0.1 Technical requirements

In order to select certain parts for the project some technical requirements have to be estimated. These include, but are not limited to the mass of the payload, the mass of the vehicle and the desired operating speed of the forklift.

0.1.1 Payload

The group agreed that the payload, for modeling purposes, will be cans of soda.

1. Forklift can lift a pallet of 4 european standard sized cans. Individual can dimensions: Width: 66.1 * 10^{-3} m; Height: 115.2 * 10^{-3} m; Volume: 0.33 L.
2. Forklift can lift 3.5 kg of mass. This includes 8 cans and a pallet.
3. Dimensions of the pallet should be 150 * 10^{-3} m by 150 * 10^{-3} m.
4. Payload can be lifted at least 150 * 10^{-3} m high.
5. Two pallets can be stacked on top of each other.
6. Lifting speed reaches 10 * 10^{-3} m / s.

0.1.2 Movement

1. Vehicle can travel at 50 * 10^{-3} m / s.
2. Vehicle can turn at least 18 ° / s.
3. This would be about how accurately the vehicle can follow the path but there is no solution to navigation yet so this could be meaningless with some movement types
4. Instead of the previous one we could have something like this: The vehicle can deviate less than 100 * 10^{-3} m left or right every meter traveled.
5. Vehicle is able pick up a pallet by inserting the forks into the pallet.

0.1.3 Mass of the vehicle

1. Vehicle should weigh less than 10 kg including the payload.