

2-6 OCTOBER 2023



PRAGUE CONGRESS CENTRE, PRAGUE, CZECH REPUBLIC

# **DETAILED PROGRAM**

The Congress program will kick off with the official opening ceremony on the morning of October 2, followed by a senior representatives' session and the opening of the exhibition.

The program will then proceed with technical sessions, poster sessions, strategic direction sessions, foresight sessions, workshops, and invited events.

During the technical sessions, in particular, each of PIARC's Technical Committees and Task Forces will present its achievements for the current work cycle (2020-2023). Some papers from the international call will also be presented.

The Congress will conclude on the afternoon of October 6 with the closing ceremony.







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# **Monday, October 2**

# **Opening Ceremony**

Monday, October 2, 08:30-10:00 Room: Congress Hall, 1st, 2nd & 3rd floor

#### Opening speeches:

- · President of the Senate CZ Mr. Milos Vystrcil 5 mn
- · Minister of Transport CZ Mr Martin Kupka 5 mn
- · Minister of Transport SK Mr Pavol Lančarič 5 mn
- · Minister of Transport ES Raquel Sánchez Jiménez 5 mn
- · Mayor of Prague Mr Bohuslav Svoboda 5 mn
- · Mr Václav Neuvirt Česká silniční společnost 5 mn
- · Mr Nazir Alli PIARC president 10 mn
- Introduction to the Congress and the program by Patrick Malléjacq, Secretary General of PIARC 10 mn
- · Recognition of PIARC Committee members, by Nazir Alli, President of PIARC 10 mn
- Presentation of the PIARC 2023 Awards by Claudine Tremblay, Chair of the Communication Commission of PIARC, and by the financial partners of the Award 25 mn

### Coffee break

10:00-10:30

# **Ministerial Panel on Road Safety**

Monday, October 2, 10:30–12:30 Room: Congress Hall, 1st, 2nd & 3rd floor

Opening speech by Nazir Alli, President of PIARC

- · Jean Todt, Special Envoy of UN for Road Safety
- · ITF
- · Opening of the discussion by the Minister of Transport Martin Kupka
- · Tour de table presentations by the heads of delegations assigned to the RS panel
- · Closing of the session by the Minister of Transport Martin Kupka

# **Group Photo at 12:40**

### Lunch

12:30-14:00

# **Ministerial Panel on Cycling**

Monday, October 2, 14:15–16:15 Room: Congress Hall, 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> floor

PIARC opening statement Nazir Alli

- ITF
- · Opening of the discussion by the Minister of Transport Martin Kupka
- · Tour de table speeches by heads of delegations assigned to the cycling panel
- · Closing of the discussion by Minister Martin Kupka

# **Cultural program**

16:00-16:30 Congress Hall, 1st, 2nd & 3rd floor

# **Opening of the Exhibition**

16:30-17:00 Congress Hall Foyer 2-3, 2<sup>nd</sup> & 3<sup>rd</sup> floor

# **Welcome Reception**

17:00-19:00

# **Tuesday, October 3**

# K1 Keynote 1 – Financing of reconstruction of road infrastructure after war in Ukraine and overall future of financing public infrastructure development

Tuesday, October 3, 08:30–09:15 Room: Congress Hall, 1st, 2nd & 3rd floor

This keynote speech will be delivered by Ivan Miklos.

Mr. Miklos is Distinguished Associate Fellow for Economic Growth & Sustainability Programme at GLOBSEC, President of MESA10, and Former Deputy Prime Minister and Minister of Finance of the Slovak Republic.

Mr. Miklos will discuss the financing of reconstruction of road infrastructure after war in Ukraine and overall future of financing public infrastructure development and operations in Europe.

# **CSE1 Closed Side Event 1 - CEDR Governing Board**

09:00-13:00 Chamber Hall, 3rd floor

# FS01 Foresight Session 01 – Sustainable finance and international policies for the SDGs 2030

Tuesday, October 3, 09:30–13:00 Room: South Hall 1, 1st floor

Chair: Mr. Francesco Micci (PIARC/World Road Association) / Mr. Jari Kauppila (International Transport Forum at the OECD)

The Foresight Session, co-organized by PIARC/World Road Association's International Technical Committee 1.3 – Finance & Procurement and the International Transport Forum (ITF) at the OECD, will bring together lead officers and senior experts from main international institutions, organizations and financial sector, involved in the transport and road sector.

