Status Report #5

Integrated Helmet System: IHS
By: Allen Thomas, Frank Valdez, Walter Madalinski, & Danh Vo
10-06-08

Wireless Helmet with Head-Up Display, turn & brake indicators, MP3 player, and rear-view camera.
The IHS motorcycle helmet increases the safety margin of the rider by increasing their personal awareness and visibility to other drivers.

Milestones:

- Establish wireless communication - 9/11/08
- Establish output to display – 10/01/08
- Design MP3 Circuit – 9/24/08
- Camera signal processing – 10/10/08
- Retro-fit components into helmet- 10/28/08
Completed Tasks

- Display is up
- Wireless communications
- Data acquisition circuit
Pending Tasks

- Printed circuit board design
- Choose Camera
- Reflect an image
Upcoming Task

- Populate printed circuit board
- Mount optics on visor
- Display camera image on screen.
Schedule

1. Phase 1: Hardware/Software Research
   - Determine data acquisition system: 5 days (Wed 8/27/08)
   - Research hardware options: 5 days (Wed 8/27/08)
   - Research display projection techniques: 5 days (Wed 8/27/08)

2. Phase II: Design Hardware/Software
   - Choose hardware components: 2 days (Thu 9/4/08)
   - Design PCB for additional circuitry: 10 days (Mon 9/8/08)
   - Order parts: 0 days
   - Wait for parts: 7 days (Mon 9/15/08)
   - Design visual reflection surface and optical focus lens: 17 days (Fri 9/19/08)
   - Develop embedded code: 25 days (Wed 9/24/08)
   - Develop code for motorcycle microcontroller: 25 days (Wed 9/24/08)
   - Develop code for helmet microcontroller: 25 days (Wed 9/24/08)

3. Phase III: Implementation
   - Fabricate and populate PCB: 7 days (Wed 10/1/08)
   - Retest embedded hardware: 8 days (Wed 10/1/08)
   - Integrate motorcycle hardware: 14 days (Tue 10/8/08)
   - Integrate helmet hardware: 14 days (Tue 10/8/08)
   - Receive image on display from camera: 0 days (Mon 10/14/08)
   - Receive wireless signal from motorcycle: 0 days (Mon 10/14/08)
   - Configure haptics engineering: 7 days (Tue 10/22/08)

4. Phase IV: Testing and Performance
   - Test and debug embedded code: 7 days (Mon 11/3/08)
   - Confirm operation of inputs and outputs: 0 days (Fri 11/7/08)
   - Test wireless communication system: 5 days (Fri 11/7/08)
   - Test power supply sustainability: 5 days (Fri 11/7/08)
   - Test clarity of projected images: 5 days (Fri 11/7/08)

5. Phase V: Presentation and Report
   - Prepare final report: 5 days (Mon 11/24/08)
   - Prepare for presentation: 0 days
   - Demo product prototype: 10 days (Mon 11/24/08)
   - Submit final report: 0 days (Thu 12/4/08)
   - Team evaluation and project file submission: 0 days (Wed 12/10/08)
   - Final presentation: 0 days (Fri 12/12/08)
Thank You!