Team 19: Brösel

Team Members: Kegan Leberman, Chad Malinowski, Nathan Leduc, Tom Van Noord
Project Description:

Our team’s goal is to create a new computer interface called Brösel that will be used in presentations. The device will allow the user to control the computer from a distance as well as provide a method of interface with what is shown on the screen. Essentially the goal of the project is to replace the white board with an easy to use device that would be able to read the user’s motions to output their writing on the projected screen, or the computer screen. There would be no need for markers; the user could simply draw or write with the device and the output would be displayed on the screen.

The device will use accelerometers and gyros to determine the relative motion of the device from a distance and will use a two dimensional sensor array to determine the precise motion of the device when interfacing with the screen. A button on the device will be used to trigger the accelerometers, gyros and sensors in order to determine when the device is writing on the board. Using accelerometers and gyros will allow for the use of gestures as well, allowing the user to define certain functions to work with a simple wave of the hand.

As well as providing special interfaces, the device will also function as a simple computer mouse, providing multiple uses for the convenience of the customer. We expect to market this to teachers, professors, and anyone who frequently make presentations.

Requirements:

The new computer interface will have to meet the following requirements in order to successfully create a niche for our device in the market:

1. The device shall contain a variable dots per inch (DPI) setting to take into account user preferences.
2. The device shall accommodate teachers and professors who change rooms between lectures. Thus, the device shall be portable. Portability is defined as ten minutes or less to set up and take down the device and sensors.
3. The device should be able to write on the projected presentation, computer screen or TV screen similar to writing on the whiteboard. In addition, the device should be able to write in the air.
4. Device shall have a range of 40 to 50 ft.
5. The device will still have the same functionality as a standard mouse.

Status:

Currently, our team is in the research phase. We are researching what the best methods and hardware are to make Brösel possible. The goal is to have the preliminary research phase finished by December 11, 2015 in order to start researching and designing the first prototype.