The prestigious panel of speakers will analyse and discuss both the latest international policies, including innovative sustainable procurement and Public-Private Partnerships' schemes, and the structuring and deployment of mechanisms and instruments of sustainable finance, as well as alternative sources of funding, for road networks, road infrastructure projects and mobility at the international level.

A high-level debate (keynote presentations plus a panel discussion/Q&A session) focussed on fundamental topics in line with the 2030 Agenda of the United Nations (17 SDGs) and related to current and future main issues for the road and mobility sector worldwide; including goals as the progressive decarbonization of road infrastructure and the correct development of carbon neutral mobility, in order to reach a balanced and comprehensive long-term sustainability for the road and mobility sector. Considering multiple implications at different levels (e.g. policy, financial, fiscal, environmental, social) and connecting successful sustainable policies and best practices in funding and financing. Sharing the latest trends both in the road and mobility sector (i.e. transport sector) and in the financial sector at the international level.

The Foresight Session will address the following questions/topics:

- Trends regarding sustainable funding/financing in the road infrastructure and mobility sector at the international level, including decarbonising road infrastructure and developing carbonneutral mobility
- · Innovative sustainable finance schemes/instruments applied to main road sector's projects and national networks, as well as in the mobility sector
- International sustainable policies, procurement mechanisms and PPPs for the road and mobility sector worldwide, aligned with the 2030 Agenda of the U.N. (17 SDGs).

#### Welcome

Mr. Nazir Alli, President, PIARC (World Road Association)
Mr. Patrick Malléjacq, Secretary General, PIARC (World Road Association)

#### Session introduction

- PIARC/World Road Association Outlook (2020–2023): TC 1.3 Finance and Procurement
   & TC 1.4 Climate Change and Resilience of Road Networks
  - · Francesco MICCI Secretary, International TC 1.3 Finance and Procurement, PIARC
  - Caroline EVANS Chair, International TC 1.4 Climate Change and Resilience of Road Networks, PIARC

- · The financial implications of decarbonizing transport
  - · Young TAE KIM Secretary General, International Transport Forum at the OECD
  - Jari KAUPPILA Head of ITF Secretary-General's Office, International Transport Forum at the OECD
- The UNECE PPP and Infrastructure Evaluation and Rating System (PIERS): a tool to evaluate the sustainability of transport projects in support of the SDGs
  - · Tony BONNICI Chief Cooperation and Partnerships Section, UNECE

- · Financing Sustainable Transport in the Developing World
  - · Nicolas PELTIER-THIBERGE Global Director Transport Sector, World Bank
- · Financing and implementing sustainable road networks talking through EBRD's approach
  - · Ian JENNINGS Senior Specialist Urban Transport, European Bank for Reconstruction and Development (EBRD)
  - Donald MISHAXHIU Senior Banker Infrastructure Europe, European Bank for Reconstruction and Development (EBRD)

### Break

### **Presentations**

- · Financing and future proofing road networks
  - · James LEATHER Chief Transport Sector Group, Asian Development Bank (ADB)
- · Funding a credible a 1.5-degree transport future, mobility and infrastructure
  - · Paul VERMAAK Head of Standards, Climate Bonds Initiative (CBI)

# Panel discussion and Q&A

**Moderators:** Mr. Francesco Micci, Secretary, TC 1.3 – Finance and Procurement, PIARC (World Road Association) and Mr. Jari Kauppila, Head of the ITF Secretary-General's Office, International Transport Forum at the OECD Session Speakers

# Conclusion

Session Chairs and Speakers

# **Organization**

Organiser: Mr. Francesco Micci (PIARC/World Road Association)

Secretary: Ms. Bianka Jenei-Temes (International Transport Forum at the OECD)

