European Association of Automotive Suppliers

POSITION PAPER

Artificial Intelligence

For a coherent regulatory framework that ensures safety and trust

Contents

Executive Summary

Artificial intelligence (AI) applications are becoming more commonly integrated in vehicles: automated driving is the most well-known example, but a broad range of other applications are also being used, such as many vehicle safety functions, comfort functions, advanced driver-assistance systems, connectivity systems, infotainment systems, and others.

CLEPA believes that **an appropriate legislative framework can boost the development and uptake of AI** by providing market participants more legal certainty and by bolstering consumer trust. **We support a risk-based approach as outlined in the Commission's White Paper** on AI as it is more likely to ensure proportionality. In this respect, the term "high-risk" should be defined clearly. From our perspective, an AI application should be considered high-risk if it can cause personal injury or death.

CLEPA stresses the importance of **not hindering innovation unnecessarily**. Requirements should always remain proportionate to the risks and leave enough room for testing/prototyping. A balance must be achieved to ensure that the goals of this new initiative do **not jeopardise the development of safer vehicles**, given the contribution they can make to the EU's road safety objectives.

CLEPA supports a **horizontal AI legislation** addressing only high-risk AI applications and ensuring a level-playing field for all actors. These principles can be **complemented with technical requirements in sector-specific regulations** (either new or by modifying existing legislation), if deemed necessary.

The automotive sector is already subject to strict ex-ante conformity controls, such as the type-approval process. High-risk AI-related technical requirements for automotive products should be implemented into the existing sectoral framework. **Certification, testing, and market surveillance should not be duplicated,** to avoid additional costs, administrative burdens, or any risk of inconsistencies.

Workstreams should be coordinated to avoid duplication and/or conflicting requirements. Discussions on automated driving are ongoing at the UNECE, where the EU, represented by the Commission, is taking a leading role. The EU itself is also looking into automation regulation, in the Commission's Motor Vehicle Working Group (MVWG). The EU legislative framework on AI and the UNECE requirements for Automated Driving Systems should be aligned, with future UNECE requirements to be considered valid AI-related requirements, instead of another added regulatory layer.

Background

When taking office in 2019, European Commission President Ursula von der Leyen promised that she would propose a so-called **AI law** to ensure citizens' trust in artificial intelligence. In February 2020, the Commission published its "**White Paper on Artificial Intelligence – A European approach to excellence and trust**,[1]" which outlined its policy approach and looked into several regulatory options. A **legislative proposal** is now expected for the beginning of 2021, which will likely impact the automotive sector. The present position paper outlines the views of automotive suppliers with regards to this upcoming new regulatory framework.

1 https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf

1. What is AI and how is it used in automotive?

CLEPA is the voice of the automotive supply industry in the EU. An average passenger car is made up of around 30,000 parts, which together represent approximately 75% of the vehicle's total value.

Suppliers provide all type of vehicle parts and components, including powertrain, chassis and frame, brakes, lighting, interior, electronics, sensors, chips, and software.

Therefore, automotive suppliers play a central role in the development of connected and automated vehicles, into which AI applications are increasingly being integrated. **Automated driving is of course the most well-known example of AI use in automotive, but a broad range of other applications are also applicable**, such as many vehicle safety functions, comfort functions, advanced driver-assistance systems (ADAS), connectivity systems, and infotainment systems.

In addition to their integration into automotive products, AI can also provide significant benefits to the **manufacturing and assembly** of these products. By streamlining or automating certain processes and by assisting human decision-making in day-to-day operations, AI can deliver enormous benefits to supply-chain and logistics operations (cost savings through reduced redundancies and risk mitigation, improved forecasting, faster deliveries through more optimised routes, improved customer service...).

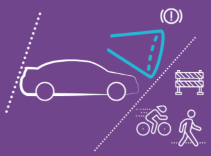
However, the present paper will focus on AI applications used in the automotive products themselves.

Automotive suppliers play a central role in the development of connected and automated vehicles

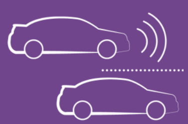
"Artificial intelligence" refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, can act in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems), or can be embedded into hardware devices (e.g. advanced robots, automated vehicles, drones, or Internet-of -Things applications). The term AI therefore covers a very large field of research, with **many different technological subsets and varied applications**.

Automotive applications of artificial intelligence

There are many ways in which AI is already being used in the automotive sector to make vehicles safer, more comfortable, and more automated, by analysing sensor output. AI can also be used to make decisions or to give suggestions. Here are just a few examples of practical implementations, most of which are already deployed in some vehicles and have demonstrated their safety:

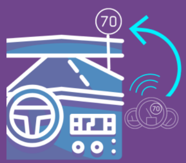


Advanced emergency braking systems: recognising obstacles (pedestrians, cyclists, other vehicles...) and applying pressure on the brakes in order to prevent a collision.



Adaptive cruise control: detecting the vehicle ahead on the road and adjusting the vehicle's speed to maintain a safe distance from it.

Lane keeping systems: detecting lane markings and when the vehicle is moving out of its lane involuntarily, to automatically readjust the vehicle's position.



Intelligent speed adaptation: detecting and identifying speed limits from traffic signs and displaying these on the dashboard, or even automatically adjusting the vehicle's speed.

Drowsiness and awareness monitoring: detecting whether the driver is falling asleep (e.g. drooping eyelids, blink rate) or distracted (e.g. face turned towards a passenger or phone), using interior cameras and sensors, in order to issue a warning and apply an appropriate intervention.

