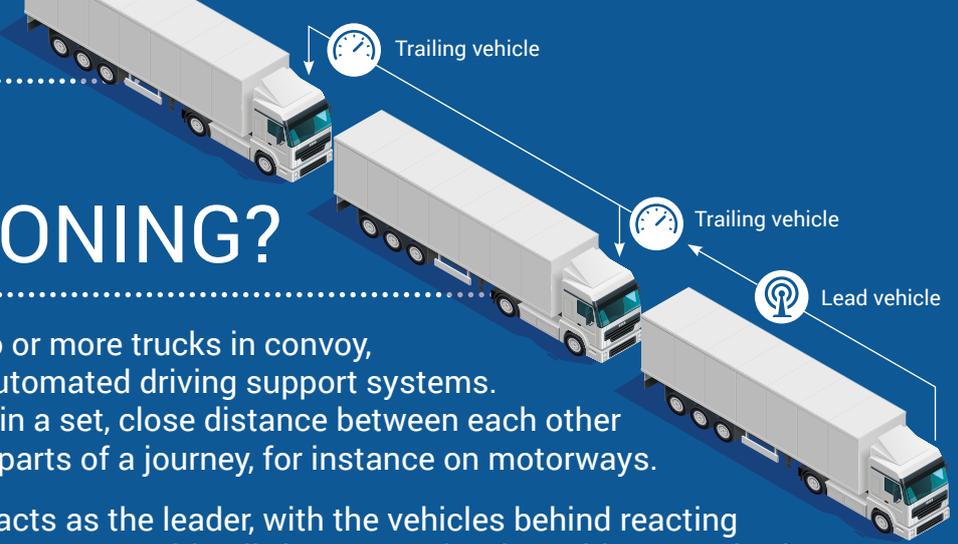


WHAT IS TRUCK PLATOONING?

Truck platooning is the linking of two or more trucks in convoy, using connectivity technology and automated driving support systems. These vehicles automatically maintain a set, close distance between each other when they are connected for certain parts of a journey, for instance on motorways.

The truck at the head of the platoon acts as the leader, with the vehicles behind reacting and adapting to changes in its movement – requiring little to no action from drivers. In the first instance, drivers will remain in control at all times, so they can also decide to leave the platoon and drive independently.



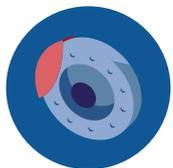
WHAT ARE THE BENEFITS OF PLATOONING?

Truck platooning holds great potential to make road transport safer, cleaner and more efficient in the future. That's why truck manufacturers are eager to bring these platoons to Europe's roads, and the first real-life tests are already underway.



CLEAN

- Truck platooning lowers fuel consumption and CO2 emissions. Given that trucks can drive closer together, the air-drag friction is reduced significantly.
- Platooning can reduce CO2 emissions by up to 16% from the trailing vehicles and by up to 8% from the lead vehicle (according to the recent ITS4CV study by Ertico).



SAFE

- Truck platooning helps to improve safety. Braking is automatic and immediate; the trucks following the lead vehicle only need one-fifth of the time a human would need to react.



EFFICIENT

- Platooning optimises transport by using roads more effectively, delivering goods faster and reducing traffic jams. The driving range of trucks can also be extended in certain situations.
- It allows drivers to undertake other tasks, such as administrative work or making calls.

HOW DO WE GET THERE?

Before platoons of trucks can become a common sight on Europe's roads, we need to:

- Further develop platooning technology and relevant standards.
- Upgrade our road infrastructure to allow for platooning.
- Develop a supportive regulatory framework with harmonised rules and exemption procedures.
- Perform joint research projects and show-case activities, for example to test cross-border platooning with multiple brands (a prerequisite for international transport).
- Gain more experience with platooning in real-traffic conditions, for example to find out how other road users react to platoons and what the optimal number of vehicles in a convoy is.
- Strengthen cooperation between all relevant stakeholders. This also includes operators of road infrastructure, logistics operators, insurance companies and policy makers.
- Get political support for promoting the wide-spread introduction of platooning, eg through incentives.

PLATOONING: STEP-BY-STEP INTRODUCTION

The technology for platooning with trucks of the same brand (so-called 'mono-brand platooning') is already available. Clearly, customers will need to be able to platoon with trucks of different brands, so the next step is to introduce multi-brand platooning (up to automation level 2 as defined by the Society of Automotive Engineers, or SAE) with the driver still ready to intervene.

