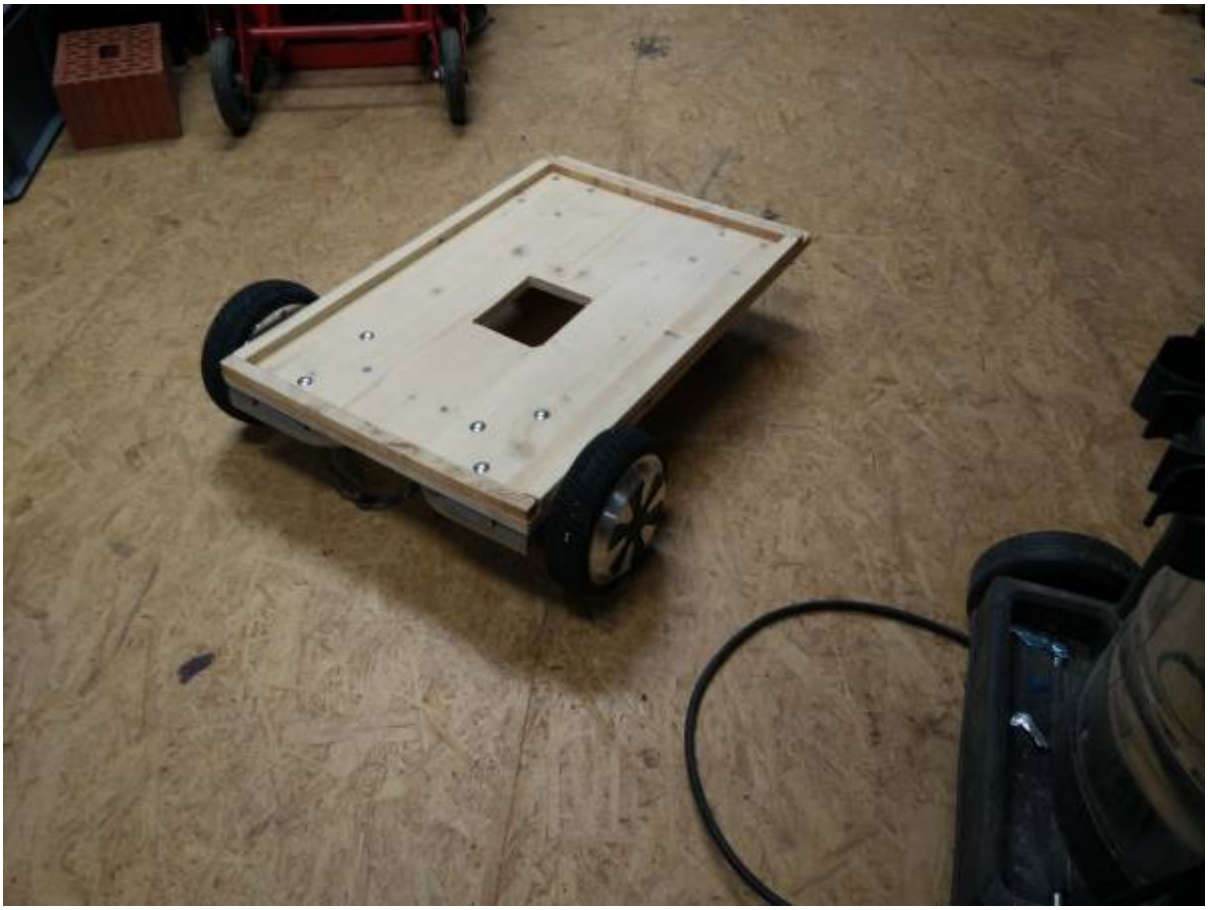
Transpotter

(transport & otter)

Introduction

Transpotter is an open-source, Hoverboard based transportation system for euro-boxes (Eurokisten), beverage crates and of course humans. Its main body is build out of wood, backed by parts of Hoverboard-frames. As drive the hoverboard-motors are used, as well as its control system.



Hardware

The main body is made of shelves cut to the required length. This gives us very usefull dimensions, and of course very uniform ones. The shelves are cut a little longer then the crates, luckily they already have the same width. Borders for the euro-boxes are glued on the boards to prevent them from slipping.

The Hoverbaord-Motors are suspended with the help of the old wheel suspensions. To do so, they have to be cut down, as they are not perfectly flat. Don't forget to deburr the fresh cut edges, they can be dangerous for the cabling.

Afterwards, they are screwed to the board, as well as a protective sheet of acrylglass, to protect the battery and the electronics.

It is important to use screws with a flat head, otherwise crates might wont fit that well. The size of the screws is M6x30. Also use them to add two roles to the front part of the cart. A roll diameter of 80mm fits very well, the overall height will be ~100mm.

Pro-Tip

When building more then one, pre-cutting and gluing everything, makes things quite faster!

Electronics

As motorcontroller and also as „brain“ for Transpotter, the original hoverboard-hardware is used. Luckily due to a leak (I guess) there is the firmware for this hardware on the internet (more in the next chapter).

The following links show the schematics for these controllers. Be aware that different hover-boards might use different versions of this hardware.

Hoverboard schematic overview by Salviador

Full hoverboard schematic
*warning, pin naming (not number) is different

Features:

- Plug and Play hardware
- Up to 40A motor current
- Operating voltage is ~42V (10S), the original battery can be used.
- It is cheap (~20€ for two motors)
- PPM and/or UART input
- 2 ADC-inputs

Disadvantages:

- Only 40A motor current (works for crates, but might be a little bit to less for humans)
- …

These boards can also easily obtained from broken hoverboards, they are mostly fixable.

Software

Please refer to: https://github.com/NiklasFauth/Hoverboard-Board-Hack

Videos

https://www.youtube.com/watch?v=qAs8ACCCEA8

https://www.youtube.com/watch?v=KX_DogzUGfw

https://www.youtube.com/watch?v=Ozr9UoIDPFk

link:MJj5XWQHUFE