European Truck Platooning Challenge (pilot) 2016

Shipper’s viewpoint

Truck ‘platooning’ comprises of a number of trucks closely following each other. This forms a platoon with several trucks reciprocally communicating with each other. The first truck acts by taking the lead in determining speed, braking etc. while the other trucks respond automatically and simultaneously in fraction of seconds. All trucks are equipped with state-of-the-art driving support systems e.g. radars, laser sensors, vehicle-to-vehicle technology and monitoring camera’s to check traffic flows. Floating car data are transmitted via G3/4 to determine average traffic time, weather conditions, speed etc.

Benefits, shipper’s point of view, challenges and next steps ahead are described in this article. Most important challenge: platooning operators still have to employ drivers.

Why platooning?

Road transport remains the dominant mode of transport in Europe, despite modal-shift policy actions towards rail and inland waterway transport. About 70% of all transport goes by road, one third is cross-border. Meanwhile, according to Rijkswaterstaat (part of Dutch Ministry of Infrastructure & Environment) and institute TNO, congestion is set to increase by 50% by 2050.
Therefore, a first cross border truck platooning pilot was set up 6 April 2016. Truck manufacturers and road agencies were enthusiastic about the results. Six brands of trucks embarked from Scandinavia, Germany and Belgium which were operated in platoons while heading for the port of Rotterdam (APM terminal). The incoming trucks were operated by Logistic Service Providers (LSP’s) borders from the mentioned locations in Europe. All vehicles drove in their respective platoon with a distance of around 10 metres. Operations were only executed on motorways. Local conditions dictated whether or not platooning would take place on the whole route. Infrastructure and local traffic density were other indicators.

**Benefits**

Benefits are rather broad: reduced CO2 and toxic emissions; less fuel cost (5-15%); reduced congestion; greater road safety, shorter commutes. Obviously also better asset utilisation for fleet operators. From logistics point of view there seems to be cost saving potential. One could consider dedicated traffic between ports or embedded in corridors. Potential business cases including monetary benefits based on 3 scenarios are available for ESC members (p.wolters@europeanshipners.eu). The scenarios have been produced by TNO/TU Delft and are based on fuel, terminal and driver. Hints to future scenarios are included e.g. Green waves, Automated docking, Dynamically dedicated lanes, Inter-terminal transport and Alternative driver tasks.

Related inspiring freight best-practice cases can be viewed in the ESC database BESTFACT. Specifically ‘GOFER’ which is a cooperative system for freight management and regulation. This pilot analysed truck access to public transport lanes, synchronisation of green traffic lights etc. which resulted in savings in terms of reduction of driving time 40%; increased speed etc. More info: [http://www.bestfact.net/wp-content/uploads/2016/01/CL1_109_QuickInfo_GOFER-16Dec2015.pdf](http://www.bestfact.net/wp-content/uploads/2016/01/CL1_109_QuickInfo_GOFER-16Dec2015.pdf)

**Shippers as potential users**

The European Shippers Council was invited to the platooning conference (April 7) to address the users’ perspective. Multinationals (UNILEVER; AHOLD; JUMBO) joined a panel discussion. Generally the conclusion was that platooning could meet cargo owners’ requirements in certain circumstances. Take AHOLD: every 5 minutes, 7 trucks go into the same direction on a fixed location in their network.
A business case of a LSP prior to this platooning pilot proved that Distribution Centre to Distribution Centre (DC-DC) flows are ideal for platooning. On one road alone (central to regional DC), 70% of the distance could be platooned. The distance was 120 KM one way; 70% would be on major roads, while it could be engaged with cruise control. It was noted however that in these cases only trusted partners (other LSP) should be involved.

Generally shippers aim at driving less KM, avoiding transport and congestion at all, while developing parallel, alternative networks with rail and inland waterway transport. For some shippers platooning is not about platooning; it is another promising option on the ‘mobility menu’. ESC agrees with the involved research institute TNO: platooning is not a technical challenge, rather a means to enable innovation in logistics.

Let’s take a view over the fence of another shipper aiming for similar truck efficiencies, however from a different angle: ‘Transformers’. It is an original alliance among truck and trailer manufacturers (partly the same partners as in platooning pilot) including OEMs suppliers (BOSCH), truck operators (IRU) and a shipper: PROCTER & GAMBLE. Road testing is planned this summer (2016): a new truck-trailer combination that will increase efficiency up to 25% per TonKm. It combines several innovations: Hybrid on Demand; adjustable roof height; aerodynamic implements and optimised load efficiency due to adjustable shelves allowing double stacking inside the trailer.

