Project Bi- Weekly Progress
Date: 03/27/2014

Project Title: Robo-Ops
Students Names: Boris Barreto, Jason Brown, Justin Houdeshell, Linus Nandati, Tsung Lun Yang
Mentors/ Coordinator/ Sponsor: **Dr. Jonathan Clark**

1. Project Title: Project 11 – Robo-Ops

2. Project Objectives/tasks Breakdown:

Overall Objective is to have a robot capable of winning the 2014 Rasc-al Robo-Ops Competition

Tasks
Develop robotic arm of scale for future Robo-Ops Team
Create video demonstrating rover capablities
Develop controls code which could be implemented with future designs

3. What was accomplished the last two weeks on individual tasks- representative supporting data/ documents

The robotic arm is completely assembled and all joints behave as expected. The model arm is constructed and can read the position of each joint to a microcontroller. We are able to send the position information across a USB line using serial communication.

We have made progress in programming the robotic arm. The motor controllers we purchased are not functioning as expected or advertised. The Robo-Claw motor controller has a built in command to execute PID position control of a motor, doing all processing on the motor controller. However, this did not function and had no output. We contacted the manufacturer and we are working with them to figure out the issue. Since the command has not yet worked, a backup plan was implemented to create our own PID control on our microprocessor. This is processor intensive and has a slower refresh rate than what the motor controller PID, but it provides functionality to the arm so that we can continue with the project.

Communications has been acquired and we are finalizing the set up. We have requested a static IP address for our USB modem, but this requires the "Single point of Contact" defined for the account request the change. We have forwarded our request to the FSU ITS department and we are waiting for the response.

4. Summary of problems encountered and actions taken (and by whom

5. Attached Gantt chart modifications and analysis if project is behind schedule and summarize actions planned to overcome the problems)

6. Work planned for the next period and the person(s) responsible:

Tasks
- Complete Robotic Manipulator Programming

- Finalize GUI to include xpadder and model arm input and ensure communication functionality

- Complete final reports and presentations

- Participate in Digitech Open House

Boris – Finalize GUI
Jason – Work on Programming Robotic Arm
Justin – Work on reports and presentations
Linus – Assist with GUI and finalize communications
Tsung Lun – Work on reports and presentations

7. Open comments/suggestions (Please feel free to include your private comments):

Coordinator/ Instructor assessment report and corrective action

ID	ⓘ	Task Name	Start	Finish
1		**Fundrasing**	Fri 9/20/13	Fri 5/2/14
6		**Locomotion Controls**	Mon 9/23/13	Fri 2/28/14
7	✓	Turn While Walking	Mon 9/23/13	Fri 2/28/14
8	▥	Turning while climbing	Mon 9/23/13	Fri 2/28/14
9	▥	Control with and Xbox	Fri 10/25/13	Fri 2/28/14
10		**Sample Extraction Module**	Mon 9/23/13	Mon 3/24/14
11		**Gripper**	Mon 9/23/13	Mon 3/24/14
12	✓	Brainstorming	Mon 9/23/13	Fri 9/27/13
13	✓📝	Prototyping -- Cardboard Stage	Mon 9/30/13	Fri 10/25/13
14	✓	Selection of Final Design	Mon 10/21/13	Fri 10/25/13
15	✓	Determine Parts Necessary	Mon 10/28/13	Fri 11/22/13
16	✓	Complete CAD Model	Mon 10/28/13	Fri 11/22/13
17	✓	Construction	Mon 11/25/13	Mon 1/20/14
18	▥	Attachment to Arm	Mon 2/24/14	Mon 2/24/14
19	▥	Testing Gripper	Tue 2/25/14	Mon 3/24/14
20		**SEM Mechanism**	Mon 9/23/13	Fri 3/21/14
21	✓	Brainstorming	Mon 9/23/13	Fri 9/27/13
22	✓📝	Prototyping -- Cardboard Stage	Mon 9/30/13	Fri 10/25/13
23	✓	Selection of Final Design	Mon 10/21/13	Fri 10/25/13
24	✓	Determine Parts Necessary	Mon 10/28/13	Fri 11/22/13
25	✓	Complete CAD Model	Mon 10/28/13	Mon 1/20/14
26	▥	Construction	Tue 1/21/14	Fri 2/21/14
27	▥	Testing SEM System	Mon 2/24/14	Fri 3/21/14
28		**Communication**	Mon 9/23/13	Mon 3/17/14
29	✓	Develop Communications Design	Mon 9/23/13	Fri 10/18/13
30	✓	Determine Necessary Components	Mon 10/21/13	Fri 11/8/13
31	▥	Acquire Necessary Components	Wed 1/15/14	Tue 1/28/14
32	▥	Build Communication System	Wed 1/29/14	Mon 2/17/14
33	▥	Test and Debug Communications	Tue 2/18/14	Mon 3/17/14
34		**Complete System Integration --**	Tue 3/25/14	Mon 5/19/14