All-Terrain Mobility Vehicle – SolidWorks Design Project

This project involved the design of an all-terrain mobility vehicle intended to safely and comfortably transport users across challenging environments such as rocky, icy, and wet surfaces. The design prioritizes user safety, accessibility, and ergonomic comfort, while integrating practical features for everyday usability.

Figure 1: All-Terrain Mobility Vehicle

The vehicle is equipped with front headlights to improve visibility in low-light conditions and enhance safety during outdoor use. An ergonomically designed seat provides proper posture support, paired with a seatbelt system to ensure passenger stability on uneven terrain. Adjustable armrests allow the vehicle to accommodate users of different body types and preferences, improving overall comfort during extended use.

To enhance convenience, the design includes a glove compartment for storing personal items, along with an integrated charging port for powering external devices. A key accessibility feature

is the remote controller, which can be mounted on either the left or right armrest, allowing seamless operation for both left- and right-handed users.

Figure 2: Glove compartment and Reflector (behind the seat)

An additional user-focused detail is the inclusion of a task light beneath the right armrest, which automatically illuminates when the glove compartment located on the lower right side of the seat is opened. This feature improves visibility and usability in low-light environments.

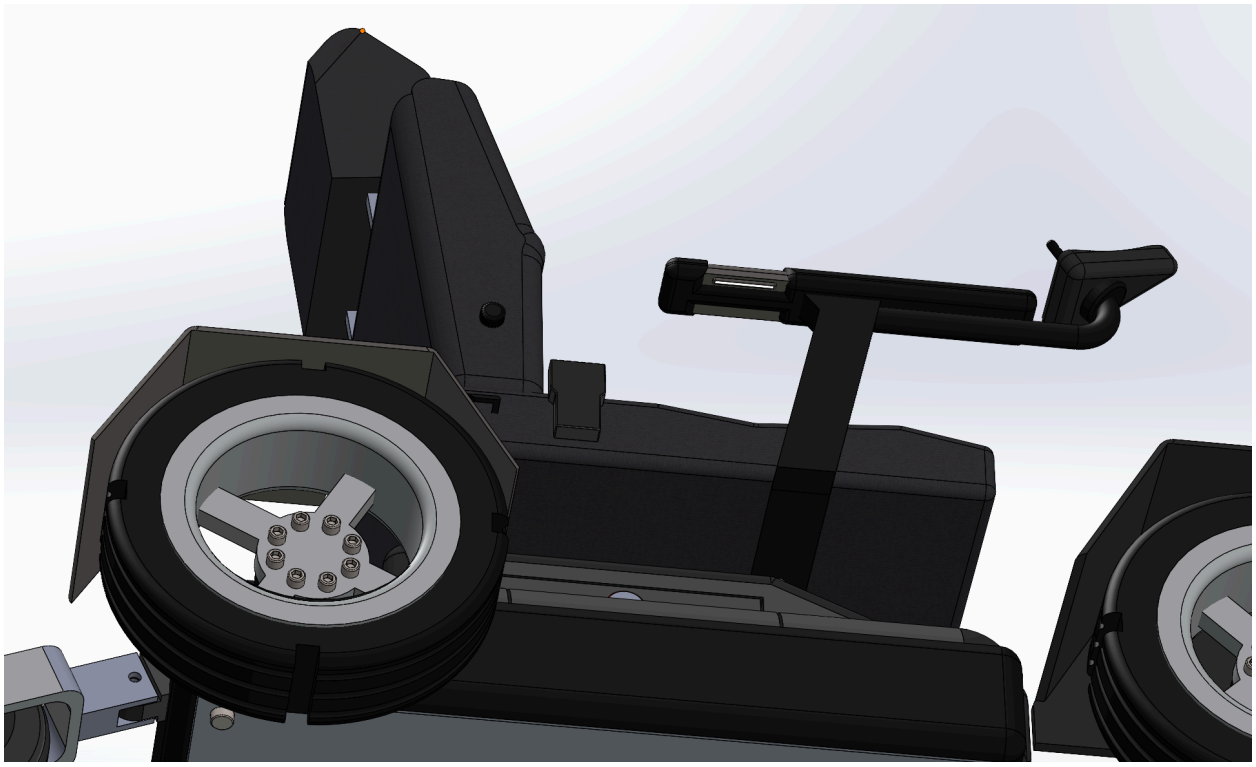

Figure 3: LED light for the glove compartment

The complete vehicle was modeled and assembled in SolidWorks, with careful attention to component integration, spatial efficiency, and real-world functionality. This project demonstrates my ability to apply CAD tools to create practical, user-centered engineering designs.