Extraterrestrial Robot Explorer and Environmental Logger

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PROJECT SCHEDULE

Last updated: October 4, 2016

Week Ending	Phase		Primary Task	Subtasks
07-Oct-16	Development	***A***	Finalize Specification for proof of concept	1. Clarify the contents/scope of this specification. What does *this specific specification* require? (i.e., Audience, purpose, level of detail, technical vs functional) 2. Complete the specification. 3. Submit to group members for final revisions and editing.
		B	Finalize selection of sensors and start technical reports on assigned sensors	*WAITING ON BILL'S DOCUMENT*
		C	Familiarize group with Raspberry Pi development environment	1. Boot up the Raspberry Pi and spend an hour exploring the environment. 2. Write some test code. Something that may be useful to the project eventually would be nice (ex., USB or Wi-Fi device initialization) 3. Give a tour of the OS to the other group members. Explain the example code functionality.
		D	Get encoders working	1. Resurrect required resources from last semester and create a new project for testing the encoder software independently of the project. 2. Write code that counts encoder veins while the wheels are spinning 3. Write code that uses the counted encoder veins to determine speed and position of robot 4. Integrate the independently validated encoder control software with the project code. 5. Test that functionality of the encoders is still correct *and that no other functionality has been impaired by the integration.*

		E	Choose the Supervisory control method	1. Experiment with the console in the Linux environment. Create code to gauge the level of complexity of tracking of keystrokes, including keys held and released, and any associated delays. 2. Create a list of pros/cons for each of the methods available (Joystick, Scripts or Keyboard). 3. Present findings to the group and make a final decision on the control method.
		F	Finish COTS selection matrix	1. Gather power requirements of the Linux box (i.e., must power the camera, etc) 2. Finalize document, including any last requirements (power requirements from above) and associated analysis of possible solutions. 3. Present findings to the group and purchase/secure the selected COTS Linux box.
14-Oct-16	Design	***A***	Get PID control working on the robot platform	
		B	Prepare Raspberry Pi for Wi-Fi connection	
		C	Begin adjusting supervisory Linux program to work with the selected control method (i.e., Joystick…)	
		D	Initialize RS-232 on the Pi and get communication between it and the platform controller working.	
		E	Investigate the need for threading in the supervisory Linux program?	
21-Oct-16	Design	***A***	Establish a reliable communication link between the Supervisory control program and the Raspberry Pi over Wi-Fi.	

		B	Finalize code for the selected control method in the supervisory control program. Implement threading if you have chosen to do so.
		C	Integrate any environmental sensors onto the board, if you have decided to do so for bonus marks.
28-Oct-16	Final Integration and Testing	***A***	Integrate the major system modules: *Supervisor, Linux Box, and Platform Controller* . Establish and confirm reliable communication between all modules.
		B	Write code to incorporate any environmental sensor functionality in both the Supervisor and the Platform, if any are mounted to the board.
04-Nov-16	Final Integration and Testing	***A***	Verify and validate complete system functionality.
		B	Complete any missed or overdue tasks.