# SDS4 Strategic Direction Session 4 – Resilient infrastructure – New challenges and initiatives for improving safety and sustainability

Tuesday, October 3, 09:30-13:00 Room: South Hall 2, 2<sup>nd</sup> floor

Chair: Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

This Strategic Direction Session is organised by PIARC's TC 4.1 Chair and addresses the Strategic Theme on Resilient Infrastructure. It will present the best practices shared by PIARC member countries on the following issues:

- · Digital Transformation
- · Infrastructure Monitoring
- · Asset Management
- · BIM

Eight countries from around the world submitted national reports on their state-of-the-art measures. This session will highlight best practices by PIARC member countries.

## Welcome and session introduction

Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

### **Moderator**

Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

#### **Presentations**

- · A vision for Digital Roads in the UK
  - · John PATERSON (United Kingdom) Vice chair of PIARC UK
- · Digital transformation of roads in Spain
  - · Ignacio González RODRIGUEZ (Ministerio de Transportes, Movilidad y Agenda Urbana, Spain)
- · Smart Solutions in Slovakia
  - · Zsolt BOROS (Strabag TPA, Slovak Republic)
- · Development of pavement deterioration models in Thailand
  - · Auckpath SAWANGSURIYA (Ministry of Transport, Thailand)

# **Questions and answers**

Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

#### **Break**

- · Technology solutions aligning heavy vehicle access to appropriate infrastructure in Australia
  - · Amy NAULLS (Austroads, Australia)
- · Resilient infrastructure
  - · Ingo KAUNDINYA (BASt, Germany)
- · Innovative monitoring of earthworks in Italy
  - · Enrico MITTIGA (ANAS, Italy)
- Supporting technologies for the inspection of aging infrastructure in Japan
  - · Shouichi FUNAMI (Japan)

# **Questions and Answers**

Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

# Conclusion

Session Chair: Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

# Organization

**Session Organisation and Secretariat:** Margo Briessinck, Chair of PIARC TC 4.1 on Pavements, Belgium

# TSTF2.2 Technical Session TF2.2 – Electric Road Systems (ERS)

Tuesday, October 3, 09:30–13:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Mr. Jan Pettersson, Chair of PIARC TF 2.2 on Electric Road Systems (ERS), Sweden

Electric road systems (ERS) represent a complement to stationary charging by charging the vehicles while they are moving. Electric roads can substantially increase the efficiency of e-mobility, increase the available utilization time of the vehicles, reduce battery size, and create a new profitable infrastructure for operators of electric road infrastructure.

## Welcome and session introduction

Jan Pettersson – Chair of TF2.2 (Sweden)

#### **Presentations**

- · Presentation 1 for Topic Technology assessment
  - · Patrick DUPRAT (France)
  - · Pierre DELAIGUE (France)
  - · Pascal ROSSIGNY (France)
  - · Andrew THEOBALD (United Kingdom)
- · Presentation 2 for Topic Business model, nosiness cases and stakeholders
  - · Britta SOMMER (Germany)
  - · Jesus Maria LEAL BERMEJO (Spain)
  - · Carlos SANTILLIAN (Mexico)
- · Presentation 3 for Topic Strategies and policies incl roadmaps
  - · Kenneth NATANAELSSON (Sweden)
  - · Bernard JACOB (France)
  - · Britta SOMMER (Germany)
  - · Tallis BLALACK (United States)

# **Questions and Answers**

Moderator: Jan Pettersson - Chair of TF2.2 (Sweden)

#### **Break**

#### Introduction

Session chair

- · Panel ERS Industry
  - · Richard Van Den Pool, ENRX
  - · Patrik Åkerman, Siemens
  - · Håkan Sundelin, Electreon
  - · Patrick Duprat, Alstom
  - · Dan Zethraeuz, ElonRoad
  - · Oscar de Buen, Mexican Ministry of Communications and Transport
- · Arena of the Future A35 Brebemi Dynamic Wireless Power Transfer project.
  - · Dario ZANINELLI (Politecnico di Milano, Italy)
- Design of a road demonstrator for charging of electric vehicles by induction
  - · Pierre HORNYCH (Université Gustave Eiffel, France)

