

If one team should get done with their assigned task, they will assist the other team in completing their task. The basic idea is that the project load will try to be balanced at all times.

The four group members will each take their turn merging the text from the two groups needed for the final report. This team member will be responsible for setting the deadline for when they need the text from the other members, and adding any additional text needed to complete the report.

Communication and Coordination between Software team and Hardware team:

The whole project should be well scheduled on time while the hardware and the software tasks are being carried out on parallel path. It is important for two sub-groups to have a meeting to see if the sub-task of the project is getting on the same speed and also promote some questions on their works to discuss. So, probably after class all members can meet together for a few minutes and also can have a longer meeting for discussing and learning from each other during one week.

Software Division of Labor:

Robert will be the senior member of the software team. Robert was on the hardware team the first project and was considered the senior member of the team. On the second project Robert was the junior member of the software team and wrote a lot of the state machine software. Robert feels that he

can provide a insight and completion from the lessons learned from when he programmed on the 2nd project.

John will be the junior member of the software team. He was the senior software on the first project and junior hardware on the second. However, since the restructuring, it was determined that Vitaly and Ramakrishna had both done hardware and were eager to move to the hardware team. This explains the jump from junior hardware to junior software.

Hardware Division of Labor:

In the last two robotics projects that we had participated we were in charge of software design of the projects. For the project 3, two of us (Rama Krishna Pantangi and Vitaliy Marin) will work on the hard design. This is mainly attributed to the fact that the main goal of the course is to become proficient in potentially in all areas of the robot design. Likewise, to achieve such balance the above two people will gain hardware experience. Also, we gained enough basic knowledge of the hardware design part from our first two projects, which we think we can use in this project. At the same time if the time becomes a major factor in order to complete the project successfully the hardware team will put their efforts into software design.

Rama Krishna has worked as a programmer in the last two projects and would like to finish this semester by participating in the hardware team to design hardware for the robot. He believes that he will benefit by designing and testing the design of the robot. He has some hardware experience and would like to work with a more experienced person. So, he will act as a junior member of the hardware team.

Vitaliy has an extensive experience in hardware. He has created numerous mechanical, hardware and electrical related projects. That makes him suitable to act as the senior member of the hardware team. Since Vitaliy has been involved in the software part in the last two projects he would like to do Hardware design for this project. He is very intrigued to connect the Handy Board and RCX 1.5 boards together via IR communication link. He thinks it might prove to be usefully for maintaining two-robot structure. At the same time he is also responsible for creating the hardware documentation.

Vitaliy will also give the project's presentation. He has presented many presentations in the past such as during his summer REU 2002, and fall semester 2002. At the same time if time permits each member of the team will talk about his or her role in the group.

Summary of Tasks Assigned:

Software:

- Design: John
- Coding: Robert
- Testing: Robert and John
- Documenation: John

Hardware:

- Design: Vitaliy
- Building: Rama Krishma
- Testing: Vitaliy
- Documenation: Vitaliy

Final Presentation: Vitaliy

Final Report: Robert and John