4. THE ADS SHALL BE ABLE TO DRIVE A TRUCK AUTONOMOUSLY BETWEEN TWO SPECIFIED LOCATIONS ON THE DC.

* The ADS shall avoid collision of the truck with other objects.
* The ADS shall not change the dynamics of the provided truck model.
* The ADS shall maintain the existing manual driving ability of the truck.
* The ADS should switch from manual driving mode to autonomous driving mode of truck within 10 seconds when the ADS receive the designated signal from the driver.
* The ADS shall switch from autonomous driving mode to manual driving mode of truck within 10 seconds after parking at the designated parking place.
* The ADS should show the driver the current driving mode.
* ADS shall receive the coordinates of objects within the map of the DC from the Localisation system.
* The ADS shall receive the desired destination from the DC operator.
* The ADS shall find the shortest possible path between the truck and the desired destination based on the object coordinates.
* The ADS shall choose the shortest possible path.
* (WILL BE DERIVED LATER, E.G. FORWARD DRIVING PATH/BACKWARD DRIVING PATH, THROUGH EMPTY PARKING PLACES OR AVOIDING EMPTY PARKING PLACES)
* The ADS shall find a path around the objects present on the map of DC while determining the path.
* The ADS shall ensure that physically impossible positions of the truck and trailer are avoided while determining the path.
* The ADS shall take into consideration that the truck has to park backwards at a dock while determining the path.
* The ADS shall be able to drive the truck on the final generated path.
* The ADS shall ensure that the truck and the trailer follow the final generated path with a maximum deviation of 0.1 meter during forward driving.
* The ADS shall ensure that the truck and the trailer follow the final generated path with a maximum deviation of 0.1 meter during reverse driving.
* The ADS shall ensure that the trailer is parked orthogonal to the docking door (angle of 90 degrees) during docking.
* The ADS shall ensure that the trailer is docked with a maximum deviation of 2 degree
* The ADS should ensure that the maximum steering angle does not exceed the physical capabilities of the truck’s steering ADS.