- Balancing missed opportunities and stranded assets Guiding principles of strategy development and implementation for climate neutral road freight transport from an economic point of view
  - · Carolin GRÜTER (Bauhaus-Universität Weimar, Infrastructure Economics and Management (BUW-IWM), Germany)
- · The electric road: an efficient solution to decarbonize road transport
  - · Bernard JACOB (Université Gustave Eiffel, France)

# **Questions and Answers**

**Moderator:** Jan Pettersson – Chair of TF2.2 (Sweden)

# Conclusion

Jan Pettersson – Chair of TF2.2 (Sweden)

# FS02 Foresight Session 02 – Harnessing Artificial Intelligence and Big Data for Safer and Optimized Road Mobility

Tuesday, October 3, 09:30–13:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Mr. Magid Elabyad, Senior Vice President, IRF Global

Artificial Intelligence (AI) and Big Data are at the forefront of a transformational shift in the way transportation agencies conceptualize, plan, and implement essential road services. Powered by Machine Learning (ML) algorithms, these emerging technologies are supplanting decades-old, rigid methodologies based on limited variables and inflexible formulas. Unlike these traditional approaches, AI-driven methods offer the flexibility to continuously adapt, providing ever-improving solutions as they process increasingly vast and complex sets of data.

This comprehensive session aims to equip road agencies with foundational knowledge in AI and Big Data, by delving into both theoretical frameworks and practical applications for mining road asset and traffic data. Our focus will be on leveraging this invaluable information to make informed decisions in the realms of predictive road maintenance and enhanced safety management. Participants will leave the session with a nuanced understanding of current capabilities, as well as a forward-looking perspective on upcoming advancements. Most importantly, attendees will be wellpositioned to spearhead or contribute to initiatives that utilize AI and Big Data for the creation of safer and more efficient road systems.

#### Welcome and session introduction

Monica Olyslagers, Global Innovation Manager & Cities Specialist, iRAP

# Part 1 – AI for Safer Road Mobility

#### Introduction

Monica Olyslagers, Global Innovation Manager & Cities Specialist, iRAP

#### **Presentations**

- · Artificial Intelligence in Proactive Road Infrastructure Safety Management
  - · Anastasios DRAGOMANOVITS National Technical University of Athens (NTUA)
- Accelerating network safety assessments with Australian Road Agencies
  - · Peter JAMIESON Anditi
- · Intersection-level analysis
  - · Brian HOEFT Miovision

# **Questions and Answers**

Moderator: Monica Olyslagers, Global Innovation Manager & Cities Specialist, iRAP

# Conclusion

Monica Olyslagers, Global Innovation Manager & Cities Specialist, iRAP

# Part 2 - Al for Predictive Road Asset and Traffic Management

#### Introduction

Magid Elabyad, Senior Vice President, IRF Global

# **Presentations**

- · GIS based AI for Predictive Road Asset Management and Traffic Prediction
  - · Ian KOEPPEL Business Development Lead for Transportation Market, ESRI
- Opportunities for Road Asset Managers in the Space of Artificial Intelligence (AI), Computer Vision (CV) & Big Data (BD)
  - Dale HENDON Specialist, Economic Development and Tourism Office, Stafford County, VA Government
- · Damage detection by using Artificial Intelligence
  - Ernst FORSTNER Technical Director, STRUCINSPECT
- · Road Management Analysis of Bike Lanes Using AI
  - · Karsten BRONOWSKI Development Manager, XenomatiX

# **Questions and Answers**

Moderator: Magid Elabyad, Senior Vice President, IRF Global

#### Conclusion

Magid Elabyad, Senior Vice President, IRF Global

# **Organization**

Session Organiser: Magid Elabyad, Senior Vice President, IRF Global

Session Secretary: Nina Elter, Senior Advisor, IRF Global

# FS03 Foresight Session 03 – Enhancing transportation equity globally: Outlook, challenges, and future issues

Tuesday, October, 3 09:30-13:00 Room: Small Hall, Ground floor

Chair: Gloria J. Jeff, Chair TRB Committee on Transportation Equity

The concept of equity per the World Health Organization is "the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically."

