Senior Design Project Data Sheet

Project #	Project Name	Project Track	Project Family
P13045	Mobile Pediatric Stander	Biomedical Systems and Technologies	Medical Mobility Device Engineering
Start Term	Team Guide	Project Sponsor	Doc. Revision
2012-W	Ed Hanzlik/Steven Day	Linda Brown	1

Project Description

Project Background:

Mobile assist devices are designed to give someone with a disability some independence and feeling of inclusion. In the case of this project, we are trying to mobilize a pediatric standing device so that a disabled child can stand on the same level as their peers and move at the same pace. This project has never been attempted as a senior design project in the past and as out benchmarking has shown, there is no similar device on the market currently. A device that most closely related to this device would be the wheelchair that stands up vertically and turns into a mobile stander.

Problem Statement:

The objective of this project is to mobilize a pediatric stander to increase independence and mobility for a child with a disability.

Objectives/Scope:

1. Mobilize a pediatric stander
2. Add no more than 20 pounds to the existing device
3. Incorporate a collision avoidance sensor system
4. Be able to control the device with multiple types of inputs (joystick, touch screen, etc)
5. Develop a "training" mode for the device
6. Have the ability to remotely control the device

Deliverables:

- Mobilized Pediatric Stander
- System Design
- Detailed Design

Expected Project Benefits:

- Improved mobility of disabled child
- Feeling of independence for the child
- Training mode to train the new user on the device
- Safe, user friendly controls
- Versatile controls to fit various users

Core Team Members:

- Megan Chapman
- Kim Keating
- Heather Beam
- Thomas Bean
- Steven Geiger

Strategy & Approach

Assumptions & Constraints:

The team will spend a good amount of time studying the mechanics of the existing device and then decide exactly how to mobilize it. This will involve adding a rechargeable power system, motorized wheels, and a control system. The proposed budget is $6000 which was obtained through a grant which seems very reasonable at this point.

Issues & Risks:

- Control systems seems like it will be a big learning experience for everyone on the team
- Most of the team has little to no experience with mobility assist devices
- Safety will need to be top priority in every step of the design of this system