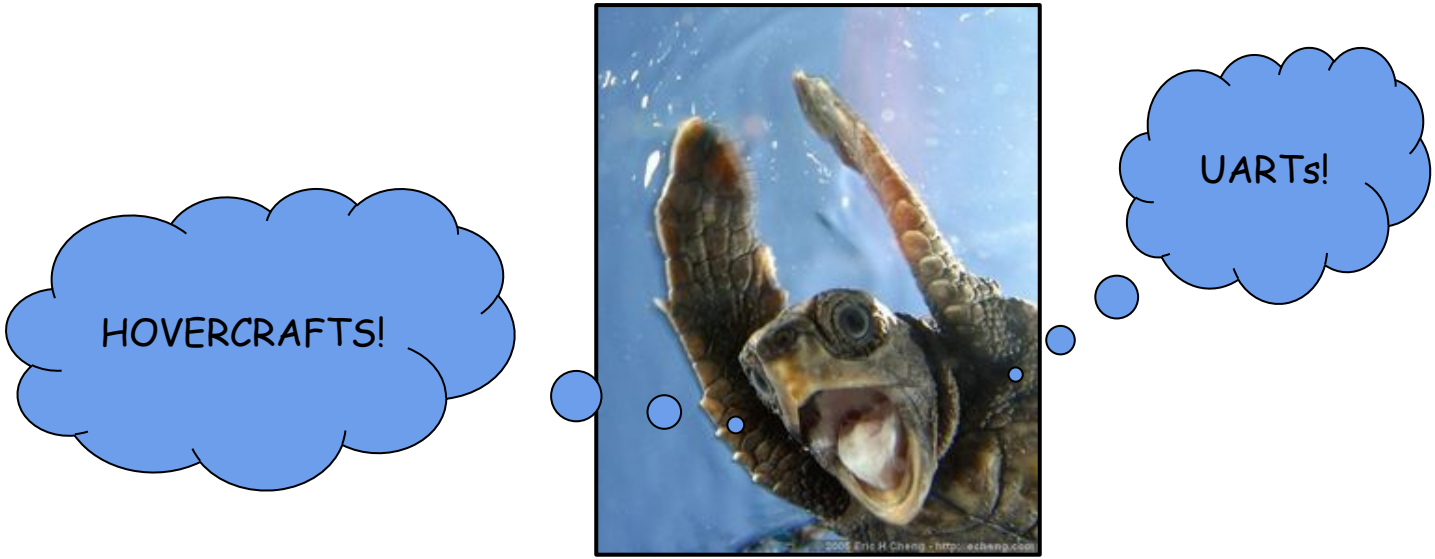
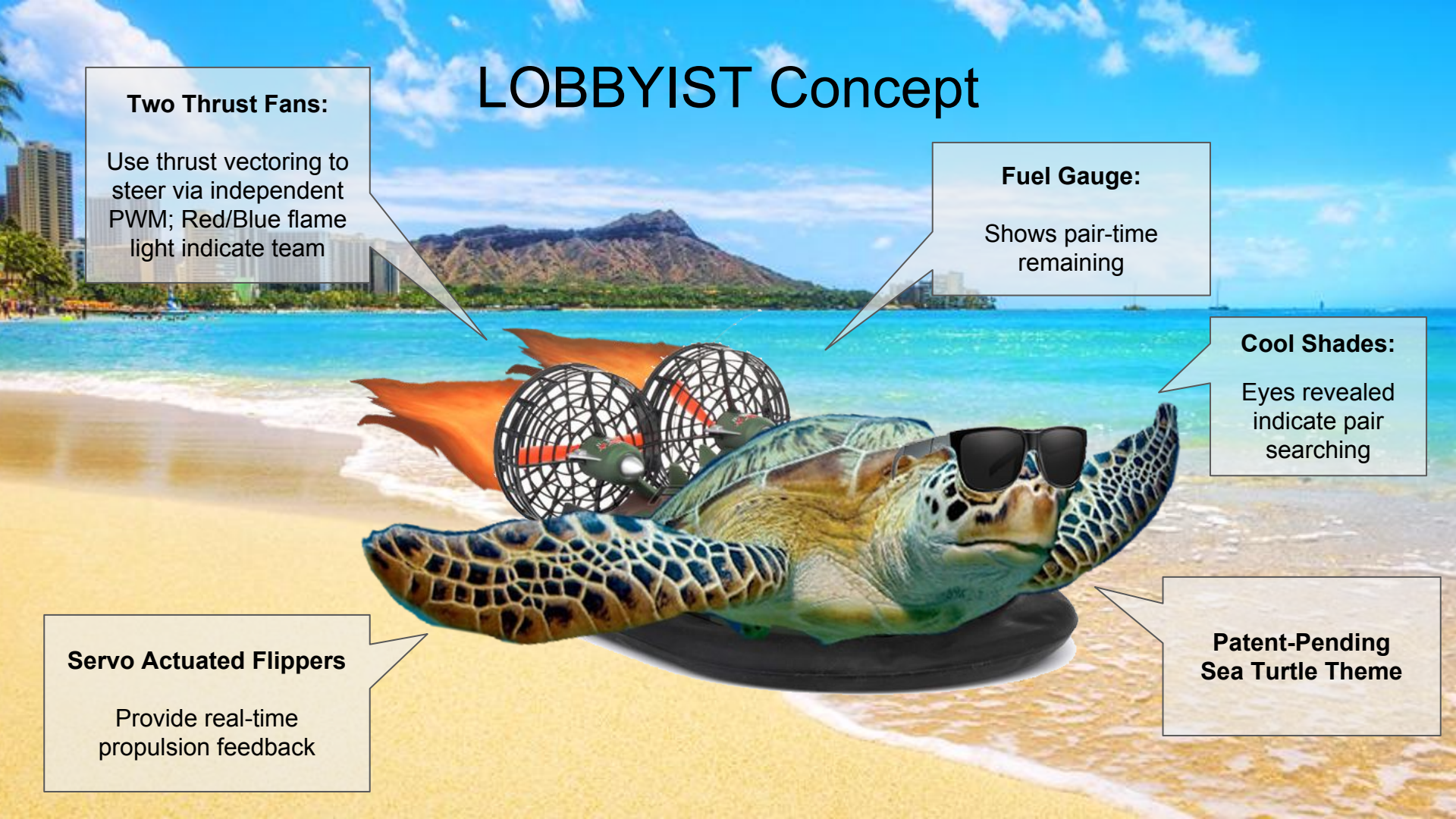
Team 4