Sun visor: detecting the position of the drivers' eyes in order for an adaptive sun visor to cast shadow only on the eyes while minimising visual obstruction.

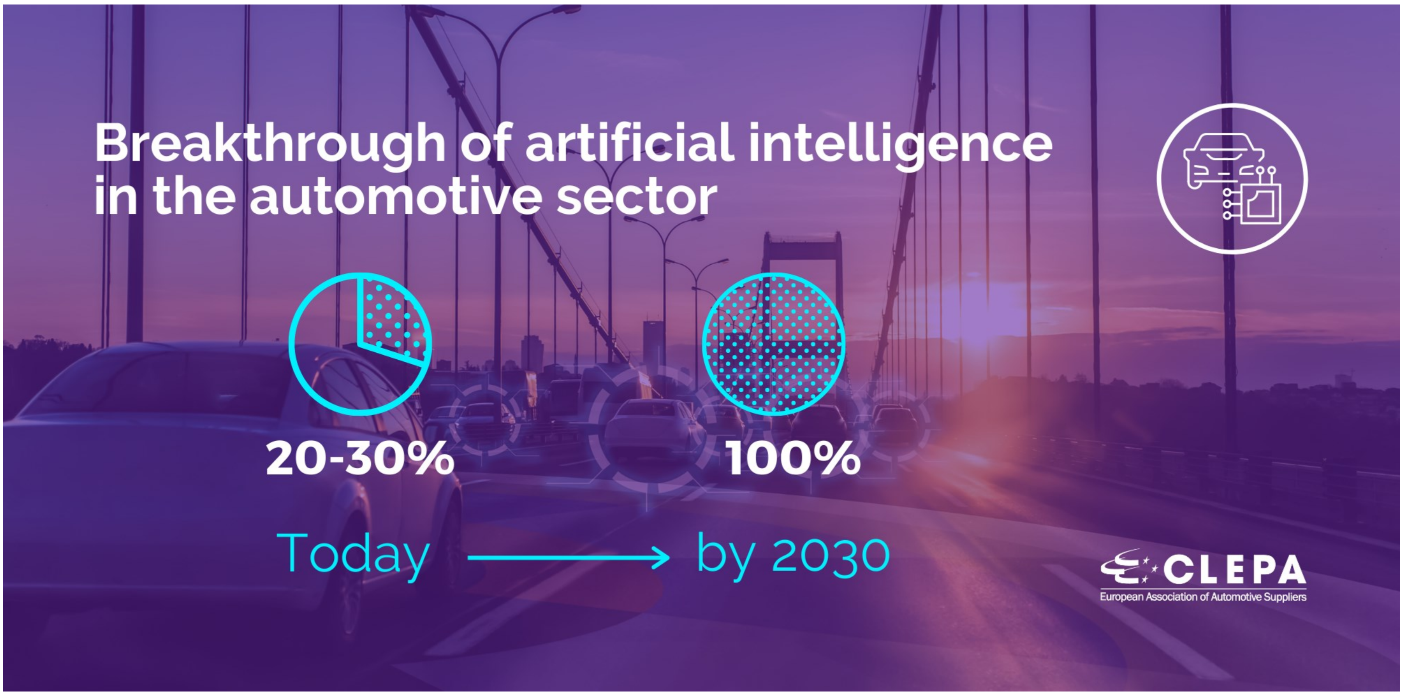
Facial recognition: detecting and recognising the driver's face to ID them and unlock the vehicle, similar to some smart phone devices.

Climate control: recognising passengers' preferences and automatically adapting the vehicle's inside temperature.

Infotainment: identifying the driver's music preferences and determining the ideal playlist, or suggesting movies or programs that passengers may be interested in on their video players, based on previously played music tracks or videos.

In the automotive sector, AI applications are often based on machine learning algorithms. Machine learning is a subset of AI that builds a mathematical model based on sample data, known as "training data," in order to make predictions or decisions without being explicitly programmed to do so. As an example, machine learning can be used for recognising traffic signs: the computer system is trained with images of traffic signs until it starts to discern recurring patterns across these images, thus allowing it to then accurately detect and identify traffic signs in the real world. More details and examples on the subsets of machine learning AI can be found in Annex 2.

Given the complexity and diversity of AI, we recommend that the Commission be more specific in its definition of "artificial intelligence." **How AI is defined will have a significant impact on the scope of the upcoming legislative framework.** Therefore, the Commission should ensure proper consultation of both experts and economic actors. Similarly, **the Commission should consider differentiating between different subsets of artificial intelligence**. Each type of technology presents different kinds of risks, which should be taken into account when designing the legislative framework. **For our sector, we believe that the upcoming regulation should focus on machine learning.**



2. Opportunities and challenges of artificial intelligence

Automotive suppliers support the Commission's objective of setting up a transparent, technology-neutral, and risk-based regulatory framework for artificial intelligence

Artificial intelligence has raised numerous concerns among citizens, who fear that algorithms may threaten their privacy, reinforce and amplify societal biases, thus leading to discrimination, or take important decisions for them, reducing the control they have over their lives. While these fears are sometimes justified, we believe that automotive applications of AI do not typically endanger fundamental rights. Instead, **the major challenge for AI in our sector is safety**.

To ensure citizens' and consumers' trust in automotive AI, CLEPA believes that ensuring safety is critical. This is especially true in the context of automated driving, where **people need to trust the decisions taken by their vehicle** before they can accept to progressively relinquish control. Prototypes already exist, but fully automated cars are still years away. For them to become a reality, technical hurdles are not the only challenge to overcome: building trust is just as important.

