

## PIARC (World Road Association) Strategic Plan - 2024-2027

### Technical Committee 2.4 – Road Network Operations and ITS For Sustainability

#### Overview

#### 2.4.1 Applications of new technologies and digital transformation concept to Road Network Operations

**Purpose:** The purpose of this work is to investigate the application of new technologies and digital transformation concept to Road Network Operations, identifying concrete applications for Road Operators and analyse the following aspects:

- The digitalization rate
- In what new technologies are used and how they can enhance road operations
- What are the opportunities identified and the challenged ahead for the ones that are putting in place digitalization processes
- How digital technology can improve the sustainability of road operations
- what is the impact of new mobility forms on the digitalization of operations (from MaaS to Digital Services)

**Importance to roads agencies:** This work is important to road agencies because many are facing the challenge of introducing digitisation to Road Network Operations and need references and best practices.

Digital technologies are changing the way people move and behave. The mobility ecosystems is more and more based on digital services and on demand and integrated transport. Address the digital transformation concept to road network operations can support roads agencies during the design and implementation of such projects, thanks to the reference and best practices this work will create. Application of new technologies is strictly linked to best practice sharing and knowledge exchange.

**Audience:** Road Agencies, Road Operators, Road Administrations with focus on the decision making process

**Deliverables:** Technical report, case studies, article in Routes/Roads, webinar, seminar, social media.

**Background to TC's work on this topic:** During the previous cycle some hints of this item have been investigate, such as:

- digitalization maturity rate with the word of COVID-19 Response Team on ITS (ref. Survey)
- investigation of new technologies with specific focus on Big Data and Machine Learning (Ref. Case Study Report)
- the role of innovation for LMICs (Ref. Briefing Note)

Last discussion within TC members highlights the need to focus more on this subject to expand it.

**Low and lower-middle income countries:** This work will be useful for LMICs because it will constitute a best practice report for technologies applications and a possible guidance for the same implementations.

**Gender inclusion & diversity:** Gender and other disparities in transport behaviour and usage underscore the need for inclusive and sustainable transport that enable everyone to move around in a safe, healthy and affordable way. Technology can be an ally in order to plan and deliver inclusive services based on sustainable choice, but it can also be an adversary.

The proper cover of this subject needs also to be guaranteed by a diverse group of TC members.

**Potential duration:** Full cycle.

#### 2.4.2 Conceive ITS solutions for sustainable mobility

**Purpose:** The purpose of this work is to investigate how ITS technologies will continue to improve and evolve at a phenomenal rate, providing more services to the transport industry. The benefits of deploying ITS technologies could be significant, if a focused, systematic and

incremental approach is taken.

In this context ITS is the cornerstone of future transport and mobility policies, as:

- ITS can contribute to reduce carbon emissions by optimizing mobility management
- ITS can be of great help to manage congestions and increase safety along the network
- ITS can provide users with digital services that makes the transport system more inclusive and sustainable
- ITS development has a great social impact for communities and cities

**Importance to roads agencies:** This work is important to road agencies because there is a great lack of guidelines and standards to allow this evolution of ITS. ITS involve huge investments in different specialistic sectors (i.e. Information Technology, Telecommunications, Engineering) and examples of their application can be of great help.

**Audience:** Road Agencies, Road Operators, Road Administrations with focus on the decision making process.

**Deliverables:** Technical report, case studies, high impact summary, webinar, seminar, workshop or conference, social media.

**Background to TC's work on this topic:** During the previous cycle the links with sustainability and resilience popped up very frequently. With the evolution of ITS and C-ITS in digital infrastructure connected with everything this seems to be the natural evolution of the discussion.

**Low and lower-middle income countries:** This work will be useful for LMICs because it will constitute a best practice report for ITS applications and a possible guidance for the same implementations.

**Gender inclusion & diversity:** The proper cover of this subject needs also to be guaranteed by a diverse group of TC members.

**Potential duration:** Full cycle.

#### 2.4.3 RNO and ITS development in LMICs: challenges and opportunities

**Purpose:** The purpose of this work is to analyse in order to better understand the rules for RNO and ITS development in Low Middle Income Countries.

In this context key aspects are:

- The role of new technologies and innovations for LMICs: what are the differences in processes and applications
- Consideration about sustainability in LMICs in relationship of the deployment of RNO and ITS systems
- Definition of challenges, benefit and opportunities for LMICs for the implementation of RNO and ITS systems
- Knowledge sharing and best practices exchange.

**Importance to roads agencies:** This work is important to road agencies because will include considerations that are purposely made in the context of LMICs.

**Audience:** Road Agencies, Road Operators, Road Administrations with focus on the decision-making process

**Deliverables:** Technical report, case studies, briefing note, seminar, social media, manual.

**Background to TC's work on this topic:** During the previous cycle the experience with LMICs the TC has done made us realize that a better understanding of the needs of LMICs leaders and decision makers is needed. They should have a voice of their own in this field.

**Low and lower-middle income countries:** This issue will be developed on purpose to address the needs, the challenges and the main benefit for LMICs. The conversation can be set.

**Gender inclusion & diversity:** The proper cover of this subject needs also to be guaranteed by a diverse group of TC members.

**Potential duration:** Full cycle.