Milestone 5
Preliminary Testing

Due: In class, November 13 – 14, 2013.
Late submission is allowed, with a 10% penalty per class meeting.

Value: 6% of course grade

Team Name: The D-Team *Section:* 0401

Please demonstrate the following tests. You are encouraged to complete these tests before the due date (e.g., the levitation test should be completed by 11/4). For each test you are allowed as many attempts as you like, but these must be conducted during your normal Monday – Thursday class meetings.

(1) *Levitation test.* Hover for 10 minutes without leaving a 1 x 1 m square area with little or no spin. Hovering will be confirmed by passing a sheet of paper under all areas of the skirt. Your craft's mass and mass distribution should be close to those of your expected final design.

11/21/13
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(2) *Propulsion and durability test.* From within the arena, your craft must travel directly to and contact the opposite wall (4 m away) in under 30 s. Your craft's mass and mass distribution should be close to those of your expected final design. There must be no damage upon contact with the wall. This must be demonstrated twice in a row.

Instructor Approval and Date

(3) *Sensors and control test.* From the starting location, your hovercraft must travel to and enter the arena, and then locate, travel to, and contact the pedestal. Manual assistance is permitted, provided that the manual assistance is physically consistent with the hovercraft's own controls as demonstrated by functioning fans, servo motors, etc.

Instructor Approval and Date

(4) *Payload delivery test.* Demonstrate the functionality of your craft's payload delivery mechanism by positioning your craft at least 1.0 m from the pedestal and triggering your hovercraft to deliver the payload. Your hovercraft must deliver the payload in two consecutive trials to two different target bin locations. **You may select these locations before each trial. The payload delivery mechanism must begin each test in the same "neutral" position, as specified in your final design concept. Your craft must begin this test levitating and must remain autonomously controlled after being released from rest.**

12/5/13
Instructor Approval and Date