Automotive suppliers invest heavily into AI and related technologies for automated driving. The key goal being to make vehicles safer and to work towards the EU's "Vision Zero"[2] objective, which CLEPA fully supports. **If citizens are not convinced of the benefits of automated driving, and do not feel automated vehicles are trustworthy, this will undermine progress towards eliminating road casualties.** For this reason, automotive suppliers support the Commission's objective of setting up a transparent, technology-neutral, and risk-based regulatory framework for AI. This framework should set up common minimum principles.

On the other hand, we also believe that **innovation should not be hindered unnecessarily**, as inhibiting innovation would only slow down progress towards Vision Zero. **Regulatory requirements should always remain proportionate to the possible risks** and leave room for testing and prototyping. Several EU Member States rightly stated in a "non-paper"[3] that burdensome barriers and requirements can be a hindrance for innovation and should be avoided.

2 https://ec.europa.eu/transport/themes/strategies/news/2019-06-19-vision-zero_en
3 https://www.permanentrepresentations.nl/binaries/nlatio/documents/publications/2020/10/8/non-paper---innovative-and-trustworthy-ai/Non-paper+-+Innovative+and+trustworthy+AI+-+Two+side+of+the+same+coin.pdf

In addition, a balance must be achieved to ensure that the upcoming regulatory framework on AI will **not jeopardise the global R&D's contribution to safer and more sustainable vehicles**. The automotive sector's value chain is global, therefore CLEPA supports technically justified requirements, which do not discriminate against AI developed in non-EU countries.

Another major challenge identified by policy makers is the **"black box" nature of artificial intelligence**, whereby the logic behind specific decisions taken by AI algorithms may be unknown, or too complex for a human being to comprehend. The two main issues in this regard are **safety and liability**.

- From the **safety** perspective, the lack of transparency of AI decision-making could make it difficult to understand why an accident occurred and, if the accident was caused by a defect, to identify and fix the problem.
- As for **liability**, the lack of explainability behind AI decisions could make it difficult to determine which human action may be responsible for harm, and consequently assign liability and determine adequate compensation to the victims.

In reality, however, **this "black box" issue is not specific to AI or machine learning**, but is already present in many areas. Existing, non-AI software can also be difficult to understand, and their output can similarly be hard to explain. For example, many modern software are made up of millions of (human-written) lines of code. They are not AI and yet extremely complex.

As far as safety is concerned, regulation should instead focus on defining what acceptable safety standards are

CLEPA agrees that ensuring a transparent way of assessing the decision-making of an automated driving system is important. Nevertheless, **automotive suppliers do not believe that regulation should prescribe any technology or mandate the full disclosure of the AI algorithms' details**. For example, the validation of complex systems can be achieved through systematic unit, coverage, load, and integration tests, without necessarily reading the source code.

As far as safety is concerned, rather than requiring algorithms to be fully disclosed, **regulation should instead focus on defining what acceptable safety standards are**. AI products would then have to demonstrate through testing that they reach these standards. For example, by ensuring robust pre-market certification tests, there is less need to explain why an automated driving system made certain decisions, only that it made the right decisions. It is possible to develop KPIs that ensure sufficient coverage and representativeness of a limited number of traffic scenarios.

As for explaining how a particular decision was taken, which may be important for liability purposes, **this can be inferred ex-post from a combination of elements** which include the datasets that were used to train the AI, the output from scenario-based testing, and event data recorders inside the vehicles (the latter are already set to become mandatory by 2024).

3. Regulatory approach

CLEPA welcomes the Commission's White Paper on AI. An appropriate legislative framework can boost the development and uptake of artificial intelligence in the EU

Regulation should be risk-based

CLEPA welcomes the Commission's White Paper on AI. We believe that an appropriate legislative framework can boost the development and uptake of AI in the EU, by providing market participants more legal certainty, and by bolstering consumer trust in AI products.

Similar to the method outlined in the White Paper, **we support a risk-based approach to regulation**, whereby only the AI applications identified as high-risk would be subject to mandatory ex-ante requirements. In this respect, the term "high-risk" should be defined clearly. From our perspective, an AI application should be considered high-risk if it can cause personal injury or death.

There are **many automotive AI applications whose use or purpose do not pose risks**. Comfort functions, infotainment applications, ADAS warnings, or low levels of driving automation, for example, should not be subject to the strict requirements of high-risk applications, since these applications always leave the driver in primary control.

Technical requirements should be defined at the sectoral level

CLEPA supports a **horizontal AI legislation** addressing only high-risk AI applications, as this would increase trust in AI as a technology and ensure a level-playing field for all market players. These principles can be **complemented with technical requirements in sector-specific regulations** (either new or by modifying existing legislation), if deemed necessary.

The automotive sector is already subject to strict ex-ante conformity controls, such as the type-approval process. Essentially, vehicles cannot be placed on the EU market unless they demonstrate (through testing and conformity assessments) their compliance with a large number of technical standards designed to ensure safety and environmental performance. High-risk AI-related technical requirements for automotive products should be implemented into the existing sectoral framework. It is of paramount importance that **certification, testing, and market surveillance are not duplicated**. This would otherwise create additional costs, administrative burdens, and create a risk of inconsistencies.

