**Smart Specs**

**Technical Overview**

**Goals**
- Develop a concept
- Build "Proof of concept" prototype
- Technical Report for future EnPRO

**Goal Execution**
- Used pre-built modules for fast development
- Introduced team members to hardware and software
- Delegated skill enhancing tasks during downtime

**Accomplishments**
- Designed and built prototype
- Completed detailed Technical Report

**Project Challenges**
- Time and Monetary Constraints
- Display technology is still under development
- Indoor demonstration

**System Architecture**
- **Micro-Controller**
  - Acts as the "brain" of the device. Uses wireless, GPS, and compass data to display on the heads-up display.
- **GPS**
  - GPS Module gets real-time location data
- **Compass Module**
  - Gets real-time directional data of the user's head
- **Wireless Communication**
  - Allows the device to "talk" to other Smart Specs
- **Heads-Up Display (HUD)**
  - Shows user critical information

**Future Concept**
- Heads-Up Display and Electronics retrofitted to the user's paintball mask.
- Runs on a standard 9V battery
- Desired unit cost: under $200
- Integrated wireless communication, GPS, and digital compass
- Real-time display of critical information such as friendly locations
- Low power consumption
- 100 meter wireless communication range
- Programmable by the user

**Technical Plan Roadmap**

<table>
<thead>
<tr>
<th>Fall 2009</th>
<th>Spring 2010</th>
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<tbody>
<tr>
<td>Proof of Concept Prototype</td>
<td>Form Study Prototype</td>
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<tr>
<td>Visual Prototype</td>
<td>Functional Prototype</td>
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<tr>
<td>Final Product</td>
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**Recommendations**
- Future Tasks
  - Design a refined prototype
  - Miniaturize electronics
  - Research Local Positioning System (LPS)
  - Research display systems for HUD

**Status:** 20% Complete