Adaptive Wii™ Remote for C-6 Quadriplegic

Overview
Mr. Bob Yorty is a C-6 quadriplegic that strives to play to the Wii™ video game system. The Wii™ are Penn State team has created an adaptive Wii™ remote that will allow Mr. Yorty to play the Wii™, specifically Wii™ sports. The major challenge was designing a way to utilize his full muscle control to play the Wii™, without hindering his enjoyment or convenience.

Objectives
To provide Mr. Yorty with an adaptive device that will allow him to play the Wii™.

Approach
- First the team visited Mr. Yorty to gather customer needs about how he wanted the device to function.
- To get a better idea of how we could accommodate Mr. Yorty, we did a patent search to look up similar products and get ideas.
- The team generated three major concepts for the design, and one of them went through two iterations to become the final design.
- The team analysed the concepts based on how easy and rehabilitative it would be for Mr. Yorty to use.
- CAD models were made of the final design concept to make it easier to fabricate, clearly showing the dimensions of our device.
- The prototype was made by machining a plexiglass deck and installing buttons on the deck. The buttons were connected to the Wii™ remote, via soldering.
- The team tested the device by playing Wii™ Sports and testing all the buttons individually.
- The final project fit Mr. Yorty’s needs for an adaptive Wii™ remote, to allow him to play the Wii™ system.

Outcomes
- This new approach allows C-6 quadriplegics to play the Wii™
- The product is rehabilitative and still allows the user to enjoy using the Wii™
- Creating devices geared towards disabled people will allow for more innovations to be created in the future.