In the context of the work done or impacted by transportation investments, policies, programs, and services this can generate lengthy, multi-layered, and intersectional conversation about how to develop solutions, who are the owners, stakeholders, and partners, when is the most effective time to include the various roles in the process of determining what, when, where, and how much to spend. Throughout the global transportation sector there are initiatives to address the various attributes of equity.

This Foresight Session will include representatives that in the first part will discuss the "why" of addressing equity in transport. This part will share the role of equity in transportation historically, the current state of policies, research, and activities. It will also provide case studies that establish the framework for global framing of equity in transport. Lastly it will include identification of the challenges to address the cultural, social, economic, demographic, and geographic attributes of equity and identify areas for application of current research. The second part will focus on the typology of transport equity, future research focusing on development of metrics, data collection (quantitative and qualitative data) and responses to the "why" of addressing equity in transportation The final session will end with a Call to Action.

The panelists will present the work underway in the United States, Europe, Africa, and the Asian Pacific regions.

# Part 1 – Equity –The evolution of decision–making and impact assessment for transport systems

# The purpose and importance of addressing Equity and Transportation

Nazir Alli, PIARC President

#### **Presentations**

- · Transportation and Equity: A historical overview
  - · Victoria SHEEHAN Transportation Research Board
- Definition of Equity in Transportation and its supporting principals from Conference for Advancing Transportation Equity
  - · Gloria J. JEFF Chair TRB Committee on Transportation Equity
- Current Equity Activities
  - · Joseph AHISSOU (Benin)
  - · Mark Henry RUBARENZYA (Uganda)

#### Panel roundtable

#### Conclusion

Gloria J. Jeff, Chair TRB Committee on Transportation Equity

# Part 2 – Equity and Transportation in the Future – The future is an undiscovered country

# **Highlights of Part 1**

Anna Wildt-Persson, Trafikverket Sweden (PIARC TC 1.1)

#### **Presentations**

- How transportation decision making processes should consider addressing benefits and burdens to people and business impacted by transportation investments, facilities, or services
- · Binyam REJA World Bank
  - · Mark Henry RUBARENZYA (Uganda)
- · Research applications Case studies
  - · Floridea DI CIOMMO (Italy) Co-director of cambiaMO (ECTRI)

# **Audience participation**

# Questions, suggestions, knowledge and sharing of current ideas and practices

Anna Wildt-Persson, Trafikverket Sweden (PIARC TC 1.1)

## **Call for action**

# (include specific actions and possible timeline)

Victoria Sheehan, TRB Anna Wildt-Persson, Trafikverket Sweden (PIARC TC 1.1)

# **Conclusion**

Gloria J. Jeff, Chair TRB Committee on Transportation Equity

# Organisation

#### **Session Organisers:**

Gloria J. Jeff, Chair TRB Committee on Equity and Transportation and AASHTO Equity Task Force Caroline Alméras, Secretary General ECTRI and Co-Chair, TRB International Coordinating Council Christos Xenophontos, Co-Chair, TRB International Coordinating Council, Chair, AASHTO Committee on Performance Based Management, and Chair, PIARC TC 1.1, Performance of Transport Administrations

Session Secretary: Gloria J. Jeff

# **TS1.5 Technical Session 1.5 – Disaster Management**

Tuesday, October 3, 09:30–13:00 Room: Panorama Hall, 1st floor

Chair: Mr. Yukio Adachi, Chair of PIARC TC 1.5 on Disaster Management, Japan

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issues: 1.5.1 Information and communication in disaster management. 1.5.2 Financial aspects of disaster management. 1.5.3 Update the Disaster Management Manual. The session will be complemented by the outcomes of the call for papers on the following topics: 1. Societal resilience in the face of disasters. 2. Lessons learned from extreme natural events and their contribution to improving resilience. 3. The role of information technology in enhancing socio economic resilience.