ME 218c Design Review

LOBBYIST Concept



Two Thrust Fans:

Use thrust vectoring to steer via independent PWM; Red/Blue flame light indicate team

Fuel Gauge:

Shows pair-time remaining

Cool Shades:

Eyes revealed indicate pair searching

Servo Actuated Flippers

Provide real-time propulsion feedback

Patent-Pending Sea Turtle Theme

PAC Concept

Force Sensor (FSR):

Frequency of hitting head is reverse thrust.

Shake Sensors:

One on each flipper.

Frequency of paddling is forward thrust.

Steering is the frequency differential between the hands.

4 Position Switch:

Select which lobbyist.

*An LED will signal paired vs. unpaired.

First Checkpoint Functionality

Main Goal: Create basic software and hardware frame that future subsystems can be integrated into

- Functionality #1: Construct base platform and skirt
  - Test: Hover for >1 min.
- Functionality #2: Add steering capability (hardware) to platform
  - Test: Ability to turn left/right and move in forward and reverse directions off of keyboard strokes
- Functionality #3: Establish radio communication
  - Test: Connect Tiva and PIC via Xbees and turn on LEDs on both ends
- Altium schematics finalized, statecharts, chassis CAD
  - Designs confirmed on breadboard

Second Checkpoint Functionality

Main Goal: Wirelessly transmit inputs from the PAC to the LOBBYIST

- Functionality #1: Obtain input from PAC circuits
  - Test: Use PAC inputs to print messages to TeraTerm (team select, shake sensors, FSRs, etc)
- Functionality #2: Tether PAC input circuits to steering/propulsion system
  - Test: Use PAC inputs to control propulsion fans for left/right/forward/reverse (Tiva and PIC tethered)
- Functionality #3: Wirelessly control steering/propulsion system with PAC
  - Test: Use PAC inputs to control propulsion fans for left/right/forward/reverse (Tiva and PIC connected via Xbees)

Project Preview Functionality

Main Goal: Interface with other PACs and LOBBYISTs

- Functionality #1: Display of memory and commitment
  - Test: Indicate to the audience the currently controlling special interest (Red/Blue)
  - Test: Indicate the amount of time remaining before the bribe from the current PAC expires
  - Test: Functional electromechanical display indicating the communication with a PAC is currently active
  - Functional electromechanical display indicating LOBBYIST searching for PAC
- Functionality #2: Demonstrate interoperability between two LOBBYISTs and PACs
  - Test: Successfully control two other teams' LOBBYIST
  - Test: Have two other teams successfully control our LOBBYIST

Team 4 - Project Logbook

https://docs.google.com/document/d/1xBgBrOUVm8xZiq7QMwzIyUf619CBxAdtZrKtUYw64Z8/edit