

Executive Summary:

Many people do not want to go through surgery to have a new limb that can move. Others don't have enough money for that kind of surgery. The purpose of our project is to find out that if we can make prosthetic arms move without being attached to the nerve of the missing limb. If this is possible, many people will have the option of either going through surgery to have the limb attached or to just simply slide a prosthetic arm on and have it move at the sound of your voice. The plan of our project is to buy a two-way radio microphone on a head set that is then connected to our model of an artificial arm. The arm will be built out of approximately 2-5 pieces of aluminum rods, which will be connected together by duct tape to make the fingers, hand, wrist, and forearm. We will then insert wires that will connect to all of the joints of the arm. Then, we will use C++ programming and create a system of radio waves that is linked into the cables of the arm through the head set to hopefully make the arm move on voice-command.

Introduction:

Purpose: Many people do not want to go through surgery to have a new limb that can move. Others don't have enough money for that kind of surgery. The purpose of our project is to find out that if we can make prosthetic arms move without being attached to the nerve of the missing limb. If this is possible, many people will have the option of either going through surgery to have the limb attached or to just simply slide a prosthetic arm on and have it move at the sound of your voice.

Project Plan: The plan of our project is to buy a two-way radio microphone on a head set that is then connected to our prototype model of an artificial arm. The arm will be built out of approximately 2-5 pieces of aluminum rods, which will be connected together by duct tape to make the fingers, hand, wrist, and forearm. We will then insert wires that will connect to all of the joints of the arm. Then, we will use C++ programming and create a system of radio waves that is linked into the cable of the arm through the head set to hopefully make the arm move on voice-command.

Description:

The Materials will consist of aluminum rods, copper wires, electric duct tape, metal plates, and wire fasteners.

Procedure (Building the Arm):

1) Take 1 aluminum rod and measure to approx. 7 1/2 inches. This is the "forearm"

2) Place two plates and position them above the rod. This is the "palm"

3) Connect the "palm" to the "forearm" by using duct-tape and flexible aluminum rods in order to make the "palm" move.

4) Cut 5 pieces of flexible rods approximately 2-3 inches each.

These are the "fingers" (each of the finger rods is hollowed out so the wires are able to go through them.)

5) Slide 5 the copper wires individually into each "finger", twisted at the end and into the "forearm".

6) Using duct tape, attach each of the "fingers" on to the "palm"

7) At the end of each "finger", use a wire fastener to twist on each exposed wire.

Results & Conclusion:

In conclusion, we have constructed the arm, which took a less time than we had planned. We had to come up with a different design from our original design. We had no trouble with wiring the fingers, we were able to run the wires through the fingers and we capped the end of each finger with a wire fastener. Our program that we had come up with did not work. We could not come up with a program that would move the arm let alone a finger. So at this point we still do not have a program that is functional and will work with the radio waves. We have learned a lot

from this project. We have learned how to come up with and make our own program. We have also learned how to use C++ and html programs properly. We will try to come up with a program that will work with what we had originally planed.

Acknowledgements:

We would like to thank our mentor, Jose Herrera, for helping us in the process of constructing our robotic arm and for helping us to buy the supplies for our robotic arm. We would also like to thank Mr. Larry McBride for assisting us with the long process of this project. We thank and give our gratitude to the

**ASI Challenge Program for letting us
contribute our project to their program and for
letting us be a part of the Challenge program.**

**We would like to give our thanks to all of
these people.**