### Welcome and session introduction

Yukio Adachi, Chair of PIARC TC 1.5 on Disaster Management, Japan

#### **Presentations**

- · Information and communication in disaster management
  - · Jan GRUBER (Czech Republic) Member of PIARC TC 1.5
- · Development of a Roadway Flood Severity Index
  - · Amanda SIEMS-ANDERSON (National Center for Atmospheric Research, United States)
- · Financial aspect of disaster management
  - · Alain LEFEVBRE (Belgium) Members of PIARC TC 1.5
- · Slope Instability Analysis In Fissured Clay Shales at Sumedang National Road
  - Aldiamar FAHMI (Implementation unit of Geotechnics, Tunnel and Structure, Directorate General of Highway, Ministry of Public Works and Housing, Indonesia) – Member of PIARC TC 1.5
- · Update Disaster Management Manual
  - · Constantin ZBARNEA (Romania) Member of PIARC TC 1.5
- Damage, Effects and Lessons Learned in the Construction of the Oyon Ambo Road in the High Andean Area of Peru During El Niño in 2019
  - · Victor Andre ARIZA FLORES (UNIVERSIDAD NACIONAL MAYOR DE SAN MARCOS, Peru)
- · Actions in infrastructures after the volcanic eruption on the island of La Palma
  - · Fernando HERNÁNDEZ ALASTUEY (Dirección General de Carreteras. Ministerio de Transportes, Movilidad y Agenda Urbana., Spain)
- Disaster Response of Expressways in Kumamoto Prefecture, Japan, Due to the Torrential Rain in July 2020
  - · Ryuto OGATA (West Nippon Expressway Company Limited, Japan)

# **Questions and Answers**

Moderators: Marcelo Medina and Neil Fisher, Members of PIARC TC 1.5, Chile and New Zealand

#### Conclusion

Session Chair: Yukio Adachi, Chair of PIARC TC 1.5 on Disaster Management, Japan

# **Organization**

Session Organiser: Yukio Adachi, Chair of PIARC TC 1.5 on Disaster Management, Japan

# WS01 Workshop 01 – Decarbonisation and circular economy of road construction and maintenance and their equipments

Tuesday, October 3, 09:30–13:00 Room: Club A, 1st floor

Chair: Breixo Gomez Meijide, Technical Director of EAPA and Christophe Nicodème, Director General of ERF

Road infrastructure is and will remain a symbol of social and economic progress: resilient and sustainable road infrastructure will be a key element in the transition towards green and smart mobility. All actors of the road community are now looking at solutions in this sense as well as to reduce GES and save energy consumption.

Routes de France and the European Union Road Federation, together with their partners all over the world will boost discussion over those topics.

# Welcome and session introduction

Christophe Nicodème, ERF Breixo Gomez Meijide, EAPA

### **Presentations**

- · Australia commitment to net zero by AfPA (Australia)
  - · Anna D'ANGELO (Australia) Director AFPA
- · Asphalt Pavements in Circular Economy by AMAAC (Mexico)
  - · Victor CINCIRE (Mexico) President AMAAC
  - · Mauricio CENTENO (Mexico) Technical Vice-President AMAAC
- Roadmap of Decarbonisation of the European Asphalt Industry, Examples to Decarbonise the Asphalt Industry in Europe by 55% in 2030, Green Public Procurement & Sustainable Contracts by Routes de France and EAPA (France & Europe)
  - · Christine LEROY (France) Technical Director, Routes de France
  - · Brice DELAPORTE (France) Technical Director, Routes de France
  - Breixo GOMEZ MEIJIDE Technical Director EAPA

# **Questions and Answers**

Christophe Nicodème, ERF Breixo Gomez Meijide, EAPA

#### **Break**

- · Decarbonisation in the Road Equipment Sector by ERF (Europe)
  - · Christophe NICODÈME ERF Director General
- · Re-use of asphalt on the highest level by JRCA (Japan)
  - · Kazunari HIRAKAWA (Japan) Director JRCA
- · The Road Forward A vision for net zero carbon emissions by NAPA (USA and Canada)
  - · Joseph SHACAT Sustainable Pavements Director NAPA (USA)
- South Africa's Progress and Ongoing Commitment to Reducing Its Carbon Footprint in the Asphalt Industry by SABITA (South Africa)
  - · Phil HENDRICKS (South Africa) Director SABITA

