

Summary.

The congestion on the roads around Amsterdam is becoming an increasing problem. This is a threat to the supply and distribution overland of time-critical goods for the Aalsmeer Flower Auction and Amsterdam Airport Schiphol.

A solution for this problem is an underground logistic system (OLS). In this way the auction, the airport and a (still to be built) rail terminal are connected by an underground network. This will relieve the roads and increase the reliability for in time delivery of the cargo. The OLS will be equipped with unmanned vehicles. These vehicles have to be elevated to ground level at the auction and the rail terminal.

It is not sure whether the vehicles will be installed with enough power to get to ground level on their own. An alternative solution is to help the vehicles on their way up with an external propulsion.

The subject of this paper was to search for existing solutions with such external propulsions and judge them on their ability for the OLS.

Several solutions were found. Most solutions are (with some adjustments) suitable to be integrated in the OLS. The solution with a beam under the vehicle that generates an additional friction-force with a revolving chain on the way up, was recommended for the OLS.

This is a simple and relative cheap solution. It is recommended to investigate the costs of both solutions. The solution with external propulsion is not necessarily cheaper than installing enough power on the vehicle.