



The Future of Transportation in Tallinn, Estonia

www.urbact.eu/freight-tails

@freight_tails

April 2018

Trials of future transport modes demonstrate the opportunities and challenges that cities may face in the future.

As Tallinn's population grows, the city's road network faces more cars and larger and heavier freight vehicles. Tallinn is looking at how innovative solutions can be implemented using connected and autonomous vehicles (CAV) for both passengers and goods.

The city has participated in trials of delivery robots and autonomous buses, providing useful insights into the options that may be available in urban areas in the near future.



Tallinn is embracing new technology to solve urban freight issues

Successful city trials of delivery robots and autonomous buses have taken place



A national regulatory approach to connected and autonomous vehicles is being developed

Further trials are planned

Scope of works

Trials of delivery robots and autonomous buses have been conducted in Tallinn.

Delivery robots

Estonian company, Starship Technologies has developed local delivery robots, trialled across the world.

The delivery robots:

- carry items within a 3 km radius
- weigh approximately 22kg unloaded
- move at pedestrian speed and navigate around objects and people using cameras and sensors, to avoid collisions
- cargo bay is locked throughout the journey
- location tracked to provide an accurate arrival time.

Extensive trials in Tallinn have delivered goods to businesses in the Old Town and to residents in the suburbs. Both the company and City Government see the results as promising. However, when the Old Town is busy with pedestrians the robot's journey is a lot slower; partly because pedestrians are not used to seeing robots in action, and often enjoy stopping them and making them change direction.

Autonomous buses

In August 2017 Tallinn tested self-driving automated buses operated by Milrem. The self-driving buses were smaller than conventional vehicles, so carried fewer passengers. There was good public reaction to the one-month trial and no major safety incidents.

Outcomes

Based on the success of the delivery robots and autonomous bus trials, Tallinn is involved with additional trials of autonomous vehicles. The National government is also identifying the legal framework for future CAV operations in Estonia.

Lessons learnt

CAV development for passenger and goods movements provides several problems for regulators, including who has right of way and who is responsible in the result of an accident.

The Government Office of Estonia and Ministry of Economic Affairs and Communication have initiated a self-driving vehicle expert group to develop proposals for amending legislation (including liability, insurance, privacy, ethics etc.) for testing and operating fully autonomous vehicles.

The City Government is currently drafting a three-year plan to reduce the impacts of deliveries into the Old Town, and sees a clear role for technology in reducing the impacts of future freight movements.

Future of the project

One option to increase the use of robots in Tallinn Old Town could be a so-called 'mothership', where a large truck is parked on the Old Town edge, and delivery robots deliver the final few hundred metres. There are two current projects trialling CAVs in Estonia: Sohjoa Baltic and FABULOS.



Smaller electric vehicles are better for the environment and safer for pedestrians

Broad acceptance of technology to reduce the impacts of urban freight



CAV Trials are enabling regulators to address operational issues that need to be considered in future regulation

Appears to be a clear role for technology in reducing the impacts of future freight movements



Jaagup Ainsalu, Tallinn Transport Department, Tallinn City Government
Jaagup.Ainsalu@tallinnlv.ee



[Traffic Act covering use of self-driving delivery robots](#)

Starship: <https://www.starship.xyz/>
<http://www.sohjoabaltic.eu/en/>
<https://fabulos.eu/>