CLEPA
European Association of Automotive Suppliers
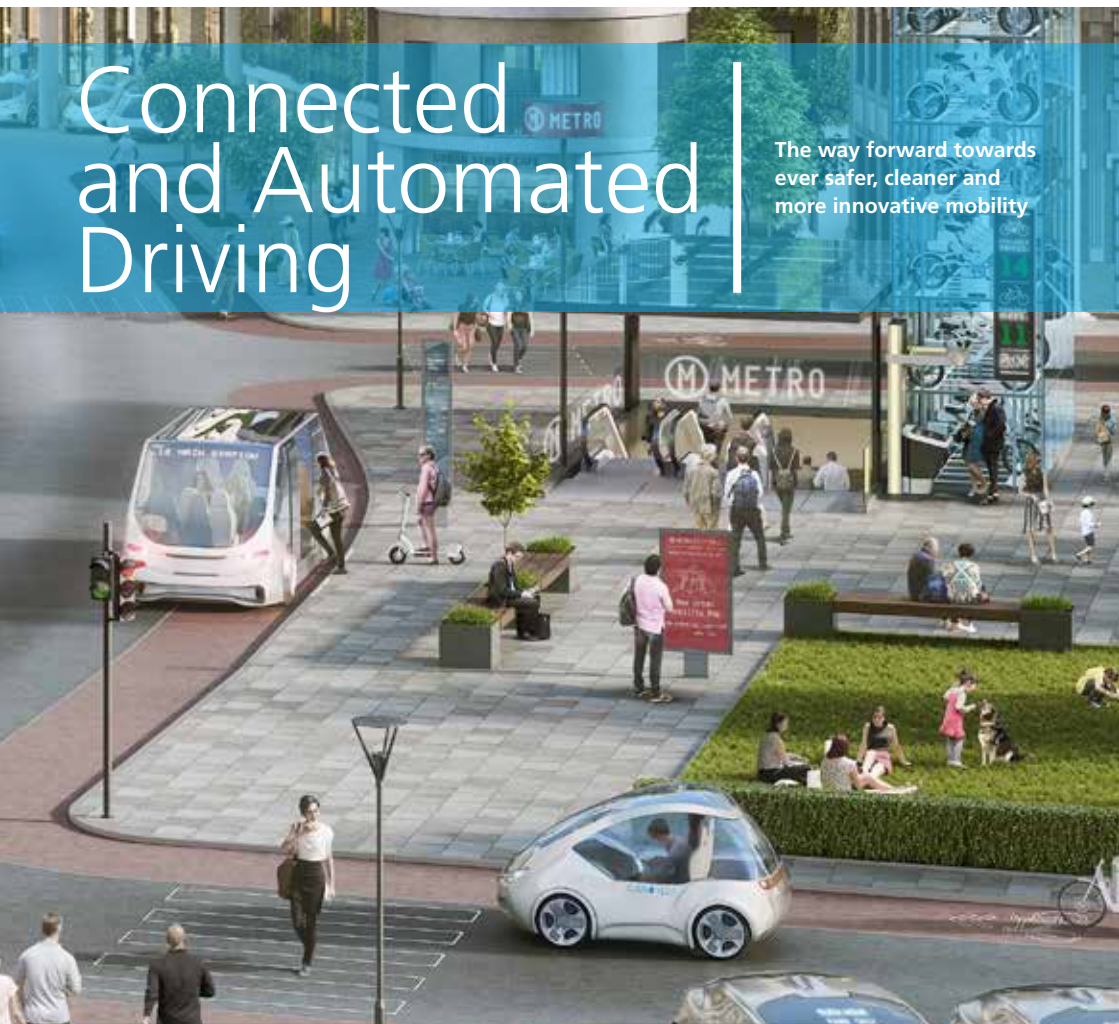

Connected and Automated Driving

The way forward towards ever safer, cleaner and more innovative mobility

What is CLEPA?

CLEPA - the European Association of Automotive Suppliers - brings together over **120 global suppliers** of **car parts, systems** and **modules** and more than **20 national trade associations** and European **sector associations.**

What does CLEPA do?

CLEPA is **the voice of the EU automotive supplier industry,** linking the sector to policy makers.

Why do we need connected and automated driving?

With more than **90% of all road accidents** caused by **human error,** connected and automated driving promises to bring huge safety benefits on our roads.

What are connected vehicles? These are vehicles capable of communicating with other vehicles or the infrastructure. The **advantages** are:

Enhanced safety
extensive monitoring road network, vehicle status and driving conditions

Advanced navigation options

Increased fuel and cost efficiency

Onboard ePayment and eWorking

Advanced onboard entertainment

What are automated vehicles?

These vehicles are equipped with technology, enabling the computer system to take over certain driving tasks from the driver.

What are autonomous vehicles?
These vehicles can perform all driving functions without any human intervention.

