|  |  |
| --- | --- |
| Project Name: | MailBird: An Autonomous Delivery System |
| Team #, Members: | Team 1, Ben Smith, Hugh Dillon, Hunter Thorington, Rick Holloway, Zac Hawkins |
| Report Date: | March 26, 2014 |
| Project Description: | A landing system that can guide a vehicle using IR LEDs within 1 inch of a target. |
| Cycle (1, or 2): | Cycle 2 |
| Cycle Intent: | Use working prototype of IR module to mimic loiter behavior over LED station |

**TASKS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Planned |  |  | Actual |  |
| Task # | Task Description (Add rows as needed) | Cycle planned for completion | Total planned hours | Planned hours this cycle | Status (% complete) | Actual hours this cycle | Total hours |
|
|
| 1 | Team management | 2 | 60 | 20 | 20.00% | 4 | 12 |
| 2 | IR land control method | 1 | 120 | 20 | 80.00% | 46.5 | 146.5 |
| 3 | IR camera implementation | 1 | 40 | 20 | 100.00% | 18 | 83 |
| 4 | Ground Station control method | 1 | 40 | 0 | 85.00% | 0 | 26 |
| 5 | Landing station | 2 | 20 | 10 | 5.00% | 0 | 1 |
| 6 | Reports | 2 | 180 | 100 | 1.00% | 1 | 67 |
| 7 | Marketing display | 2 | 40 | 40 | 3.00% | 0 | 2 |
| 8 | Integration of components | 1 | 100 | 0 | 100.00% | 6 | 113 |
|  |  | **Planned Total1** | 600 | 210 | **Actual Total** | 75.5 | 450.5 |

1Planned Total should equal (# of team members) x (10 hrs. per week) x (Cycle 1 weeks 6) + Cycle 2 weeks (6) = 12 weeks).

2Assumes 5 hours per week for 12 weeks. Should be mainly team leader(s).

**TEAM MEMBER HOURS**

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

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  | **Total Hours** |  |
| **Name** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **Week** | **Cycle** | **Project** |
| **Dillon, Hugh** | **--** | **9** | **--** | **--** | **--** | **--** | **--** | **--** | **9** | **16** | **102.5** |
| **Hawkins, Zac** | **--** | **9** | **--** | **--** | **--** | **--** | **--** | **--** | **9** | **14** | **75** |
| **Holloway, Rick** | **--** | **9** | **--** | **--** | **--** | **--** | **--** | **--** | **9** | **16** | **109.5** |
| **Smith, Ben** | **--** | **8.5** | **--** | **--** | **--** | **1** | **--** | **--** | **9.5** | **15.5** | **72.5** |
| **Thorington, Hunter** | **--** | **9** | **--** | **--** | **--** | **--** | **--** | **--** | **9** | **14** | **91** |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **TOTALS** | **0** | **44.5** | **0** | **0** | **0** | **1** | **0** | **0** | **45.5** | **75.5** | **450.5** |

**Accomplishments since last status report:**

* Set up a testing environment to test the response to the quadcopter in one dimension by suspending it on a rope when it flew.
* Implemented LEDs to indicate whether the camera sees the LEDs on the landing pad and whether the camera is centered over the landing pad.
* Tested the quadcopter in an indoor environment (the Coliseum) to mitigate wind interference.

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

* Quadcopter does not seem to be adjusting in the correct direction. Testing will be done to ensure that the camera’s axes are identical to the quadcopter’s.

**Risks facing the project and actions to deal with same:**

* After modifying the flight code, there is potential for unpredictable behavior from the quadcopter while it’s in the air. It seems that the RC controller is still valid for switching modes, so as long as we test in a wide space, we should be able to get the quadcopter back to the ground (in some fashion – crashes are not ideal but at least you still have something to fix).
* Failsafes were disabled in order to get the quadcopter to enter the IR land mode. This could potentially drain the battery too much and cause the quadcopter to crash in midflight when the battery dies. We’ll have to periodically check and change the battery when flying even if the quadcopter is still running.

**Objectives for the next week:**

* Ensure that the orientation of the camera is the same as that of the quadcopter by determining the x and y axes of the camera and checking the output values for pitch and roll.
* Continue to test the quadcopter in indoor facilities.
* Take flight logs from the quadcopter so we can determine whether it is adjusting roll and pitch as it should.