

# MTE 481 - Design Project

## Object Avoidance and Navigation for Powered Wheelchairs

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# Introduction



# Need Statement

Powered wheelchairs can improve the mobility of the physically handicapped, but alertness and control are required for safe operation. Additional assistive technology is needed in order to afford the same benefits to the more severely disabled.

# Objectives & Constraints

- ▶ Improve the safety of powered wheelchairs, for the occupants and pedestrians both. Also, avoid property damage.
- ▶ Assist wheelchair users with difficult tasks, such as precise positioning and movement in constrained spaces. (e.g. washrooms, passing doorways, positioning for transfer to bed)
- ▶ Increase accessibility of powered wheelchairs (increase independence and mobility) by allowing wheelchairs to people would otherwise be denied them due to safety concerns
- ▶ It must be possible to integrate with existing wheelchairs.

# Criteria

# Potential Solutions

# Potential Solution 1 Detail

# Potential Solution 2 Detail



# Patent Search Results