Levels of automation

	SAE Level	Name	Steering, acceleration, deceleration	Monitoring driving environment	Fallback performance of dynamic driving task	System capability (driving modes)
Human monitors environment	0	**No automation:** The full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or intervention systems.				n/a
	1	**Driver assistance:** The driving mode-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the exception that the human driver perform all remaining aspects of the dynamic driving task – timeline: completed.				Some driving modes
	2	**Partial automation:** The driving mode-specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task – timeline: 2015-2017.				Some driving modes
Car monitors environment	3	**Conditional automation:** The driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task with the expectation that the human driver will respond appropriately to a request to intervene – timeline: 2017-2025.				Some driving modes
	4	**High automation:** The driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task, even if a human driver does not respond appropriately to a request to intervene – timeline: 2025-2030.				Some driving modes
	5	**Full automation:** The full-time performance by an automated driving system of all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver – timeline: 2030 onwards.				All driving modes

Source: Automated and Autonomous Driving, OECD/ITF, 2015 (adapted from SAE Standard J3016, SAE International 2014).

The **advantages** of Automated and Connected Driving are:

Increase in road safety and decrease in casualties/ fatalities

Higher efficiency in terms of traffic flow (less congestions) and fuel management/ CO_2 output

More onboard free time and comfort for driver

Insurance fees should go down

Better mobility, including for disabled and ageing persons

Creation of new transport services

What are the challenges?

Legal framework for road safety, both on international and national level, should be adapted:
- appropriate safety needs;
- testing of vehicles;
- traffic regulations;
- driver training.

Technical standards and appropriate infrastructure need to be agreed:
- type approval and technical inspection;
- digitalisation of maps and road signs;
- connectivity system between vehicles and infrastructure.

Reach consensus on Data Processing:
- control and management of the collected data;
- respect law on data privacy;
- standardise and enhance cyber security, making sure no vehicles would be hacked.

Liability issues:
- Decide who will be responsible in which conditions and situations.

Which are the relevant regulatory frameworks?

EU:
- Directive 2006/126 on driving license.
- Insurance, liability and defects: national rules, Directive 2009/103 (Motor insurance Directive) and Directive 85/374 (Product liability Directive).
- Vehicle approval, road-worthiness: Directive 2007/46 on vehicles type approval, Directive 2014/45 (Road-worthiness Directive) and national legislation.
- Connectivity, data protection and cyber security: national laws, ITS Directive 2010/40, Directive 65/46 on data protection, Directive 2002/58 on privacy in electronic communications.
- Infrastructure: national laws and Directive 2008/96 on infrastructure safety management.

International: International governance: United Nations Economic Commission for Europe (UNECE), the Working Party on Road traffic safety (WP1) and the World Forum for Harmonization of Vehicle Regulations (WP 29).
- Traffic rules: Vienna Convention on road traffic of 1968 + Geneva Convention 1949.
- Technical requirements of motor vehicles and type approval: UNECE 1958 Agreement and UNECE 1998 Agreement.
- PTI: Periodical Technical Inspection: UNECE 1997 Agreement.

How does the EU support connected and automated driving?

GEAR 2030: Debates between January 2016 and October 2017 the main challenges for the automotive industry in the next 15 years and will make recommendations to reinforce the competitiveness of the European automotive value chain. It will in particular consider a roadmap for the smooth rollout of autonomous vehicles. The group will analyse and discuss the key trends which will be affecting the automotive industry in the future and come up with jointly agreed roadmaps that should set objectives, specify milestones and clearly define responsibilities of different stakeholders. The GEAR 2030 High Level Group will focus on three areas of work: the automated and connected vehicles, the adaptation of the value chain to new global challenges trade, international harmonisation and global competitiveness.

CARS 2020: To reinforce the industry's competitiveness and address climate, environmental, and societal challenges, the European Commission adopted the CARS 2020 Action Plan in 2012. The plan is built around four main areas:financing innovations improving market conditions facilitating internationalisation responding to change.

Connected Automated Driving.eu: The European Commission places a high priority on the deployment of automated road transport. It has set up two projects that work together with a broad range of international stakeholders to ensure that these technologies are deployed in a coordinated and harmonised manner, which will accelerate the implementation of safe and connected automated driving in Europe.

SCOUT (Safe and COnnected AUtomation in Road Transport): SCOUT brings together the automotive - including CLEPA-, telecommunications and ICT industries to conceive use cases and business models to leverage the investments into technology development.

CARTRE: CARTRE brings together more than sixty organisations - including CLEPA - with view to consolidate the current industry and policy fragmentation surrounding the development of automation in road transport.

EATA: The European Automotive Telecom Alliance comprises six sectorial associations: ACEA, CLEPA, ETNO, ECTA, GSMA and GSA and was a follow-up of the High Level Structural Dialogue on Connected and Automated Driving. Together they represent 38 leading European companies, including telecom operators, vendors, automobile manufacturers and automotive suppliers. The main goal of this Alliance is to promote the wider deployment of connected and automated driving in Europe. The first concrete step is the advancement of a "Pre-Deployment Project" aimed at testing three major use-case categories, albeit with exact details still to be decided: Automated driving — could include high-density platooning, remotely controlled parking, highway chauffeur and high-definition maps; Road safety and traffic efficiency — could include traffic optimisation for smart cities; Digitalisation of transport and logistics — could include remote sensing and data management.

Which initiatives from CLEPA members are on the market and in the pipeline?

On the market today:

Front collision warning

Lane change assistant

Lane departure warning

Park assist

Adaptive cruise control

Automated parking

Traffic jam assist

In the pipeline, between 2017 and +2030:

- Traffic and highway chauffeur
- Platooning for trucks
- Parking garage pilot
- Urban highway pilot
- Vehicle with higher automated levels

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