

ELEC 4000 Senior Design Status Report – Page 1 of 3

Project Name:	PICASSAU
Team #, Members:	Team 2: Ben Straub, David Toledo, Drew Kerr, Kayla Frost, Peter Gartland
Report Date:	9/25/2013
Project Description:	A robot that paints a picture.
Cycle (1, or 2):	Cycle 1
Cycle Intent:	Construct a robot that can reliably paint a single color image from a supplied vector graphic file.

TASKS

Task #	Task Description (Add rows as needed)	Cycle planned for completion	Planned Total planned hours	Planned hours this cycle	Status (% complete)	Actual hours this cycle	Total hours
1	Team management	2	55	20	27%	5	5
2	Mechanical hardware - construction	1	43	43	85%	22	22
3	Stabilize paintbrush carriage	2	31	0	0%	0	0
4	Electrical hardware	1	25	25	60%	7.5	7.5
5	Embedded software - plotting	1	25	25	70%	17.5	17.5
6	Embedded software - brush control and stability	2	41	0	0%	0	0
7	Computer software - main Python functionality	1	34	34	75%	3	3
8	Computer software - setting up the Raspberry Pi	2	35	3	50%	3	3
9	Computer software - user interface	2	35	0	0%	0	0
10	Computer software - optimization	2	12	0	0%	0	0
11	Image processing - filtering	1	60	60	80%	24	24
12	Image processing - vectorization	2	49	0	0%	0	0
13	Testing and integration	2	35	10	10%	0	0
14	Meetings	2	30	15	27%	20	20
15	Administrative documentation	2	30	15	27%	8	8
		Planned Total	550	250	Actual Total	110	110

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TEAM MEMBER HOURS

Record # of hours each person spent on each task this week, then total by week, cycle, and project.

								task									Total Hours	
Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Week	Cycle	Project
Ben Straub	0	1.5	0	5.5	2	0	0	0	0	0	1.5	0	0	1	1	12.5	37.5	37.5
David Toledo	1	3	0	0	1.5	0	0	0	0	0	1.5	0	0	1	0	8	20.5	20.5
Drew Kerr	0	3.5	0	0	0	0	0	0	0	0	0	0	0	1	0.5	5	13.5	13.5
Kayla Frost	0	0	0	0	1.5	0	0	3	0	0	1.5	0	0	0.5	2.5	9	21.5	21.5
Peter Gartland	0	4.5	0	0	0	0	0	0	0	0	1.5	0	0	1	0	7	17	17
TOTALS	1	12.5	0	5.5	5	0	0	3	0	0	6	0	0	4.5	4	41.5	110	110

Accomplishments since last status report:

- Revised calibration routine
- Recalibrated the IR sensor
- Mounted new motors
- Added colorization to filter
- Built board for new motor drivers
- Installed OS on Raspberry Pi

Obstacles encountered since last status report and actions to deal with same:

- Inclement weather / flooding in Colorado delayed the delivery of our motors and motor hubs.
 - We found other things to work on, and we will catch up this coming week.
- Paintbrush dipping and jitter could not be addressed due to the lack of new motors and the poor quality of the old motors.
 - These issues can be dealt with this coming week.
- One team member got sick and the other left town for interviews.
 - This turned out to not be much of an issue, as we were mostly waiting on the new motors to arrive.

Risks facing the project and actions to deal with same:

- Illness of team members
 - Ensure that there is always someone capable of picking up another member's tasks
- Breaking hardware could put the project behind schedule / overbudget
 - Be careful with the hardware and be ready to order replacements if need be
- Incorrect hardware could put the project behind schedule / overbudget
 - Have multiple members double check the item before it is ordered
- Processor speed on Raspberry Pi may not allow real-time previewing of filtered camera feed

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Objectives for the next week:

- Research and, if necessary, order a power supply
- Finalize paint brush dipping motion
- Construct new spindles
- Revise the code to work with the new motor drivers
- Test new motors

Notes:

It has become clear that we significantly underestimated the amount of time we'd spend on meetings (task 14). A more appropriate estimate might have been 60 hours total. This allows for an average of one 1 hour meeting for all team members each week. Fortunately, it seems that we may have overestimated some of the hours that it will take to complete the other tasks, so it should even out.