Weekly Project Report

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TrailBot

**Progress**

* New IR follower module obtained.
* Ordered basic IR camera.
* Received miscellaneous sensor mounting hardware.
* Successfully tested basic obstacle avoidance in live run.

**Plans**

* Further develop IR array to better isolate each element.
* Continue coding and testing of both IR arrays, including light filtering for new sensor.
* Explore more options for following function (e.g. bluetooth, IR camera).
* Develop and assemble sensor mounting.
* Add multiple sensors for obstacle avoidance.

**Issues**

* Individual elements of the IR array don’t seem to differ in value enough in the presence of the beacon to give different commands (to turn bot).
* New IR follower module doesn’t seem to filter out other light sources (i.e. natural light, fluorescent light) besides the intended 38 kHz IR signal.

**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: 57.3%** |
| Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **81.3%** |
| Chassis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Controller |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Software |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 80% |
| Sensors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 65% |
| Additional Functions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | TBD |
| Build |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **78%** |
| Chassis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75% |
| Controller |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 85% |
| Sensors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75% |
| Test |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **70%** |
| Movement |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Following |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 30% |
| Obstacle detection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 90% |
| Additional Functions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | TBD |
| Present |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **0%** |
| Records |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0% |
| Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0% |
| **Milestones** |  |  |  |  |  |  |  |  |  |  |  | **X** |  | **X** | **X** |  |  |

**Milestones**

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