In addition, the new AI requirements should **take into account the development cycle length of automotive products**. Vehicles with automated functions that will be on the roads in the next few years are already being trained now. Manufacturers need to be given a suitable timeframe to comply with any new requirements.

Workstreams should be coordinated to avoid duplication and/or conflicting requirements. Discussions on automated driving are already ongoing at the UNECE, the UN body which develops many of the vehicle technical standards that apply in the EU, and in the Commission's MVWG. In addition, the recently revised General Safety Regulation (GSR) also made a number of safety measures mandatory, some of which may rely on AI: the delegated and implementing acts that will set the technical requirements for these measures are currently being drafted. **The EU legislative framework on AI and the UNECE requirements for Automated Driving Systems (ADS) should be aligned**, and future UNECE requirements should be considered valid AI-related requirements, rather than adding another regulatory layer.

Voluntary labelling

In its White Paper, the Commission suggested introducing a voluntary labelling scheme for non-high-risk AI applications. While a such labelling scheme could, in principle, be a useful addition, CLEPA considers it **difficult to support such a scheme without clarification on how it would be implemented in practice**. Transparent rules and metrics based on international standards should first be agreed upon.

Implementing AI-related technical requirements into the existing vehicle type-approval framework will avoid duplicating certification, testing, and market surveillance

4. Liability for artificial intelligence

It is important that any liability framework strike a balance between efficiently protecting potential victims of damage while also granting enough leeway for the development of new technologies, services, and products

Liability is an essential principle for both citizens and economic actors. It ensures that a person who has suffered harm is entitled to claim compensation from the person proven to be liable for that harm. It also creates an economic incentive to avoid causing harm in the first place, while providing a degree of legal certainty for economic players. Therefore, it is important that any liability framework strike a balance between efficiently protecting potential victims of damage while also granting enough leeway for the development of new technologies, services, and products.

The existing liability framework can already address AI

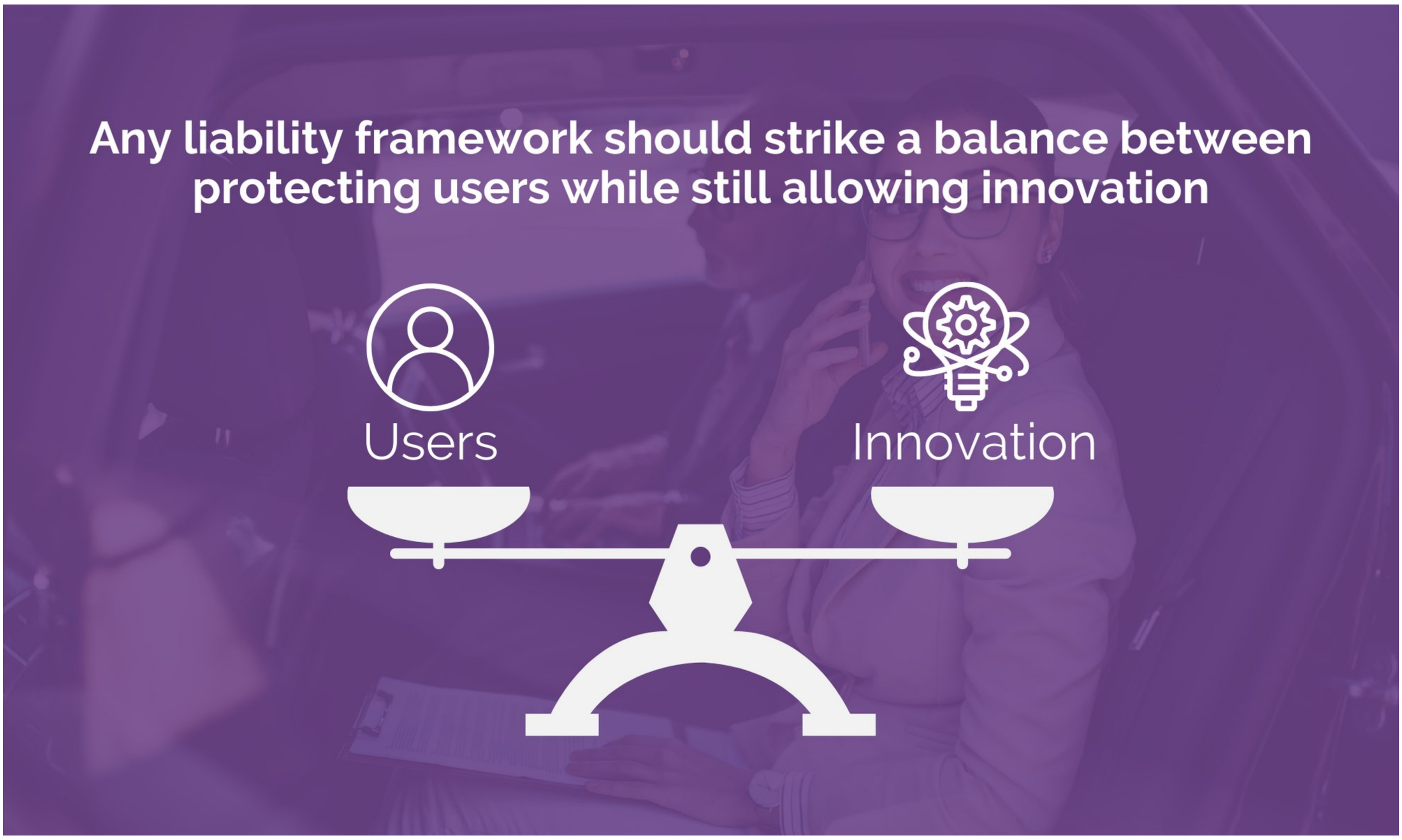
Even though AI systems and applications are posing new legal challenges to the existing liability regime, they are not so different to other technologies, which are sometimes based on even more complex software. This means that these new legal challenges do not require major changes to be made to the liability framework. From our point of view, **the current EU legislation on security, liability, and responsibility is effective and does not need to be fundamentally altered for artificial intelligence**.

