

Task Force 2.1 - « New Mobility and its impact on road Infrastructure and Transport »

Strategies – Objectives

Mobility on the roads is undergoing a rapid evolution in recent years as a result of the application of new technologies both on the roads and in vehicles.

Mobility is an issue with a VITAL IMPACT. It is something that we have corroborated or given greater visibility in this pandemic. Fundamental for the development of our daily life work, leisure and family and social relationships, and for the industry, and the accessibility to goods.

The rapidity of changes and the appearance of new forms and patterns of mobility make it necessary for authorities and road operators to be aware of the challenges and opportunities that this new reality offers, to manage them appropriately, and to carry out continuous monitoring of evolution.

One of the conclusions of TFB.2 for PIARC was the need to continue working on the impact that new forms of mobility have on roads, recommending the creation of a new working group to continue with the studies, given the speed of the evolution and existing uncertainties about the future.

The objective of this working group is to analyze the impact that new vehicle capacities and new forms of mobility have on roads and transport, and to draw up recommendations on the best strategies for road safety, maintenance, operation and traffic management in the face of the new reality on roads and transportation.

Achievements of TFB.1 and TFB.2 on connected and automated vehicles

PIARC Taskforce B.1 and B.2 have developed an analysis about the impact that connected and automated vehicles imply on the responsibilities of authorities and road operators. Given the rapid evolution of these aspects that was detected in the studies carried out and the uncertainty regarding what may happen in the future, as a conclusion of the same, it was recommended for PIARC that a working group be created to deepen in the next months in the analysis of the reality and its impact for the authorities and road operators.

New Mobility and its impact on infrastructure

PIARC has been concern about challenges and opportunities that connected and automated vehicles implies for road authorities and road operators, and that is the reason because TF B.1 and Taskforce B.2 were stated to analyze the impact of this new technology. But, this scenario is in complete effervescence with a very rapid and constant evolution towards new uses in mobility.

Thus, the new mobility seems to evolve very focused on the user and the environment in which it is developed, also conceived as a service: MaaS.

The new forms of mobility refer both to the new vehicles that are already circulating on our streets and highways and the new technological capabilities that they present, as well as to the new ways that citizens have when using vehicles.

The impact that the appearance of connected and automated vehicles can have on roads has been initially analyzed in TF B.1 and TF B.2, and a special project has also been developed in Smart Road Classification. However, the evolution of the capacities of the vehicles that present these two

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technologies makes it necessary to continue with the study of the impact on roads in aspects such as digital infrastructure, data exchange, incidents that have an impact on road safety, maintenance and exploitation, connectivity, etc.

On the other hand, new uses of traditional, connected and automated vehicles have appeared, such as carsharing vehicles through public or private platforms. The design and maintenance of roads can be a development vector for this type of new mobility uses, promoting, for example, dedicated lanes for high-occupancy vehicles, public transport or carsharing. There are already experiences in this regard in some countries that must be analyzed for the future.

The impact that the use of new vehicle propulsion modes may have on the road must also be analyzed: The protection of the environment makes it necessary for the most polluting vehicles to be replaced by cleaner vehicles, especially for the transport of people and delivery of last-mile goods in cities, while more efficient ways of transporting goods by road are emerging through platooning, which has a direct impact on road use. This circumstance may lead to the role of the road in long-distance freight transport being further strengthened, compared to other modes such as the railroad.

Thus, it seems that the new modes of mobility are developed according to very different aspects: whether it is a movement, whether it is interurban, peri-urban or urban, whether it is for people, goods or mixed, the purpose of the movement, whether it is leisure or work or education... The opportunities for inclusion offered by new forms of mobility should not be forgotten either, allowing, for example, people with visual disabilities or the elderly, who have lost the skills to drive by themselves, to move independently. Finally, the gender perspective must be introduced in mobility, since gender differences have been obtained in the uses of the different modes and its impact must be taken into account in the analysis carried out.

The way in which countries resolve mobility in cities and roads has a direct impact on economic, social and environmental development, and therefore, a direct impact on the evolution of countries and their life expectancy. The impact that this new mobility and its management may have on LMICs must also be considered, since it may have an impact on the speed of their development.

Coordination with research into PIARC

The taskforce should have into account the research and conclusions obtained by the different Technical Committees, Taskforce and Special Projects promoted by PIARC in related matters such as road safety, sustainability, traffic management and connectivity.

The new mobility can have an impact on road safety, since the usual actors are modified and the system has to identify the risks and propose measures that the authorities and road operators implement to minimize them.

On the other hand, New Mobility can exacerbate existing pollution problems and decarbonization is an unavoidable necessity. The road can contribute to this transition.

The new forms and uses of mobility make adequate traffic management even more necessary. It is necessary to integrate the different data sources, establish coordination strategies between the different partners involved, manage the demand for mobility and coordinate the adoption of measures - especially in the interurban urban interface - promoting public transport and properly managing the distribution of merchandise and goods.

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In this context, connectivity becomes a tool that provides the system with greater efficiency and unimaginable possibilities.

Connectivity has an essential value in navigation and mobility services, through which users travel more efficiently, creating opportunities for public-private collaboration and for the development of new business models.

Coordination with the results of the Technical Committees related should be ensured through chair surveys and cross fertilization meetings. At least, It has been identified the need of coordination with Technical Committee 3.1 Road Safety, WG 3.1.4 Implications of connected and automated vehicles, Technical Committee 3.2 Winter Service, WG 3.2.1 Integration of the new technologies in winter services and WG 3.2.3 Implication of connected and automated vehicles on winter services and the Taskforces TF 2.2 Electric Road Systems and TF 4.1 Road Design Standards.

Methodology

The methodology to be adopted by the proposed taskforce should take into account:

- The participation of all regions of the world to know how mobility is evolving in all of them. Regarding LMICs, should be differentiate situation among low, low-middle and higher middle income countries.
- Study on new trends in urban and interurban mobility and their impact on roads. Analysis MaaS.
- Analyze case studies and news published in the different regions.
- Surveys of key entities and actors to find out the possible evolution of mobility within PIARC and outside PIARC. PIARC guidelines related to surveys would be taken into account.
- Formulate recommendations for the authorities and road operators to take advantage of the opportunities presented by the new mobility models and eliminate or minimize the potentially negative impacts for the transport system as a whole. Pay special attention to evolution in LMICs, gender, inclusion and diversity aspects GID.

Outputs	Expected Deadlines
<ul style="list-style-type: none">• Report on “New Mobility and its impact on road Infrastructure and Transport”	<ul style="list-style-type: none">• June 2023