



Conclusions from the 4th High-Level Meeting on Connected and Automated Driving

Helsinki, 7 October 2020

Preamble

In the 2016 Declaration of Amsterdam under the Dutch Presidency of the Council of the EU, key issues concerning European cooperation in the development of connected and automated driving were addressed. On the basis of the Declaration, cooperation in the form of high-level dialogue between Member States was initiated.

The inaugural meeting took place in February 2017 in Amsterdam. It was followed by ministerial level meetings in Germany in 2017 and Sweden in 2018, as well as expert meetings in Austria in 2018 and Lithuania in 2019. The next round of ministerial level meetings was planned for Barcelona in October 2019; however, this was postponed and will be held in Helsinki in October 2020.

The three core themes for the 4th High-Level Ministerial Meeting on Connected and Automated Driving (later HLM CAD) were already established by the Spanish Presidency and further elaborated by the Finnish Presidency as:

- 1) the need to develop and deploy transport automation in a human-centric manner,**
- 2) the need to enhance data sharing between the various stakeholders in the cosystems of transport automation and**
- 3) the need to reform the regulatory landscape concerning transport automation.**

The ongoing COVID-19 pandemic has caused enormous human suffering and led to a formidable global economic crisis. Concurrently, the pandemic has clearly demonstrated the value of IT and digital transformation as societal and business operations have been transferred to the digital world to ensure continuity in administration, business and in people's everyday lives. Consequently, we can expect that the crisis and the following recovery phase will create a surge in activities aimed at accelerating digital transition. Although the European transport sector has always been at the forefront with respect to digitalisation and automation, the new surge to increase technology capacity and investment following the COVID-19 pandemic will put pressure on the EU to find solutions and make progress in the digital transition and the adoption of automation for the benefit of the European transport system.

1.

Human centricity in transport automation

Achievements to date

In the EU, the High-Level Expert Group on Artificial Intelligence has published Ethics Guidelines of Trustworthy AI [8 April 2019]. The AI4People project is translating the seven key requirements for trustworthy AI into practical steps for the AV industry and policymakers to make sure automated vehicles comply with those seven key requirements [report expected by December 2020].

On 19 February 2020, the European Commission published a White Paper aimed at fostering a European ecosystem of excellence and trust in AI [COM(2020) 65 final] and a report on the safety and liability aspects of AI. The White Paper proposes measures that will streamline research, foster collaboration between Member States and increase investment in AI development and deployment, as well as policy options for a future EU regulatory framework that would determine the types of legal requirements that would apply to relevant actors.

The need to discuss ethical issues raised by Connected and Automated Vehicles [CAVs] at the European level was recommended by the Ethics Task Force, a Member State initiative that was set up after the second High-Level Meeting of EU Transport Ministers, the European Commission and Industry on Connected and Automated Driving in Frankfurt in September 2017. A report was delivered in June 2018, which recommended the European Commission should set up a new group of experts to discuss these issues.

In its 2018 Communication on the Road to Automated Mobility: An EU Strategy for Mobility of the Future¹, the European Commission announced the creation of a Commission Expert Group to advise on specific ethical issues raised

by driverless mobility. The expert group was set up in June 2019. In its report Ethics of Connected and Automated Driving (https://ec.europa.eu/info/news/new-recommendations-for-a-safe-and-ethical-transition-towards-driverless-mobility-2020-sep-18_en), the Expert Group provides 20 recommendations in the following areas: 1] Road safety, risk, dilemmas; 2] Data and algorithm ethics: privacy, fairness, explainability; and 3] Responsibility/Accountability.

Conclusions and actions to be taken

Ethical development and deployment of ADS

The Member States participating in the High Level Meeting underline that developing and deploying transport automation should enshrine the principle of human centricity and aim to increase the well-being of individuals and societies. Furthermore, the human centric approach requires that when developing and deploying automated driving systems [ADS], internationally agreed human rights will be respected. For example, the acquisition and processing of static and dynamic data by CAVs must safeguard privacy rights and should not create any form of discrimination.

Automated transport must be developed so that it helps the transport of tomorrow to be safer, more efficient and more sustainable than today's. **The Member States conclude that the introduction and integration of automation in transport can contribute significantly to the possibility of achieving larger societal goals, such as the prevention of road casualties, the reduction of congestion in the cities and combating climate change and should be seen as one key part of the rise of new mobility ecosystems.** The ethical

issues of bias, accessibility, fairness, safety and transparency are fundamental to achieving confidence in these technologies.

