Weekly Project Report

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TrailBot

**Progress**

* All sensors responsive.
* IR tracking achieved, ground tests verify.
* Autocad design for beacon housing complete, contact with CDME established.
* Improvements made to bot’s sensor housing, including a more permanent mounting for ultrasonic sensors.

**Plans**

* Continue to develop code.
* Continue body work, specifically outer shell work.
* Make plans to print IR beacon housing using 3-D printers available at CDME if price is reasonable; otherwise, will determine better options.
* Continue research into proportional-integral-derivative control, and begin implementation.

**Issues**

* IR tracking, while effective, is not very quickly responsive. Code will be further developed.
* Current IR beacon (38 kHz IR remote) does not provide a steady, easily detectable signal for IR camera and receivers. Beacon with steady radiation should fix the issue.

**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: 81.35%** |
| Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **93.75%** |
| Chassis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 95% |
| Controller |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 95% |
| Software |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 85% |
| Sensors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 100% |
| Additional Functions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | TBD |
| Build |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **81.7%** |
| Chassis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 80% |
| Controller |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75% |
| Sensors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Test |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **90%** |
| Movement |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 95% |
| Following |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 85% |
| Obstacle detection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Additional Functions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | TBD |
| Present |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **60%** |
| Records |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 70% |
| Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50% |
| **Milestones** |  |  |  |  |  |  |  |  |  |  |  | **11/10** |  | **11/24** | **12/1** |  |  |

**Milestones**

1. Achieve robot mobility functions, including sensors, **Nov. 10**. **ACHIEVED**
2. Install carrier and peripherals, to complete the body, **Nov. 24**.
3. Verify all functions in comprehensive operational test, including all components, **Dec. 1**.