

**Technical Committee 2.4: Road Network Operations and ITS  
2023 1<sup>st</sup> TC Conference and 2<sup>nd</sup> International Seminar Report  
9-13 May 2023**

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## Executive Summary

The strategic objectives of PIARC Technical Committee 2.4 Road Network Operations/ITS during the Cycle 2020-2023 focus on new mobility modes and optimisation of network operations through new technologies and innovations.

The first 2023 conference of TC2.4 and the 2<sup>nd</sup> Seminar of TC 2.4 - *Innovative road operation concepts for safe and sustainable mobility* - were held on 9-13 May 2023 in Rabat, Morocco.

The aims of TC2.4 meeting are:

- Making decisions on remaining activities for each WG of the cycle 2020-23
- Finalising all deliverables for each WG
- Preparing for the PIARC Prague Conference including finalisation of paper review, planning for TC session, workshop session, and the final TC meeting.

The aims of the international seminar are:

- Promoting the discussion and provide insight into global initiative regarding the advancement of road network operations through new concept including ITS.
- Discussing and identifying gaps and challenges for low and mid-income countries (MLIC).
- Providing recommendations for future PIARC work in TC2.4 space to accommodate the needs from MLIC countries.

Dr Clarissa Han (ARRB/NTRO) and Matthew Hall (Victoria DoT) are attending members of the committee. Dr Clarissa Han is also the Co-chair of the WG2.4.2. Both Clarissa and Matthew are active members of the WG2.4.2 leadership team and contribute significantly to the production of the case study report (published in 2022) <https://www.piarc.org/en/order-library/37419-en-Utilizing%20Data%20to%20Optimize%20Road%20Network%20Operations> and the final technical report of 'Using data to optimise network operations' (English draft ready for publication now) <https://extranet.piarc.org/#document/1824>.

Clarissa participated the Rabat conference in person and Matthew was unable to attend this meeting in person.

## Background

TC 2.4 - Road Network Operations and ITS is part of Strategic Theme 2 – Mobility.

The goal of this Strategic Theme is to encourage the improvement of access and mobility provided to the traveling public and industry through efficient road network operation and integration with other transport modes.

The TC2.4 conference is a two-day event held in Rabat, Morocco, covering the following sessions:

- Day 1 - May 9, 2023: Plenary session and Working Group (WG) sessions for progress updates and finalization of all deliverables.
- Day 2 - May 10, 2023: Prague conference preparation, including a paper review session, workshop preparation session, and final report session.

### WG Session Summary

#### WG2.4.1:

- Delivered a draft literature review report and circulated case studies.
- Routes / Roads edition on Maas: all articles published.

#### WG2.4.2

- Published case study report in English and French, pending release of the Spanish version.
- Delivered draft technical report and submitted to GS for review and publication, expected to be released soon in June 2023.

#### WG2.4.3

- Completed survey analysis and shared results with WG members.
- Pending GS instruction on website technology and strategy.

Confirmed work plan for the next stage:

- Development of Term of Reference (ToF) for the next PIARC cycle 2024-27
- Preparation of TC Activity Report and final Recommendations
- Compilation of all meeting minutes and uploading to the workspace.

### Prague Conference Preparation Summary

TC members completed the following tasks in preparation for the PIARC XXVIIth World Road Congress conference scheduled to take place from Oct 2-6 2023, in Czech Republic:

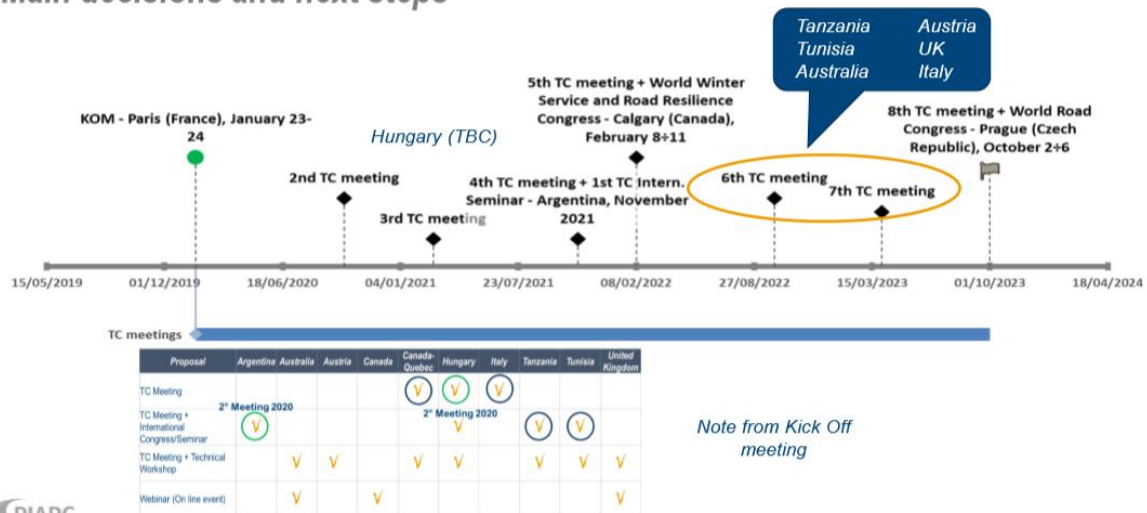
- Reviewed and made final decisions on all full papers in the mobility stream.
- Decided to organize a 3.5-hour Workshop session on the morning of October 6, 2023, with the theme '*Digital Infrastructure for Road Network Operations.*' Dr Clarissa Han will co-chair the session with Galen, and Matthew Hall will present a case study during the session. Both Clarissa and Matthew will participate in a panel discussion.
- Planned the TC session, which has been scheduled for the afternoon of October 4, 2023.
- Confirmed that the TC conference will take place on the morning of October 2, 2023.
- The next TC leadership meeting is scheduled for June 8 to complete relevant preparation tasks.