The Member States acknowledge the importance of the work already being carried out by various European groups and institutions in the ethical aspects of automated driving. Furthermore, the Member States welcome the Independent Expert Report, Ethics of Connected and Automated Vehicles, and invite the European Commission to explore the most suitable destinations for the recommendations of the report and to prepare (in cooperation with the target groups of the report and the Member States) an action plan to follow up on the recommendations of the Expert Group Report.

Evolving role of humans in the context of road transport

Transport automation will bring a multitude of new players into the sector, such as the developers and deployers of ADS. Furthermore, there are traditional players who will have redefined or completely new roles in the future. For example, humans have traditionally had a significant role as “driver”; however, in the future, it is probable they will increasingly have the role of being the end-user of the ADS with very limited capability to control the systems when they are active. The human driver can no longer be accepted as the main responsible actor for automated functions in a vehicle. **The Member States recognise the need to clearly define the roles of the various stakeholders relating to the development and use of ADS as well as the responsibilities and rights attached to these roles.**

Companies as the key players in trust creation

The safety of ADS is of paramount importance for achieving trust in road transport automation. The vehicle manufacturers and other companies developing and deploying ADS should be active in building a culture of responsibility and trust when developing and deploying automated systems. An ethical approach to road transport automation should focus on shaping automated technologies responsibly by subordinating benefits to a common set of values and principles. **The Member States conclude that the companies should be supported by the necessary regulatory framework and industry-led open standards as well as by creating concrete tools to help the practical implementation**

of a culture of responsibility and trust. By ensuring continuous dialogue and collaboration between stakeholders and by providing tools that raise awareness on their different obligations, the European Commission can support all relevant stakeholders in fostering a culture of accountability that promotes ethical and societal responsibility.

Transparency is key from the safety point of view and it is also needed to ensure the social acceptance of automated transport. Encouraging algorithmic transparency in the decision making of connected and automated vehicles, services and systems will also support stakeholders to develop and strengthen a culture of responsibility and trust by making the functioning of the technology understandable and cognitively accessible to all relevant stakeholders, including future users. **The Member States recognise the need to develop the vehicle/system behaviour transparency of the algorithms so that independent third parties (e.g. authorities and assessment bodies) can evaluate the systems and be assured of the data security, assess the grounds on which the systems base their decisions, allowing performance verification during the complete vehicle life-cycle.** ADS technology use should be preceded by a transparent and possibly standardised assessment process and certification requirements in force in the automotive sector. Privacy protection should be ensured from the design phase of ADS onwards and privacy enhancing technologies must be supported. Data security must be of the highest priorities while pursuing transparency.

2. Data: Towards enhanced sharing of data that is necessary for road transport automation

Achievements to date

The European Commission is working on data sharing in the EU and is currently preparing new measures in line with the Common European Data Spaces Initiative. This initiative will draw up rules for common European data spaces (covering areas such as the environment, energy, mobility and agriculture). The European Commission is also reviewing the current European legislation on access to vehicle data and is considering further policy options to open vehicle data to more services.

At the same time, the Commission has initiated a regulatory revision of the ITS Directive and its delegated regulation in order to align with the wider EU objectives of sustainable development and to speed up the transition towards further digitalisation and automation based on improved data availability, use and sharing.

The Data Task Force is a public-private platform that aims to enhance data exchange in the field of Connected, Cooperative and Automated Mobility (CCAM). The original aim and scope were agreed at the High-Level Meeting in Amsterdam on 16 February 2017, and refined at the High-Level Structural Dialogue in Frankfurt on 16 September 2017 and the High-Level Meeting in Gothenburg on 19 June 2018 ("the Mandate").

The DTF launched a proof of concept, Data for Road Safety June 2019, and has been testing its designed "safety service ecosystem" on a technical and governance level. A Memorandum of Understanding (MoU) has been signed by nearly twenty public and private parties, enabling the sharing of relevant Safety Related Traffic Data and Information on a large scale for participating Member States, but also outside due to the overarching coverage of industry players.

At present, over three million vehicles in Europe are sending data to the safety service ecosystem on factors such as road slipperiness, obstacles on the road, accidents, vehicles in difficulty and ABS engagements. The proof of concept phase is nearly at an end (15 October 2020).

Therefore, the Data Task Force is launching a call for more stakeholders to join this eco-system and improve road safety in Europe. New members will benefit from joining the Data for Road Safety initiative at a mature and stable stage with a robust multi-party agreement and governing general assembly in place to structure the activities of the partnership. New members will benefit from relationship building opportunities with other members and the exchange of best practice with regard to SRTI data sharing and service creation. Prospective members and interested parties can visit <https://www.dataforroadsafety.eu/> for more details.

