

Inclusive Bike

Major issues and initial team focus

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Introduction

Cycling is an activity that is enjoyed by many people in their everyday life. Unfortunately, some individuals are deprived of the chance to take pleasure in going out for a bike ride due to their physical abilities. Our task is to continue developing the initial prototype design to help to bring the opportunity of cycling to the life of people who use a wheelchair.

Initial Problem Statement and Existing Prototype

The initial problem was to develop a prototype design of an attachment for the bicycle to help to bring the opportunity of cycling to the life of people who use a wheelchair within given time and money constrains.

Existing prototype:



Major Issues

<p>The client is looking for an attachment to the bicycle that allows people on a wheelchair to be taken for and enjoy a bicycle ride</p>	
<p>Reliability of the design</p>	<p>The assembly of the attachment and the wheels has to be reliable and safe for use, and be able to carry the weight up to 150 kg</p>
<p>Mounting system for the design</p>	<p>The way the attachment has to be mounted on the bike isn't absolutely clear.</p>
<p>Ramp</p>	<p>The prototype needs to have a ramp or another equipment to allow the wheelchair to be placed onto the platform of the attachment easily</p>
<p>Reliable base</p>	<p>The prototype needs to have a platform made of durable material that could carry weight up to 150 kg</p>
<p>Breaking signals and turning signals</p>	<p>The existing prototype doesn't have any indicators for stopping or turning</p>
<p>Safety system</p>	<p>The attachment has no strapping system to secure the wheelchair on the prototype</p>

Initial team focus

- Research available solutions for the major issues stated above
- Evaluate available solutions and identify which one of them are the most feasible
- Evaluate the possibility of implementing these solutions within given time and money constrains as well as availability of components.
- Propose the final solutions for team review

Preliminary plan of developing the prototype

- Improve the structure durability, stability and weight capacity (possibly changing wheels and the supporting platform)
- Design breaking and turning signaling system
- Design the system that allows the wheelchair to be placed onto the platform
- Designing the strapping system for the wheelchair to stay safely on the platform during a ride
- Add LCD display for the GPS
- Analysis of the durability of the materials used