The Product Liability Directive (PLD), in particular, already provides a sound legal basis to address consumer protection and may therefore serve as a foundation for discussions and evaluations with respect to effective consumer protection and compensation for AI products. Furthermore, there has not been any concrete evidence so far that harm caused by AI applications cannot be compensated for using the existing framework.

The PLD covers compensation for damages resulting from defective products, irrespective of whether the product comes with or without AI technology. This makes perfect sense since, **from a product liability perspective, the decisive point is whether a product provides the safety a person is entitled to expect, and it is not necessary to distinguish between technologies** used within the product in question. Therefore, it should not make a difference whether a product comes with AI or not. Both scenarios are already well covered by the PLD as it stands today.

Consequently, automotive suppliers believe that **any revision of the current EU legislation should be assessed carefully**. The review should focus on whether, and to what extent, AI applications and their specificities are addressed by the current liability framework. Amendments should be limited to providing legal clarity only where the wording does not properly reflect today's digital realities. For example, **CLEPA supports clarification of the term "product" as used in the PLD**, given that its interpretation sometimes varies in Member States on whether it covers services. Explicitly broadening the definition of the term "product" to include embedded software would allow for liability claims if any relevant automotive product has not complied with or neglected safety standards and other state-of-the-art requirements and, in doing so, did not comply with justified safety expectations of the end user, and as a result damage has been caused.

There has not been any concrete evidence that harm caused by AI applications cannot be compensated for using the existing framework



CLEPA believes in the principle that every market participant whose product is making use of AI technology must ensure the technology is reliable, comprehensible, secure, and safe – to the extent that it can be reasonably expected from the market participant's product, and according to the specified use of the product and application (intended use as specified by the producer). This also means that if an AI application is misused or used outside of the scope defined by the producer, the producer or operator should not be held liable.

AI applications and modern software do not have a limited range of use, as opposed to classical hardware-based products. Thus, AI-based applications may be used in a way not specified by the producer or may be misused in a way neither intended nor foreseeable by the producer. Therefore, in such situations, when the specified use is clearly stated, producers must be afforded the certainty that the use they intended when designing the product is not altered by the user in an inappropriate way or for a malicious intent.

An additional strict liability regime specific to AI is not necessary

Against the background of the considerations above, and given the fact that vehicles are already covered by strict liability rules and mandatory insurance, CLEPA advocates for a careful and narrow review of the existing product liability regime, which should in principle cover all AI applications.

CLEPA is not favourable to a concept of general AI deployer liability, even if limited to high-risk applications. However, should the EU envisage a discussion on strict liability in this context, exceptions (such as force majeure, contributory conduct, or adversary attacks) to the liability of the deployer should be considered. With regards to the definition of "high risk" in this context, automotive suppliers would prefer that **existing sector requirements (i.e. automotive) continue to apply** and evolve, instead of creating a separate system of "high-risk" applications that would be governed separately under different rules, and may conflict with existing sector-specific rules. Therefore, **any legal act defining high-risk applications should also mention, where applicable, sectoral legislation** (for instance the type-approval framework for motor vehicles).