- · Bitumen emulsion: A technique of excellence for decarbonising road pavements by IBEF (International)
  - · María del Mar COLÁS Vice President IBEF (International)

# **Questions and Answers**

Moderators: Christophe Nicodème, ERF, and Breixo Gomez Meijide, EAPA

# **Conclusion**

Breixo Gomez Meijide, Technical Director of EAPA and Christophe Nicodème, Director General of ERF

# Organization

Session Organisation and Secretariat: Christine Leroy, Technical Director, François Chaignon, Head of International affairs and Jean-Claude Roffé, ERF Ambassador

# WS02 Workshop 02 – Zero means a lot: do urban mobility organizations have what it takes?

Tuesday, October 3, 11:30–13:00 Room: Club E, 1st floor

Chair: Pedro Homem de Gouveia, Senior Policy and Projects Manager, Coordinator for Safety and Security, POLIS

Investments in Road Safety technology are an important step in the right direction, with innovations targeting vehicles, infrastructure, and decision-making tools. But are organizations, and their professionals, able to reap the full benefits from these innovations? Where this is not the case, why? What are the obstacles, and how can we best overcome them?

That's a key question for EU project PHOEBE, which is developing a road safety assessment framework for urban areas that will bring together new techniques, new data sources, and new knowledge – and will be the jumping point for this interactive Workshop.

We'll start by providing food for thought, sharing the New Paradigm for Safe City Streets, presenting new solutions being developed by PHOEBE, and the results of a series of focus groups with professionals. These presentations will follow the Pecha Kucha\* model, to be brief and engaging. We'll then conduct a structured and facilitated group discussion on how public authorities and transport professionals can unlock the benefits of innovative Road Safety technology innovations. Routes de France and the European Union Road Federation, together with their partners all over the world will boost discussion over those topics.

## Welcome and session introduction

Pedro Homem de Gouveia, Senior Policy and Projects Manager, Coordinator for Safety and Security, POLIS Network

## **Presentations**

- · Australia's commitment to net zero by AfPA
  - · Anna D'ANGELO (Australia) Director AFPA
- How are professionals assessing the risk of VRUs in urban areas and how they think technology can support their work (or not)
  - Andréia LOPES DE AZEVEDO (Belgium) Project Manager, Coordinator for Active Travel and Health, POLIS Network

# Structured and facilitated group discussion

Are we there yet? What's stopping us? And how can we unlock the benefits?

# **Questions and Answers**

**Moderator:** Pedro Homem de Gouveia, Senior Policy and Projects Manager, Coordinator for Safety and Security, POLIS

#### Conclusion

**Session Chair:** Pedro Homem de Gouveia, Senior Policy and Projects Manager, Coordinator for Safety and Security, POLIS

# **Organization**

Session Organisation and Secretariat: POLIS Network

# WS03 Workshop 03 – Digital Infrastructure for Road Network Operations

Tuesday, October 3, 09:30–13:00 Room: Club H, 1st floor

Chair: Clarissa Han (Australia), Galen Mc Gill (United States) and Jennie Martin (United Kingdom), TC 2.4 working group leaders

This workshop session is organised by the PIARC TC2.4 Road Network Operations and ITS – WG2.4.2 Optimizing RNO decision making thought new technologies and digitalization. The key objective of WG2.4.2 in this cycle is to identify opportunities and best practices related to the application of data related technologies and data driven decision-making in order to improve the performance of the road network.

In this session, you will explore the dynamic impact of data and technology on road network operations, as it undergoes rapid transformation. The availability of enhanced data access and advanced data analytics has opened up exciting possibilities and applications for road network operators. These advancements not only facilitate the performance monitoring and planning for system improvements but also empower real-time operations. This workshop session will showcase ongoing projects and cutting-edge research in this domain from a wide range of countries and regions, while also delving into the potential opportunities for the future.