Conclusions and actions to be taken

Towards a European data governance model

The Member States conclude that the EU plays an absolutely pivotal role in developing a common governance model for data sharing and supportive structures, which would enhance strong cross-sectoral cooperation and collaboration between the Member States and other relevant states. An efficient and functioning data governance model should support many-to-many data exchange structures, where data collection, storing and sharing should be carried out by organisations themselves, whether public or private (decentralised data sharing ecosystems as opposed to centralised), whereas there are some federated coordination

tasks that should or could be taken care of by a number of distinctive entities. In order to create the governance model, there is the need to define various roles related to the model as well as the responsibilities and rights attached to these roles.

The Member States conclude that there is demand for both policy-level decision making to steer the development towards a functioning data governance model as well as a need for mechanisms, terminology and tools that would support interoperability. The Member States welcome the extensive work carried out by the European Commission towards such a common data governance model. The European Commission should continue the development of an EU-level framework that ensures interoperability, identifies specific roles in the data governance model and consolidates the development of the data economy, such as in the context of the revision of the ITS Directive and its delegated regulations.

The Data Task Force

The Data Task Force has carried out extremely valuable work by providing momentum to the sharing of safety related data. **The Member States take note of the recommendations made by the Data Task Force and conclude that the objective set for the Data Task Force is fulfilled.** The work will continue as the public and private members of the data task force are committed to continuing the implementation of their mutual agreement and launching the Safety Related Traffic Information Ecosystem. The partnership will have a general assembly, starting with the current members of the Data Task Force and remaining open to new members.

The further coordination and harmonisation of ITS services will be integrated in a new initiative on the federation of National Access Points and National Bodies (PSA). **The Member States are called upon to support the PSA by joining the initiative and requesting the European Commission:**

- **to learn from the best practices in several national and cross-national projects, e.g. the Data Task Force and**
- **to explore the best ways to integrate the private sector in this work.**

The High-Level Meeting can assess the need for a further mandate for the Data Task Force at a later stage, if appropriate.

Explanation and acceptance of ADAS and automated driving systems

There is a need to have a solid understanding of the safe functioning of ADAS and ADS. Currently, there are no indicators or methods to survey the levels of the safety of automated systems in vehicles. There will be positive but also possible negative effects or phenomena leading to possible undesired societal end results linked to automated transport, and there should be methods for monitoring both in order to take the necessary decisions. **The Member States note that public organisations currently lack the tools to move towards evidence-based policymaking.** To gain better insight into the functioning of automated driving systems and the effects of ADAS on safety, the necessary statistical data or other general level information is needed, while still fully acknowledging both the privacy of the individual and commercial interests/intellectual property of the industry partners.

In addition, there is still a degree of vagueness in the concepts relating to road transport automation and the artificial intelligence systems internationally. Vehicle manufacturers do not have unified ways of expressing the capabilities, features and qualities relating to the safe performance of automated systems. **The Member States conclude that developing such a taxonomy would help people, especially as consumers, understand the functioning of automated systems and further create trust.**

The Member States, together with the industry and possibly the European Commission, will start a voluntary public-private task force to discuss and develop a framework that will support (statistical) data sharing to gain insights into the potential and impact of different ADAS systems and automated systems and to develop methods to describe the safe performance of such systems. The task force is to report back during subsequent meetings, providing the High-Level Meeting with concrete proposals by the end of 2022.

3.

Holistic regulatory approach of Transport automation

Achievements to date

The Member States and the Parliament adopted on 27 November 2019 new Regulation 2019/2144 on vehicle general safety, which provides the legal framework for the safety and cybersecurity of connected/automated vehicles. It empowers the Commission to adopt the necessary implementing rules. Subsequently, new UNECE Regulations on vehicle cybersecurity, software updates and traffic jam chauffeur (levels 3/4) were voted on by the EU with its international partners in June 2020 and will become the EU implementing rules of the general safety regulation. New concepts have been introduced, such as risk-based requirements or the management of safety/cybersecurity during the vehicle life-cycle. The work is now continuing with the development of horizontal functional requirements and a new assessment method that can be applied to any automated vehicles.

UNECE WP.29 has in June 2020 adopted a Proposal for a new UN Regulation on uniform provisions concerning the approval of vehicles with regard to Automated Lane Keeping System. The Regulation is meant to be the first regulatory step towards an automated driving system (as defined in ECE/TRANS/WP.29/1140) in traffic and it therefore provides provisions aimed at addressing the complexity related to the evaluation of system safety. It contains administrative provisions suitable for type approval, technical requirements, audit and reporting provisions and testing provisions. UNECE WP.1 has in September 2020 adopted an amendment (art. 34 bis) to the 1968 Vienna Convention on Road traffic, which concerns the question when the requirement that every moving vehicle or combination of vehicles shall have a driver is deemed to be satisfied while the vehicle is using an automated driving system.

