Team 4 Checkpoint and Project Preview Definitions
Margaret Koehler, Michelle Warner, Tamara Hasoon, Karen Ladenheim

5/12: Check Point 1
Functional
   A. Can hover and drive with propulsion fan (not computer control)
   B. Balloon monitor communications
   C. Do MI6/SPECTRE handshaking from actual protocol, hardcoded addresses
   D. Be able to disconnect with balloon pop or taking out the key

Testing Procedures
A: SPECTRE hovering and propulsion
   1. Put the SPECTRE in the fountain along the wall closest to SPDL between two fountains.
   2. Flip the power switch (initiates hovering).
   3. Flip the thrust switch.
   4. Success is defined as touching the other wall of the fountain.

B: Balloon Monitor Communications
   1. Push the limit switch on the balloon monitor. An LED connected to the TIVA and an LED connected to the balloon monitor PIC should light up.
   2. Release the switch and both LEDs should turn off.

C: MI6/SPECTRE Handshake
   1. MI6 LED should start red and TIVA LED should start off.
   2. Push and hold the linker limit switch. When MI6 is trying to connect, LED should turn yellow. This yellow functionality can be tested by trying to link with the TIVA off. If no connection is made in 1 second (according to the protocol), light will turn to red.
   3. When a connection is made, the MI6 led should turn green and the TIVA LED should turn on. The connection should be broken and both LEDs back to disconnected (red and off) if the balloon is popped or the connection button is released.

5/18: Check Point 2
Functional
   A. All functionality of check point 1
   B. All MI6 inputs (except balloon popping) are using the final sensor/input components
   C. SPECTRE is able to steer, drive forward, brake, and hover/not hover under MI6 control

Testing Procedures
Put SPECTRE in Terman Pond on the side where the actual event will take place. Connect with the MI6 using selection dial and key input (should not respond to other selection dial positions). Drive a lap around two fountains using MI6 controls. Pop SPECTRE balloon manually and observe disconnect.

<u>**5/21: Project Preview**</u>
Functional

    A. All functionality of checkpoints 1 and 2
    B. Balloon popping mechanism and input from MI6 with safety
    C. Include the connected/disconnected flag instead of just LED.
    D. Can demonstrate checkpoint 2 functionality with another MI6
    E. Can demonstrate checkpoint 2 functionality with another SPECTRE.

Testing Procedures
See checkpoint 2 testing procedures for part C and D. Add that the flag should follow the correct connected vs. disconnected signaling.
Put SPECTRE next to balloon (in right orientation for the balloon popping mechanism). Turn on, connect to the MI6, and pop the balloon.

SPECTRE:
- Stop
- Hover
- Brake
- Drive Straight
- Pop Balloons
- Steer
- Communicate with Controller
- Visible Status Flag
- Power Down Switch
- Fuse
- Water - Repellent
- Tiva & Pic?
- Balloon Monitor

MI6:
- Pic or Tiva?
- Water - Repellent
- 3 sensing modalities
    - Go
    - Stop
    - Turn
- Connect to Robot
    - Connect button
    - Selector switch

?'s
- Does hover fan have to stay on
- Who/how do we learn our about our balloon status

Buy
- balloons
- ADA fruit solderless breadboards
- Fan - steering?
- rubber feet (steering)