Taking a more generic helicopter view concerning platooning, two observations can be made. Firstly, seen in transport context, it seems like the sum of typical rail system advantages combined in one road-train. Secondly, seen in a distribution context, if truck platooning would be situated to close the gap at the other side of the truck load spectrum LTL (less-than-truckload) and FTL (full-truck-load), would it become a hype such as drones on the other distribution side? Thirdly, taking a view to passenger cars; adaptive cruise control is becoming a standard feature, which is therefore comparable to truck platooning.

According to the Dutch Shippers Association (EVO), self-driving trucks means more efficient and environmental friendly freight transport. But more clarity is needed on the impact on current legislation and regulation, while cost and benefits requires more detailing.
According to the Dutch Association for Transport and Logistics (TLN), platooning will have a major impact on the organisation of the supply chain. It will make greater demands on the cooperation between the various logistic service providers. The international road union (IRU) acknowledged the crucial role of platooning in a multi-modal transport system, particularly when coupled with other operational systems.

**Challenges ahead**

Challenges ventilated at the platooning event and partly also mentioned in the ‘European Truck Platooning Challenge 2016’ booklet to be solved are situated in the area of standardisation of multi-brand truck systems; qualification of drivers; vehicle and driver registration and harmonisation of cross-border legislation.

Risks of platooning which were analysed and documented at the event were the following. Firstly: risks due to interaction with the platooning system as such with the vehicle(s). Secondly: risks due to the interaction with other road users. Thirdly: risks due to location and moment of the trial, route and place on the road.

Most important challenge: platooning operators still have to employ drivers who need to take regular resting times. Also we must not forget drivers have more (logistics) functions than driving only. Let’s also not forget the unions. If a truck is steering and braking on its own, the driver will only supervise and take the steering wheel if necessary. Is this safe? And what about the professional skills of the driver? Learning from the aviation industry, air pilot skills are negatively affected by use of automatic pilot. Unions are not in favour of changing rules around driving and rest periods. Staying alert while a driver is resting is for the unions not a realistic combination.

A participating Intermodal Operator (event April 7) had a question: what about the stability of the inside of the (various) platooning trucks carrying (different weight) cargo when sudden braking is required? According to the author of this article, planning and communication between various dispatching departments of LSP’s could deal with this issue, provided they are willing to share relevant information. Platooning ‘on the fly’ could be a next step in the future; trucks requesting to enter existing platoons on the road. This might create a new kind platooning job.
Before platoons can drive across Europe, various national vehicle and road authorities will have to provide and streamline regulations. Until recently, there were major differences in approving regulations concerning the admission of automated trucks to the public road. E.g. French law defines a safe driving distance between trucks as 50 metres; Germany uses a different kind of measurement as it enforces in driving time of two seconds.

The Dutch minister of Infrastructure and Environment (Ms. Schulz van Haegen) had one strong message concerning platooning: ‘Learning by doing’. Smart mobility, ITS and connected and autonomous driving are high on the agenda having the Netherlands in the EU Presidency of the Council of the European Union currently. An American connection was established when the minister visited several car manufacturers and GOOGLE in California to witness self-driving car developments in November 2015.

Specifically regarding the Belgian government, traffic safety was a crucial aspect for taking part in this platooning pilot. The roads in Belgium and Netherlands are very busy with many exit and access points. A working party with the (former) federal transport minister Galant produced an initial policy document with a view to testing autonomous vehicles. Also a code of conduct was produced in the context of technological innovation, social potential, traffic safety and the environment.

**Next steps**

According to the author of this article, seen the fact commercial and passenger car transport is set to grow in the years ahead, we need ‘all hands on deck’. ESC is promoting more sustainable business developments from manufacturing point of view, parallel facilitated by EU transport policies.

The Rijkswaterstaat Programme Director European Truck Platooning Challenge 2016 stated: it’s about creating new benefits for society in contributing to the MAAS concept: Mobility As A Service (www.eutruckplatooning.com).
Shippers and operators interested to investigate operations and applications for new life platooning cases can participate in an information day in the Netherlands (Rijkswaterstaat, 31-05-2016). Inquiries of ESC members, contact p.wolters@europeanshippers.eu. Most challenges mentioned in this article will be discussed, also operational issues (start-up costs) and the bigger EU perspective (TEN-T corridors). The ESC will remain in contact with the Conference of European Directors of Road as one of the main stakeholder to further outline the platooning roadmap.

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