The CCAM platform and partnership are focused on research, innovation and testing, and do not produce legislation or regulations. However, they represent a holistic approach towards developing transport automation. In an open and transparent process, the CCAM platform developed the Strategic Research and Innovation Agenda for the 2020s. It emphasises the need for large-scale testing, demonstrations and pilots to speed up CCAM implementation. The necessary R&I actions to support deployment and implement partnership are structured in seven clusters, which systematise key enabling technologies for the whole mobility system and evolving vehicle technologies. The technological development is integrated into the transport system, including validation aspects, the societal aspect and user needs.

The CCAM platform also drafted a proposal for a CCAM partnership that aims to harmonise European R&I efforts to accelerate the implementation of innovative CCAM technologies and services. The vision of the proposed partnership is "European leadership in safe and sustainable road transport through automation."

Conclusions and actions to be taken

Evolving regulatory landscape

As automated systems becoming more sophisticated and complex, so to the regulatory landscape becomes increasingly challenging and required. In the EU and the UNECE, the emphasis of regulation has traditionally been on vehicle technical issues. When we add the connection to the communication networks that enables the vehicles to collect and share huge amounts of data, and the use of algorithmic systems, i.e. artificial intelligence in the transport automation, we are in a

situation that compels us to look at a wide variety of interlinked regulatory sectors. Furthermore, we need to advance with both a top-down and a bottom-up approach. So far, progress has been made with various regulatory processes, but there is a lack of a wider picture of where we are heading and what should be done in order to get there (the so called big picture). **The Member States agree on the need to have a holistic, cross-sectoral view of regulatory matters.**

Over the course of the past decades, the regulation of the transport sector has evolved to be rather technically detailed. With fast developing ADS it is not possible to continue with such regulatory processes because technical details rapidly create hindrances for future developments. The legislation should set goals, not technologies. **The Member States conclude that the regulation should be enabling, risk-based, goal-based and performance-based as well as technology-neutral in order to be future-proof.**

Synchronisation of efforts internationally and in the EU

It is crucial that the regulatory landscape is synchronised between the UNECE and the EU. Greater international cooperation is needed in order to enable moving forward together without duplication of effort. **The Member States take note of the important development of technical rules relating to road transport automation by WP.29 of the UNECE, such as the Automated Lane Keeping Systems (ALKS) Regulation. The Member states conclude that, as a result, synchronisation is needed also between the EU Member States. In order to avoid putting up barriers to the single market in CAD, we must achieve more coordination at the regulatory level among the EU Member States, for technical rules but also with regard to traffic rules and the digitalisation of such rules, while fully respecting different legal traditions and frameworks and the principle of subsidiarity.**

Experimental testing

Experimental testing should be clearly distinct from testing related to the type approvals. [36] As road transport automation and related technology is still in a clear development phase, Member States should have the opportunity to evaluate and decide on the types of automation to be tested within their borders, but the means towards mutual recognition of testing authorisations should be developed.

Moreover, some issues should be harmonised more in order to ease the testing of automated vehicles in different countries and to improve learning from the experiences of testing. **Member States recognise the importance of having a central European database that collects relevant information on CCAM research, testing, piloting and deployment activities and its results in Europe and beyond. Therefore, Member States support the Knowledge Base on CCAM (<https://knowledge-base.connectedautomateddriving.eu>) by providing up-to-date information on ongoing programmes and projects.**

The Member States welcome the work being developed in the WG4 of the CCAM Platform with regard to recommendations for testing authorisations (technical aspects) and in relation to such recognition in their national laws. The Member States are called upon to work actively in these processes in order to promote free cross-border movement and automated driving trials.

4. Continuation of the informal High-Level Meeting

At the 1st High-Level Meeting on Connected and Automated Driving in Amsterdam 2017, the Member States agreed to continue the process that will be Member States-driven in close cooperation with the European Commission and industry, and will focus on preparing the deployment of connected and automated driving, supporting existing initiatives and building on work already done, and will be organised as an informal meeting by organising Member States on rotation.

At the High-Level Meeting in Helsinki, the Member States agreed to further continue the High-Level Meeting that will be Member States-driven in close cooperation with the European Commission and industry and to be organised at appropriate intervals by organising Member States on rotation.