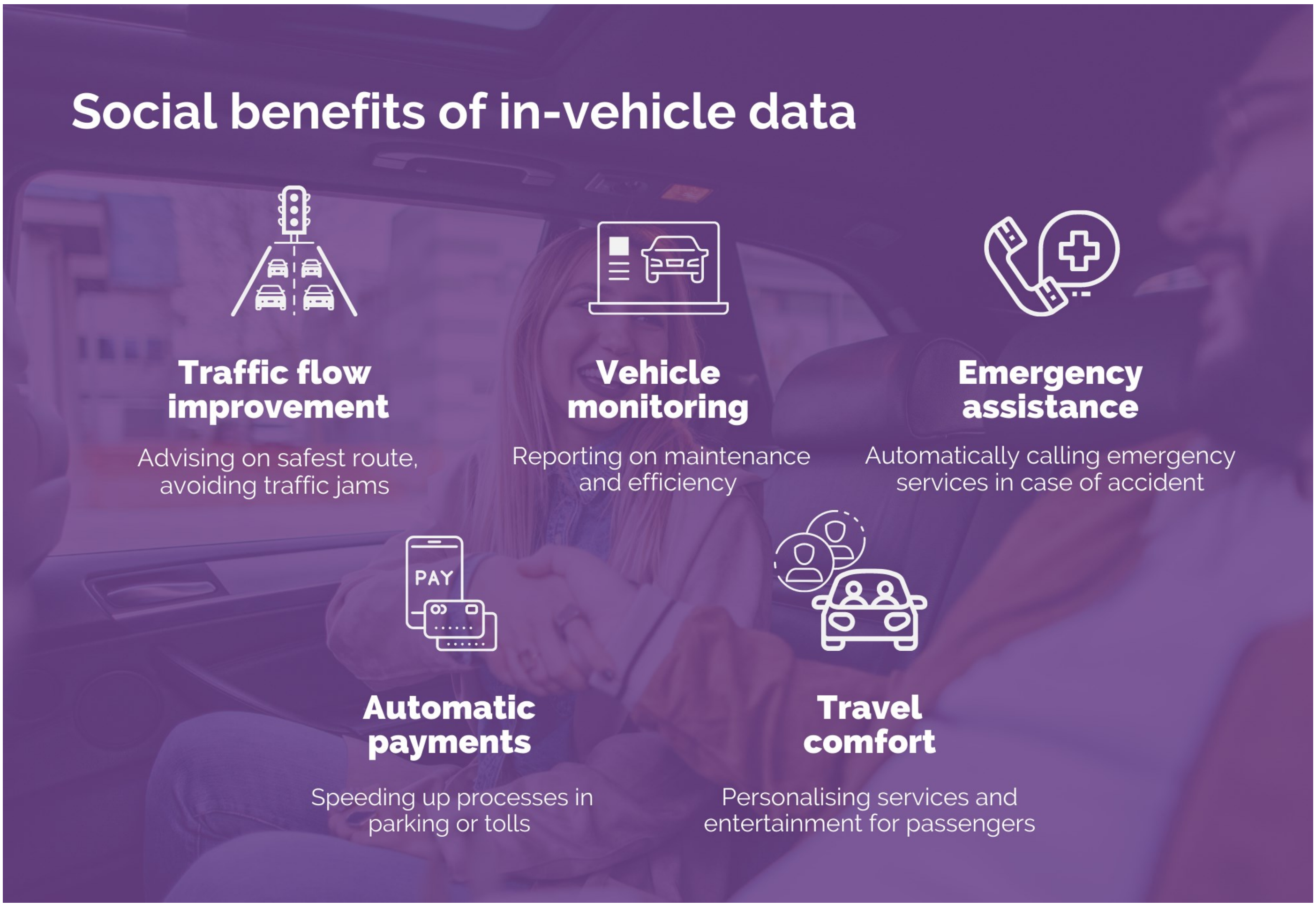
Similarly, **we urge policy makers to consider with great caution any proposal aimed at reversing the burden of proof**. It is a central principle for many national jurisdictions in the EU that the bases of a claim must be proven by the plaintiff. While there are exceptions to this principle, those exceptions are limited to very restricted scenarios and subject to a narrow interpretation. In the field of AI, we do not see the legal need for the creation of another exception to this legal principle of fundamental importance to our legal order.

5. Artificial intelligence and data

The use of in-vehicle data is one of the main drivers for the creation of new and innovative mobility services. It can also bring significant improvement to existing services, such as repair and maintenance

Without data, the development of AI and other digital applications is impossible. Machine learning systems, for instance, "learn" to recognise patterns, clusters, or anomalies by processing training data. The more training data with which the system is provided, the more precise and accurate the system can become. **Data is the lifeblood of AI**, meaning improved access to and the management of data is fundamental.

CLEPA fully supports the Commission's objective of improving data flow within the EU, as outlined in the European strategy for data[4], to foster a new ecosystem of products and services which can make use of this data. As the Commission correctly identified, the automotive sector is also subject to market power imbalances in relation to access to and use of data.



Currently, in-vehicle data is controlled and exploited commercially by vehicle manufacturers. Other market participants, such as automotive suppliers, but also independent repair shops, insurance companies, or parking space providers depend on vehicle manufacturers to make data available and are therefore in a disadvantageous position.

The use of in-vehicle data is one of the main drivers for the creation of new and innovative mobility services[5]**.** It can also bring significant improvement to existing services, such as repair and maintenance. For a competitive market to be created for the benefit of businesses and consumers, access to raw data from connected vehicles needs to fulfil several **key technical criteria**: **independent and unmonitored access** to vehicle data and resources, **all technically available, non-processed vehicle data** must be included, and **third parties must be allowed to process data in the vehicle and to interact directly with the driver**. More details can be found in CLEPA's position paper on access to in-vehicle data and resources[6].

The more training data with which the system is provided, the more precise and accurate the system can become. Data is the lifeblood of AI

While CLEPA advocates for a better flow of industrial data for commercial purposes, we also recognise the right of individuals to decide what is done with their personal data. Automotive suppliers are committed to respecting the European principles outlined in the General Data Protection Regulation (GDPR) and the ePrivacy Directive. For that reason, **we would welcome clarification from the Commission on how these principles should be applied in conjunction with the requirements for high-risk AI** presented in the White Paper. For example, the requirement of keeping records of data used for training AI systems could potentially conflict with the GDPR's limits on data retention. It should be ensured that new potential requirements do not overlap with existing requirements, as underlined by the non-paper mentioned before.

