Weekly Project Report

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Team 14: Brandon Christler, Michael Hitchcock, Garrett Monast, Yifan Wu

TrailBot

**Progress**

* All sensors responsive.
* Rough IR tracking achieved.
* Screw terminal board installed to make sensor wire connections to Arduino easier.

**Plans**

* Continue to develop code to incorporate all sensors.
* Continue body work, specifically outer shell work.
* Make plans to print IR beacon housing using 3-D printers available at CDME.
* Continue research into proportional-integral-derivative control, and begin implementation.

**Issues**

* Wire-splice joints are fragile, and some connections are unreliable.
* Unreliable connections have caused minor power issues; all issues as of yet have been resolved.
* One of the ultrasonic sensors was damaged during testing, so a replacement has been ordered.

**Schedule**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 | W13 | W14 | W15 | W16 | Progress |
|  | 21-Aug | 27-Aug | 3-Sep | 10-Sep | 17-Sep | 24-Sep | 1-Oct | 8-Oct | 15-Oct | 22-Oct | 29-Oct | 5-Nov | 12-Nov | 19-Nov | 26-Nov | 3-Dec | **Total: 76.1%** |
| Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **91.25%** |
| Chassis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Controller |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Software |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 85% |
| Sensors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 100% |
| Additional Functions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | TBD |
| Build |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **78%** |
| Chassis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 80% |
| Controller |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 70% |
| Sensors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 85% |
| Test |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **85%** |
| Movement |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Following |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75% |
| Obstacle detection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Additional Functions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | TBD |
| Present |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **50%** |
| Records |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50% |
| Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0% |
| **Milestones** |  |  |  |  |  |  |  |  |  |  |  | **X** |  | **X** | **X** |  |  |

**Milestones**

1. Achieve robot mobility functions, including sensors.

**Update:** Bot does each function separately (i.e. motion, tracking, and obstacle detection), but complete integration of all parts is currently underway.

1. Install carrier and peripherals, to complete the body.
2. Verify all functions in comprehensive operational test, including all components.