【欧州】【自動車】

Road – Environmental friendly vehicle: European Commission's Joint Research Centre (JRC) report assesses future of EU's road transport

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【概要：Summary】

The JRC report entitled "The future of road transport – Implications of automated, connected, low-carbon and shared mobility" assesses current and future trends in the road transport sector. It shows the probable future changes in the EU's road transport regarding the technologies and service that will shape transport, focusing on the implications of automated, connected, low-carbon and shared mobility. It analyses the way of adopting these expected different technologies and service trends and also considers the action regarding the transformation of road transport including infrastructures, communication technologies and cybersecurity, legislation and data governance. According to the JRC report, four key technologies and services, namely automation, connectivity, decarbonisation and sharing will shape the future of road transport. This represents a change from the current private car ownership-centred road transport and opens new opportunities towards achieving a more efficient, safer, less polluting and more accessible road transport system in the future.

The improvement of governance and the development of innovative mobility solutions will be crucial to ensure that the future of transport is cleaner and more equitable than the current structure. The JRC report's authors suggest to establishing a network of "European living labs" where innovative mobility solutions are tested with the direct involvement of citizens, towards achieving a more efficient, safer, less polluting and a more accessible transport system, to the benefit of a larger part of the society.

【記事：Article】

1. Considerations regarding the EU's future road transport policy

From 1995 to 2015, the vast majority of the total number of passenger kilometres (pkm) in the EU-28 was covered by passenger cars. It is expected that EU transport activity will continue to grow in the coming decades, with an estimated 16% growth in road passenger transport during 2010-2030 and an increase of 30% in the 2010-2050 period. More specifically, road freight transport is projected to increase by 33% by 2030 and 55% by 2050. At the same time, road transport will be responsible for a significant share in air pollution and climate change. Currently, road transport is responsible for up to 30% of small PM emissions in European cities and for the majority of 70% of CO2 emissions in the EU from all modes of transport.

From a demographic viewpoint it is expected that by 2050, 84% of people in Europe will live in urban areas and people above the age of 60 will make up one third of the population. This will require mobility systems that are inclusive and accessible to everyone, which will also require a move away from the current car-centred transport, which is also responsible more than 25,000 deaths on EU roads per year.

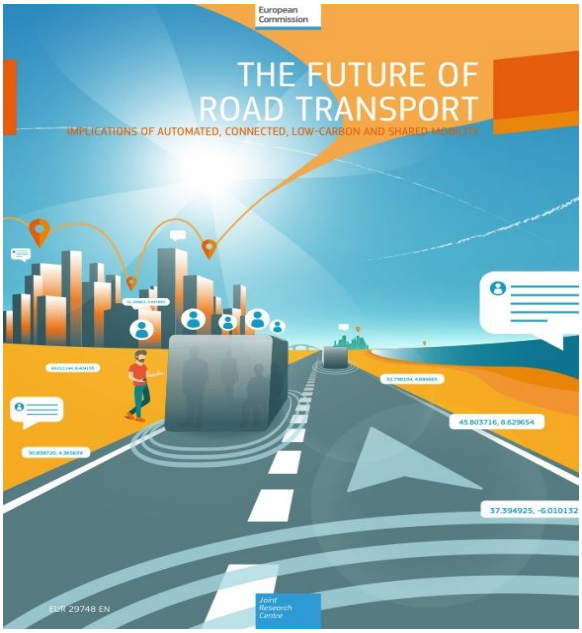
Therefore, the future policy regarding the improvement of road transport will have to consider

different trends that will shape the future road transport. The future trends in road transport also include mobility as a service (MaaS) and the aim to decarbonise transport, which can be expected to lead also to a different approach in future transport policy. Some of the future modes could be the new road transport concept MaaS, autonomous cars, as well as a combination of different modes, among others.

However, the new transport technologies will not spontaneously improve the transport situation. The transport systems and policies need upgrades towards the mobility needs of the 21st century, since without the right policies and initiatives, new transport technologies on their own will not improve the transport situation. The development of innovative mobility solutions will be crucial to ensure that the new transport technologies can lead to a cleaner transport system in future. The massive changes incorporate the opportunity to make moves towards more efficient, safer, less polluting and more accessible new transport systems possible for much larger parts of society in Europe.

2. The European Commission JRC's report on the future road transport

At the occasion of the launch event on 21 June 2019, the European Commission presented the Joint Research Centre (JRC)'s report entitled "The future of road transport – Implications of automated, connected, low-carbon and shared mobility". The agenda included the presentation of the JRC report from a policy perspective. The report focuses on the implications of automated, connected, low-carbon and shared mobility and analyses the future of road transport in the EU regarding the adoption of these expected new and different technologies and service trends. The JRC report outlines the four fast-moving trends and their key factors including automation, connectivity, decarbonisation and mobility sharing, which, according to the report's authors, are expected to have a significant effect on the EU's future road transport. These new technology options and business models are expected to shape the future of the EU's road transport and will affect the transport systems. Therefore, these future trends require an analysis of the dynamic interactions between the demand for transporting people and goods and the new opportunities offered by these systems. The connected mobility, autonomous vehicles and the transition to low emission fuel sources, as well as outside factors such as population shifts and urbanisation are key factors that will have a significant impact on the future road transport. Therefore, the JRC report identifies the significant challenges currently presented by road transport across the EU and also the details and opportunities presented by these changes to implement a safe and sustainable transport policy.