### Background of International Seminars

In accordance with PIARC policy, the TC is required to hold two meetings per year. Additionally, the TC should organize two international seminars per cycle, preferably in low- and middle-income countries (LMICs), and at least one workshop.

# TC 2.4 international seminars and workshop

## Main decisions and next steps



Source: TC2.4 planning slides

Two international seminars have been successfully conducted as follows:

- The 1st seminar, Argentina PIARC Seminar TC 2.3 & 2.4, took place on September 26-28, 2022, with the theme 'Building Smart Approaches for Freight, Road Network Operations, and ITS Technology.'
- The 2nd seminar, Morocco PIARC Seminar TC2.4, focused on "Innovative Concepts in Road Operations for Safe and Sustainable Mobility" and was held on May 11-13, 2023.

### The International Seminar "Innovative Concepts in Road Operations for Safe and Sustainable Mobility"

The 3-day conference featured a total of 8 sessions and 2 technical visits, providing attendees with valuable insights and experiences. The sessions were organized as follows:

- Session 1: Examples of road operations and innovative ITS systems in Morocco and around the world
- Session 2: Road network operations and infrastructure resilience
- Session 3: The role of data in safe and sustainable road operations
- Round table 1: Challenges and Opportunities for Low and Middle Income Countries (LMIC) for innovation in safe and sustainable infrastructure
- Session 4: The role of road operators in the development of MaaS
- Session 5: Delivering safer, more sustainable roads through smart infrastructure
- Session 6: The role of BIG Data to improve road network operations and user mobility
- Roundtable 2: Actions to improve the safe and sustainable operation of the road network

Additionally, participants had the opportunity to go on two technical visits to the local tram control center and the motorway control center in Morocco. These visits provided firsthand experience and insights into the operations of these key transportation facilities in Morocco.

**Summary of learnings from the Seminar** (compiled by PIARC Morocco Member Ms. Soumia JANNAN)

This seminar provided an invaluable opportunity to exchange numerous national and international experiences in road operations. The chosen theme of the seminar sparked enriching debates on the opportunities and challenges associated with integrating innovation into road operations, leading to a series of significant recommendations on this subject.

The main recommendations that emerged from the various discussions and presentations can be summarised as follows:

1. National and international experience feedback on innovative systems in road operations: The experience of developed countries in implementing innovative concepts provides valuable insights. However, it is crucial to adapt different technological solutions to the specific local context and needs.
2. The role of data and the importance of interoperability among different stakeholders for improving road operations: Successful and reliable data collection is essential for the successful integration of innovative systems in road operations. New technologies, such as Floating Car Data and data collection by drones, have emerged as promising tools in this regard.
3. Organizational, financial, and governance innovation in support of road operation policies: New strategies in road operations focus on prioritizing the needs of users over the infrastructure itself, giving rise to the concept of Mobility-as-a-Service (MaaS). Emphasizing user-centric approaches and innovative governance structures can enhance the effectiveness of road operation policies.
4. MaaS in addition to modal mobility: Innovative concepts offer several opportunities for improving road operations and ensuring safe and sustainable mobility. These concepts aim to provide reliable real-time information to users, empowering them to make informed choices about their mode of transportation.

The seminar highlighted the importance of adapting innovative solutions to the local context while emphasizing successful data collection, user-centric approaches, and the potential of innovative concepts for enhancing road operations and promoting safe and sustainable mobility.

However, these innovative concepts also present challenges on organizational, institutional, technological, and financial levels, particularly in low- and middle-income countries. Therefore, engaging in multipartite discussions is essential to prevent institutional and organizational constraints from hindering innovation. To address these challenges, the following recommendations are put forth:

1. Governments, as key actors, should play a crucial role in long-term planning, ensuring interoperability among different subsystems, and conducting post-evaluations of implemented actions, considering the evolving nature of mobility systems.
2. Planning should be based on well-defined objectives and measurable indicators to assess the progress made and guide future efforts.
3. Local development of innovative systems should be given due attention in low- and middle-income countries. It has been demonstrated that investing in local innovation in the long run is more cost-effective than relying solely on ready-to-use solutions. Therefore, promoting collaboration between universities, businesses, and institutional actors is crucial to foster local innovation.

4. The future of mobility aims to be safe and sustainable, both physically and digitally. This can be achieved by promoting intermodality between different modes of transportation and ensuring secure data collection and route choices, particularly for clean modes of transportation.

In summary, the recommendations emphasize the need for multilateral discussions to overcome challenges, highlight the role of governments in long-term planning and ensuring interoperability, stress the importance of measurable objectives and indicators, underline the value of local innovation, and emphasize the focus on safe and sustainable mobility in the future.

## **Actions**

- TC2.4 leadership team to complete the TC activity report and submit to GS by end June 2023.
- Each WG to finalise and publish the final deliverables following PIARC review process.
- Clarissa Han and Galen McGill to prepare the Workshop session plan and communicate piece following the PIARC guideline, in consultation with Valentina and Miguel Caso Florez, the PIARC technical director.
- All members register for the Prague conference and book travel and accommodation.
- The Morocco TC2.4 member(s) committed to deliver a Briefing Notes on the NetOp Impact of LMIC, due date TBC.

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