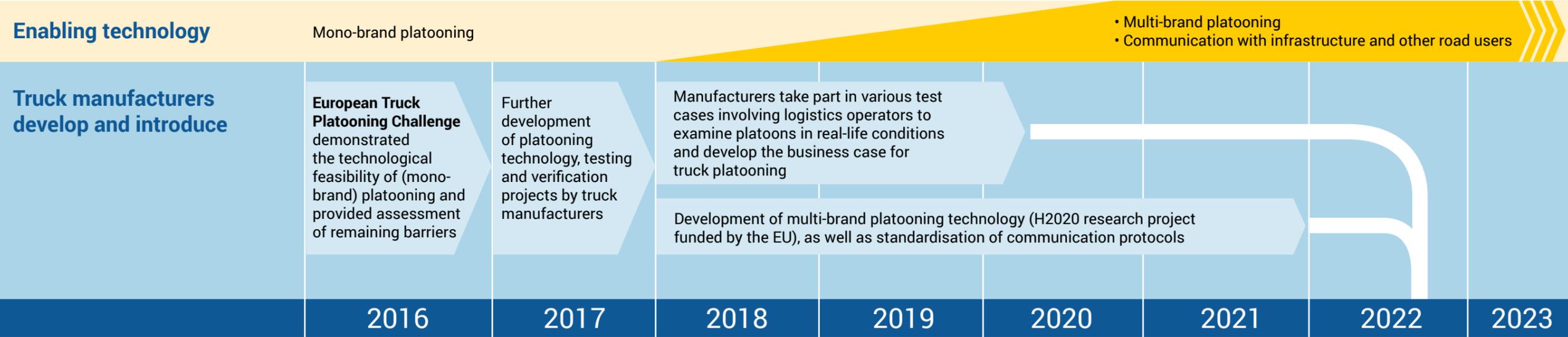
By 2023, it should be possible to drive across Europe on motorways (thus crossing national borders) with multi-brand platoons, without needing any specific exemptions. Subsequently, allowing the driver of a trailing truck to rest might come under consideration. Full autonomous trucks will only come later.



EU ROADMAP FOR TRUCK PLATOONING

This roadmap provides an overview of the steps that are necessary to implement multi-brand platooning (up to SAE level 2) before 2025. It shows when, and under which conditions, truck platooning can be introduced according to Europe's truck manufacturers, provided that certain conditions are met – some of which are beyond the control of the truck industry.

TECHNOLOGY



POLICY



THE RIGHT REGULATORY FRAMEWORK

In order to bring truck platooning to Europe's roads in the near future, we will need to build on the political momentum of the Declaration of Amsterdam and implement what we have learnt from the European Truck Platooning Challenge in 2016.

Above all, we need to create an enabling regulatory framework at both the EU and international levels. To that end, these changes will need to be made to existing rules and legislation:



REQUIRED COMMUNICATION PROTOCOLS FOR PLATOONS OF TRUCKS

-  Brake signal transmission – R13
-  Steering signal transmission – R79
-  Light signal transmission – R48, R121
-  Multi-brand data standardisation – new regulation
-  Electromagnetic compatibility (EMC) – R10
-  Platoon V2V and V2X communication

AUTOMATED COMMANDED STEERING FUNCTION (ACSF), BRAKING FUNCTIONS AND AEBs

-  ACSF – R79 or new regulation
-  Braking – R13

TRAFFIC RULES

-  Safety distance – Vienna Convention
-  Revision of all national road traffic regulations

DRIVER MONITORING

-  Somnolence / driver sentinel – new regulation
-  Event data recorder

DRIVER TRAINING

-  Driving licences – Directive 2006/126 EC

SIGNALLING AND ROAD MARKINGS FOR PLATOONS

-  Road signs – Regulation (EC) No 1071/2009
-  Vehicle signs (HUD/HMI) – R121 GRSG
-  Direct/indirect visibility – R46
-  Other users signalling – R48 or new regulation

ADDITIONAL REQUIREMENTS FOR PERIODIC TECHNICAL INSPECTIONS

-  Technical roadside inspection of roadworthiness commercial vehicles
-  R13, R48, R79, R89, R116, R121, R130, R131
-  Directive 2000/30/EC
-  1997 Agreement

TYPE APPROVAL

-  Targets to be defined for type approval
-  Platooning engagement/disengagement rules (split and merge)
-  New regulation for platooning components/ systems on trucks

Finally, it will be imperative that governments introduce incentives, such as toll and tax reductions, CO2 bonuses or flexibility in driving time, to stimulate the market uptake of truck platooning.

TRUCK MANUFACTURERS WILL CONTRIBUTE BY:

- Further developing platooning technology and its practical applications, including communication standards for multi-brand truck platooning.
- Providing the necessary technical expertise for the regulatory process that should enable cross-border truck platooning on a normal basis.
- Investigating the conduct of platoons in real-traffic conditions on EU motorways through joint efforts, as well as identifying the advantages and risks associated with this.
- Performing large-scale demonstrations, with the support of the EU institutions, national authorities and other stakeholders.



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