The JRC report: The future of road transport

Source:http://publications.jrc.ec.europa.eu/repository/bitstream/JRC116644/fort_executive-summary_online.pdf
https://ec.europa.eu/jrc/en/news/future-road-transport-what-we-will-drive-if-we-still-drive-all

The report defines automation as systems able to perform part or all of the Dynamic Driving Task (DDT) to operate a vehicle in on-road traffic, excluding the strategic functions like trip scheduling and selection of destinations. Connectivity refers to the use of technologies enabling road vehicles to communicate with each other and with roadside infrastructure. Connectivity enables the concept of

Cooperative Intelligent Transport Systems (C-ITS) and is closely interlinked with automation. The "connected and automated vehicle" (CAV) encompasses connectivity and automation. Decarbonisation addresses the use of alternative fuels like electricity, hydrogen, biofuels and natural gas, which are introduced in order to end the European transport sector's dependence on fossil fuels and to reduce the road transport's GHG emissions. Mainly electric vehicles (EVs), but also fuel cell electric vehicles (FCEVs) and biofuels are important renewable alternatives to fossil fuels. Finally, there exists also the approach to enable users to gain short-term access to transport modes under a "sharing" and "as-needed basis". "Mobility-as-a-Service" (MaaS) describes the use of digital technologies that integrate various forms of transport services into a single mobility service accessible on demand. MaaS, combined with vehicle automation and electric engines, is expected to lower the costs of road transport significantly, resulting in the massive adoption of these technologies and services in the near future. These future technologies and services promise to contribute to fewer negative impacts from road transport, but the users' acceptance of these trends is an important factor that will drive their adoption and will create new transport governance opportunities. Eventually, the combination of these four elements can lead to a radical transformation of road transport.

Furthermore, the JRC report assesses current and future trends in the road transport sector and identifies two key success factors including the improved governance of a multimodal transport system and the establishment of a network of European "living labs", where innovative mobility solutions can be introduced and tested, with the direct involvement of citizens. The report strongly recommends a comprehensive, long-term policy framework to address both the current issues and those likely to be posed by the influx of technology in mobility.

The JRC report also includes data governance, communication technologies and cybersecurity, legislation and infrastructures and discusses the potential impacts in an urban context as well as the impacts on economy, employment, energy use, sustainability, democracy and privacy and social fairness. According to the JRC report, new transport technologies on their own will not spontaneously make the citizens' lives better or reduce the negative impacts of road transport. Improvements in governance and the development of innovative mobility solutions will be crucial to ensure that the future of transport is cleaner, safer and more equitable than the present, car-centred road transport sector.

3. The improved governance of a multimodal transport system and the establishment of "European living labs "

Since transport systems are extremely complex and their elements influence each other often in unexpected ways also the governance systems need to change. Policymakers will have to improve governance systems and involve citizens in the rollout of innovative mobility solutions. They should establish efficient and equitable governance for complex, multimodal transport systems. New technologies like connected and automated driving just on their own even could make traffic worse by decreasing costs and increasing demand, while also increasing overall energy use. A lack of a predictable long-term framework by policy makers could lead to wrong investment decisions. In order to deal with the challenges, policymakers will have to address road transport, which is putting increasingly unbearable burdens on society, due to its private car-centred structure, due to the accidents and fatalities, economic losses, pollution or GHG emissions. Policymakers must act to ensure that new technologies will make future transport cleaner and more equitable than the current transport sector, dominated by the private car ownership. Public authorities must define and coordinate all actors in the public interest and establish efficient and equitable governance for complex, multimodal transport systems.

The JRC report's authors propose to establish a network

of “European living labs”, where innovative mobility solutions are tested and rolled out with the direct involvement of citizens. A network of “European living labs” can enable the introduction and testing of new transport opportunities with the direct engagement and feedback of citizens to verify the new transport initiatives’ usefulness in achieving the promised improvements for the transport sector. Since the potential users could test the novelties in real life situations, the citizens’ feedback will have an influence on the selected final version of mobility solutions. Ideally, a network of such European living labs across EU Member States would allow the exchange of test results in order to optimise the utility and costs of new technologies. In recent initiatives, including the “On the road to automated mobility: An EU strategy for mobility of the future” (COM (2018) 283 final), the Commission aims to shape the future road and mobility systems, to boost its competitiveness, and to strengthen its social fairness, towards zero emission solutions.

The on-going technology and business changes together with the improved governance and the development of innovative mobility solutions will be important to ensure an improved future of European road transport. This approach represents an opportunity to move towards a more efficient, safer, less polluting and a more accessible road transport system, to the benefit of a larger part of the society, in contrast to the currently existing private car ownership-centered transport sector.

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