Press information

New technology enables all-around view

**Volvo Trucks has developed new technology which dramatically can reduce the risk of accidents caused by a limited field of vision. It enables a vehicle to do a 360 degree scan of everything in its surroundings. The vehicle evaluates information from multiple sources simultaneously, functioning much like the human mind does, and suggests actions to avoid any incidents. The technology is now in the test phase and may become reality five to ten years from now.**

The technology is the result of a unique research project called Non-Hit Car and Truck, in cooperation with Volvo Cars. For the first time ever it is possible to enable a vehicle to register and evaluate everything that is happening in its surroundings and suggest actions to avoid accidents, such as collisions with pedestrians, cyclists or other vehicles. If the driver does not respond to the suggested actions, the steering or braking system can be activated autonomously.

“Our vision for traffic safety is to have no accidents involving Volvo trucks,” says Carl Johan Almqvist, Volvo Trucks’ Traffic and Product Safety Director. “This unique technology has taken us yet another step towards our vision and will hopefully save many lives in the future.”

## Virtual co-driver

The main component in this technology is a data platform that fuses the sensory input from cameras, radars and other sensors positioned on all sides of the vehicle. It enables the truck to perform a 360-degree scan of its surroundings every 25 milliseconds. All the data input is interpreted, risk situations are analysed and different route options for the vehicle are generated. By combining several sensory systems, the technology can distinguish and identify different road users including pedestrians, cyclists, motorcyclists and other vehicles. It can sense both their distance and direction.

“The technology can predict traffic scenarios up to five seconds ahead, depending on the speed of the objects, and map out the best plan of action,” says Mansour Keshavarz, Systems Engineer at Volvo Trucks, who has worked with the technology. “In many ways the technology serves as a co-driver – but one that can see all around the vehicle. It can also alert the driver to things that are happening so that he or she can react, for example by warning with an alarm signal or braking to avoid a collision.”

## Challenges ahead

The technology is not yet ready to be applied in a commercial safety system. Compared to vehicle automation in cars, there are specific challenges to overcome when developing this type of technology for heavy vehicles.

“Trucks are a different type of vehicle and do not act the same way as cars in traffic. Each truck is loaded differently, for example, and their large size prevents them from carrying out severe avoidance manoeuvres – such as swerving quickly to avoid a collision. So it is important to research and develop technology specifically for trucks,” says Mansour Keshavarz.

Market introduction can take place within five to ten years according to Carl Johan Almqvist.

“We have the main components in place but we need to do a lot more testing in order to make sure that the system is fault-free. If we manage to solve these challenges, a future without truck accidents is within reach.”

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## Facts, the Non-Hit Car and Truck project:

* It started in September 2010 in collaboration with Volvo Car Corporation, the ÅF Group, HiQ, Mecel and Chalmers University of Technology.
* The main objective has been to develop technologies that reduce accident risks for both passenger cars and commercial vehicles, particularly focusing on situations in which today’s active safety systems are not sufficient.
* It will end in December 2014 and the results of the research will allow the development of new active safety systems which are expected to be ready for commercial introduction in trucks within 5 to 10 years’ time.

## Facts, Volvo Trucks’ current active safety systems:

* Collision Warning with Emergency Brake – an advanced emergency braking system equipped with early collision warning to help prevent severe accidents caused by inattention.
* Lane Changing Support – detects vehicles in the blind spot on the passenger’s side.
* Lane Keeping Support – monitors the truck's position on the road. When it detects the truck drifting or swaying outside its lane, a warning alerts the driver so that he or she can resume control before a serious accident takes place.
* Driver Alert Support – warns tired drivers and advises them to take a break.

For all Volvo Trucks’ films related to safety please visit Youtube: https://www.youtube.com/watch?v=dw6Kqb9t3J8&index=7&list=PL54172764AF8D100B

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