**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

**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**
Compass Module gets real-time directional data of the user’s head

**Wireless Communication**
Wireless Communication allows the device to “talk” to other Smart Specs

**Heads-Up Display (HUD)**
Shows user critical information

**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

**Recommendations**

**Future Tasks**
- Design a refined prototype
- Miniaturize electronics
- Research Local Positioning System (LPS)
- Research display systems for HUD

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**Team Members**
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**The Problem**

In the hectic crossfire of battle, it can be difficult to distinguish your teammates from your enemies. This often results in friendly fire and casualties.

In the game of paintball, and the reality of war, killing a teammate is the worst of all crisis.

**The Solution**

Smart Specs allows the user to track teammates with a tag that marks friendly forces in the heads-up field of view. This digitally displayed information allows the user to identify teammates and enemies.

By identifying teammates, the user avoids friendly fire and eliminates the tragedy of casualties.

**Accomplishments**

- Designed and built prototype
- Completed detailed Technical Report

**Market Research**

- Paintball is the number one growing sport in the US according to the National Sporting Goods Association. In the last 5 years it has had an 84% increase with over 9.4 million players in the US currently.

- 28% of these players (1.4 million) play over 15 times a year.

- The paintball market has an average growth rate of 16.8% per year.

- The average household income is $48,200 for frequent paintball participants.

- In total, players spent over $720 million dollars on paintball equipment in 2008.

- With projected sales of $200 for each device, and an expected profit of 25% on each product, if we can reach 3% of the monthly player market over 5-years time, we expect earnings of over 2.1 million dollars in our 5th year.

**Recommendations**

- Future Tasks
  - Develop revenue model
  - Specifics of distribution and manufacturing

- Future Markets
  - Military
  - Airsoft
  - Search and rescue
  - City police (security)
  - Video gaming industry
  - Auto industry (wearable GPS systems)

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