Would like to know more? You can contact CLEPA's Policy Manager | Government Affairs **William Moreau** at w.moreau@clepa.be

4 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0066&from=EN
5 For example: remote diagnostics and prognostics, service appointments from the dashboard, software updates over the air, car sharing functions, delivery to the trunk, parking, or even payment services where the vehicle pays bills in parking garages or at fuel stations via a connectivity-based app.
6 https://clepa.eu/wp-content/uploads/2019/10/CLEPA-Position-Paper-Access-to-Data-vF.pdf

Annex 1: Table on AI subsets and automotive applications

		Definitions		
		Artificial Intelligence (AI)	**Machine Learning (ML)**	**Supervised Learning (SL)**
Types of AI		AI refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems), or AI can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones, or IoT applications).	ML is a subset of AI that builds a mathematical model based on sample data, known as "training data," in order to make predictions or decisions without being explicitly programmed to do so. ML algorithms fall into one of three broad families: supervised learning, unsupervised learning, or reinforcement learning.	SL is a subset of ML which uses training data that has been labelled by humans. The algorithm ingests this data and builds a model that allows it to accurately replicate a label for new data that was not part of the training set.
Non-safety functions e.g. infotainment, climate control		**Out of scope (not high-risk)** Examples of applications: **Natural language processing*		**Out of scope (not high-risk)**
Automated driving functions	**Perception**	**Out of scope (requirements should target ML and its subsets instead of AI)** Examples of applications: **Detection of other road users for AEBS, ACC* **Detection of road infrastructure for LDW, LKAS*		Examples of applications: **Detection of other road users for longitudinal control (e.g. AEBS, ACC)* **Detection of passive road infrastructure for longitudinal control (e.g. LDW, LKAS)*
	Planning	**Out of scope (requirements should target ML and its subsets instead of AI)** Examples of applications: **Activation of FCW and AEBS based on ego vehicle position and other road users*		
	Actuation	**Not applicable (AI is not used for actuation)**		**Not applicable (AI is not used for actuation)**
	Non-driving functions	**Out of scope (requirements should target ML and its subsets instead of AI)** Examples of applications: **Detection of drivers face for ID*		Examples of applications: **Detection of drivers eye gaze/state for driver availability recognition (DMS)*
Requirements		**Out of scope (requirements should target ML and its subsets instead of AI)**		•Keeping records of training data •Data quality (sufficient scope and lack of bias of training data) •Information provision •Robustness and accuracy (safety KPIs achieved)

The following table presents the different subsets of machine learning AI that are used in automotive products, along with examples of applications and CLEPA's recommendations with regards to mandatory requirements (for the high-risk applications that would fall under the scope of the regulatory framework).

Acronyms used:
AEBS – Advanced Emergency Braking System
ACC – Adaptive Cruise Control
CAN – Controller Area Network
DMS – Driver Monitoring System
FCW – Forward Collision Warning
ISA – Intelligent Speed Adaptation
LDW – Lane Departure Warning
LKAS – Lane Keeping Assist System

Definitions		
Unsupervised Learning (UL)	**Semi-Supervised Learning (SSL)**	**Reinforcement Learning (RL)**
UL is a subset of ML which uses training data that has not been labelled by humans or where relationships are unknown. These algorithms automatically discern patterns, clusters, anomalies, relationships, and structures from raw, uncategorised data. UL algorithms are often used to help discern new knowledge about data that can then be used to train other ML processes.	SSL is a technique that "learns" from a mix of labelled and data that is both un-labelled and unstructured. SSL builds on a small set of known exemplars and then uses this information to guide unsupervised learning.	RL is a subset of ML based on an iterative process where the algorithm processes data and acts on success/failure feedback it receives from an external context. It develops models that seek to maximise a reward function with each iteration until a satisfactory (externally set) performance threshold is achieved.
Out of scope (not high-risk)	**Out of scope (not high-risk)**	**Out of scope (not high-risk)**
Examples of applications: **Streamlining data labelling process*	Examples of applications: **Streamlining data labelling process for less safety critical systems (e.g. ISA)*	Some manufacturers are starting to use RL for perception, could potentional be used in cooperative perception in the future
	Examples of applications: **"Shadow mode" used in development for training control algorithms*	Examples of applications: **Lane Centering or ACC systems may use RL due to the reduction in cost/data required to train the system*
Not applicable (AI is not used for actuation)	**Not applicable (AI is not used for actuation)**	**Not applicable (AI is not used for actuation)**
Examples of applications: **Utilisation of CAN data to estimate driver condition*		
• Keeping records of training data • Data quality (sufficient scope and lack of bias of training data) • Information provision •Robustness and accuracy (safety KPIs achieved)	• Keeping records of training data • Data quality (sufficient scope and lack of bias of training data) • Information provision • Robustness and accuracy (safety KPIs achieved)	• In-use monitoring to demonstrate compliance is achieved and/or envelope of performance doesn't dip over lifetime of the vehicle

Annex 2: Technical feedback on the mandatory requirements proposed in the White Paper on AI

As mentioned previously in the present position paper, CLEPA believes that innovation should not be hindered unnecessarily by burdensome barriers. Regulatory requirements should always remain proportionate to the possible risks and leave room for testing and experimenting. Therefore, in this annex, we comment on the mandatory requirements for high-risk AI applications which the Commission proposed in its White Paper.

We understand that many of these requirements are aimed at ensuring that AI does not create or reinforce discriminatory situations, or intrude upon citizens' private lives. However, automotive uses of AI typically do not create such risks. Consequently, we argue that requirements for our industry should primarily focus on ensuring robustness and accuracy, and avoid burdening the development of automotive products with unnecessary barriers.

With regards to ensuring safety, we also stress that regulation should focus on defining what acceptable safety standards are (e.g. with KPIs), and ask AI products to demonstrate through testing that they reach these standards.

In addition, before a legislative framework is formally proposed, we would recommend that the Commission undertake a case study on its application to automotive (e.g. for automated driving), to ensure that any requirements proposed are technically feasible.

Data sets

Any requirements on data sets that will be imposed by the upcoming legislative framework should take into account the development cycle length of automotive products, which must include time for testing and certification. Vehicles with automated functions that will be on the roads in the next few years are already being trained now.

