

The Beach Mule

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Introduction

- Many people travel to the beach for vacation because they want to get away from their everyday routine and relax.
- What is supposed to be a fun and relaxing trip can quickly turn into a chore because of the many items that people have to haul back and forth from the hotel to the beach.
- The Beach Boys seek to alleviate this problem with Beach Mule, a motorized beach cart that utilizes tracking technology to create a hands-free experience.

Objectives

- To help beach-goers, enthusiasts, clean up organizations and really anyone who enjoys the beach.
- Eliminate the hassle of carrying all your items to the beach by hand by introducing a hands-free option.
- Make sure that Beach Mule is resistant to weather and rough terrain so that it can be used in any situation.
- Keep the product at an affordable price so that it can be purchases by everyday people.

Autopilot

Beach Mule employs ultrasonic sensors to detect obstacles, Bluetooth for seamless connectivity with user devices, and GPS for precise location tracking. This integration enables its autopilot feature, ensuring smooth navigation across sandy terrains while providing users with hands-free convenience and a stress-free beach experience.



Figure 1: Image of Beach Mule

Methodology

Motor

- SyRen 25A Motor Driver
- DC Motor
- Axle/Chain/Sprocket
- Integration with Arduino Uno



Tracking

- SEN0208 Ultrasonic Sensors
- GPS Data with GPS Module
- Arduino Uno



Results



- Beach Mule successfully follows the user by utilizing GPS, ultrasonic sensors, a motor, a servo motor, and a microcontroller.



- Can carry well over the initial recommended weight with a capacity of around 80 lbs.

Conclusion

In conclusion, Beach Mule offers innovative solutions for beach gear transportation. Rigorous testing ensures seamless navigation on sandy terrains, ample storage, and robust construction. Embrace convenience and reliability, elevating beach outings to effortless adventures.