Los Baño Bandidos

Restroom Assistant for a Young Man with Special Needs

Team Members

MIDN Joseph Merki	Systems Engineering
MIDN Oliver Nelsen	Systems Engineering
MIDN Christopher Day	Mechanical Engineering
MIDN Danny McCaffrey	Mechanical Engineering

Faculty Advisors

Prof. Patrick Caton	Mechanical Engineering
Prof. Rick Link	Mechanical Engineering

Background: Our customer was born without arms from the shoulder down. He had recent spinal surgery but is still able to reach his face with either foot by bending forward at the waist. He is left foot dominant, and is very dexterous with the toes of both feet. His right leg is 5.5” shorter than his left. He has a right leg prosthesis to correct the leg length discrepancy which he uses for long distances, such as at school. He can walk short distances without his right leg prosthesis, such as around the house, by shifting his weight from one foot to the other. He is independent in donning and removing the prosthesis. Due to his condition he has difficulty performing certain daily functions independently, such as using the restroom and dressing himself.

Objectives: The goal of this project is to provide our customer with a product (or products) that will let him independently use both urinals and sit-down toilets.

Results: So far the team has developed a number of first generation prototypes after an extensive brainstorming and design process. The first generation prototypes consist of products built out of duct tape, hangers, and various basic materials found easily and readily accessible. Currently the team is in the process of developing second generation prototypes which will be built with more durable materials and have more extensive design features. Using solidworks, woodworking, and other options, the second generation prototypes are scheduled to be hopefully completed by the end of January.