Among technologies that the automotive sector makes use of are pre-trained models, where it is not always possible to refer to all the data the system has been trained with. The criteria suggested by the White Paper might make the use of pre-trained models impossible.

With regards to the requirement of keeping records and data, CLEPA stresses that this would require significant effort to catalogue, store, and maintain (e.g. fully historicise all data and models). In application areas that operate on low margins, AI applications might become economically infeasible.

Coverage of data sets, and their quality, can be critical for the safety of high-risk applications and should be assessed by demonstrating compliance with safety requirements under vehicle type-approval or other established automotive standards.

While coverage, and more generally quality of data, is important, it should not be a mandatory requirement. With certain techniques, such as semi-supervised learning, it is possible to train good systems even on datasets that are not labelled entirely by humans, which is especially usefl when the highest-quality datasets might not be available, or be prohibitive or unsustainable in terms of time, costs, and safety. Furthermore, there is currently no widely agreed-upon tool that exists to define and assess the quality of a dataset.

It is typical that deep learning algorithms are developed using three datasets: for training, validation, and testing. Models are fitted using the training dataset, while the validation dataset is used during the training process to verify the quality of the current fitting. The testing dataset is used to verify the performance of trained models after training has finished. All three datasets are carefully constructed to suit their purpose. There should only be specific obligations on manufacturers to ensure that AI systems are tested on data sets that are sufficiently broad. The data that is used in the training and validation phases should be dependent upon the manufacturer. We would like further clarification on the requirements outlined in the White Paper, regarding in particular the non-discrimination and privacy requirements, and how these should be taken into account in the context of automated driving applications.

Regarding cybersecurity provisions for data sets, CLEPA believes there is no necessity at the moment for cybersecurity certification schemes for automotive AI products over and above the applicable type-approval regulatory requirements. CLEPA is nevertheless ready and available to contribute via the relevant channels at both the European Commission and ENISA, the Agency for Network and Information Security (e.g. in the Stakeholder Cybersecurity Certification Group), in carefully assessing if any additional cybersecurity schemes may address further risks associated with the intended use of AI products in the automotive sector. In fact, it is of utmost importance to cater for the specificities of the automotive sector, which cannot be covered adequately by generic or IT product legislation. Moreover, it is essential to ensure alignment between the cybersecurity principles and methodologies in EU legislative acts, UN regulations, and international standards such as ISO. CLEPA also supports the Auto-ISAC initiative, which provides an industry-wide forum for companies to collaborate to identify threats sooner, and share solutions to enhance vehicle cybersecurity.

Information provision

With regards to the obligation to inform consumers/users that they are interacting with an AI, automotive suppliers should have the duty to inform their direct customers (vehicle manufacturers, or other suppliers for tier 2-3 suppliers), but the responsibility for informing the end consumer should rest with vehicle manufacturers.

Robustness and accuracy

The requirements proposed by the Commission in the White Paper are relevant for products that are not already subject to strict performance assessments. Automotive products already undergo type-approval, and the requirements should be checked under this existing framework (as per our remarks above).

Robustness would need a clearer definition, with strict limits, so as not to impose technically unfeasible requirements (e.g. against adversarial attacks).

Human oversight

We agree that AI systems must remain under the principle of human oversight, but the specific context of automated driving should be taken into account. It is not possible to oversee every single decision taken by an automated vehicle, due to most decisions being taken in real time. The human oversight requirement should therefore be conceived as an ex-ante verification of the logic of the decision-making for automated and fully automated vehicles.

One possibility of human oversight mentioned in the white paper is imposing operational constraints on the system, for example by imposing rules on the behaviour of a fully automated vehicle in the design phase. The guidelines on the exemption procedure for the EU approval of automated vehicles, developed by the Commission and Member States in 2019, give five main rules to the behaviour of an automated vehicle: "the vehicle shall be able to keep a safe distance with other vehicles in front, exhibit caution in occluded areas, leave time and space for others in lateral manoeuvres, be cautious with right-of -ways, and if an accident can be safely avoided without causing another it shall be avoided." CLEPA suggests addressing the issue of human oversight by defining formal rules in order to assess the behaviour of automated vehicles during the conformity assessment phase. This should be done by establishing a transparent, technology-neutral, and performance-based evaluation of the decision-making of automated vehicles, following the key principles already defined in the 2019 guidelines.

Human oversight requirements should also not unduly restrict machine learning applications.

Biometric identification systems

We would like some clarification on what would be considered biometric identification (e.g. facial recognition). Some safety-related automotive applications, such as driver awareness/drowsiness monitoring or external sensors, may scan human faces but should not be considered facial recognition as they do not pose risks for fundamental rights as described in the White Paper. Such applications may also include detection of pedestrians and their intentions, but it is possible to anonymise or pseudonymise information to ensure their privacy.

CLEPA, the European Association of Automotive Suppliers, represents over 3,000 companies supplying state-of-the-art components and innovative technologies for safe, smart, and sustainable mobility.

CLEPA brings together over 120 global suppliers of car parts, systems, and modules and more than 20 national trade associations and European sector associations. CLEPA is the voice of the EU automotive supplier industry linking the sector to policy makers.

- The automotive sector accounts for **30% of R&D** in the EU, making it the number one investor.
- European automotive suppliers invest over **30 billion euros** yearly in research and development.
- Automotive suppliers register over **9,000 new patents** each year.
- Automotive suppliers in Europe generate **five million** direct and indirect jobs.

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