# Welcome and session introduction

- · Why discuss about digitalization of road network operations
  - · Valentina GALASSO (Italy) TC 2.4 Chair

#### **Presentations**

- · Introduction on Planning and Performance Monitoring topic
  - Clarissa HAN (Australia) Chief Technology Leader, National Transport Research Organisation, PIARC WG2.4.2 Co-Chair
- Development of An Interactive Dashboard For Traffic Analysis
  - Laura REY RAMOS (Spain) Head of Infrastructure Management Department in ICEACSA CONSULTORES, PIARC TC2.4 member
- · Regional Integrated Transportation Information System (RITIS)
  - Michael PACK (United States) CATT Laboratory Director and RITIS Program Manage, University of Maryland
- · Probe Vehicle Data as Input Source for Road Maintenance
  - · B. ZACHRISSON (Sweden) Invited Speaker
- · Changing the outlook on digitalization: what happen because of COVID-19 Pandemic
  - · Valentina GALASSO (Italy) TC 2.4 Chair and member of PIARC COVID-19 Response Team

## **Questions and Answers**

Moderator: Clarissa Han

#### **Break**

- · Introductory Comments Real time operations
  - Galen MCGILL (United States) System Operations and ITS Manager in Oregon Department of Transportation, PIARC WG2.4.2 Co-Chair

- · C-ITS Deployment in Europe: Status and Way Forward
  - Martin BOEHM (Austria) Head of Unit in AustriaTech Federal Agency for technological measures ltd, PIARC TC2.4 Member
- · Real Time Situational Awareness Platform
  - Matthew HALL (Australia) Senior Specialist Managed Motorways and Network Optimisation Victorian Department of Transport and Planning, PIARC TC 2.4 member

# **Questions and Answers**

#### **Moderator:**

- Galen McGill, System Operations and ITS Manager in Oregon Department of Transportation, USA, PIARC WG2.4.2 Co-Chair
- · LMICs Opportunities with ITS and C-ITS
  - · Jennie Martin (UK), Co-leader group TC2.4

## Panel discussion moderated by Jennie Martin (UK) with panelists:

- · Soumia Jannan (Morocco)
- · Mohamed Zmerli (Tunisia)
- · Gail Bester (South Africa)

# Conclusion

Session Chair: Valentina Galasso (Italy)

# **Organization**

Session Organiser: Valentina Galasso (Chair of TC 2.4)

Session Secretary: Clarissa Han, Jennie Martin and Gallen McGill

#### Lunch

13:00-14:30

# **Via Salis Commercial Symposium**

Tuesday, October 3, 13:15–14:15 Room: Panorama Hall, 1st floor

The upcoming opportunities for private capital in delivering sustainable transport infrastructure in the CEE

Main topics and questions to be discussed

- · What are the financing options for the CEE to complete its road & rail networks as desired?
- Can private investors deliver better design, maintenance and life cycle solutions compared to public investors?
- D4 motorway: the experience with the first pilot PPP project from the perspective of the state, the investors and the lenders.
- What are the up-coming opportunities in the Czech Republic regarding the transport investment program?

#### Panel Speakers

- · Christian Biegert, CEO Via Salis (PPP D4 motorway project company), Via Salis / Vinci Highways
- · Vojtěch Janeček, CFO Via Salis, Via Salis / Meridiam
- · Jean Baptiste Simon, Investment Director, Meridia
- · Martin Janeček, Head of PPP, MoT
- · Zbyněk Hořelica, CEO, SFDI
- · Tomáš Čoček, Deputy Director for Economy, Správa železnic
- · Jan Troják, Head of Structured Finance, ČSOB
- · Jan Brázda, Head of Sustainability & Project Finance, PwC

# **Posters for topics 13, 14, 15, 28**

14:00-18:30, North Hall, 2nd floor

# SDS3 Strategic Direction Session 3 – New challenges and initiatives for improving safety and sustainability

Tuesday, October 3, 14:30–18:00 Room: South Hall 1, 1st floor

Chair: Keiichi Tamura, Coordinator of Strategic Theme 3, Safety and Sustainability, Japan

This Strategic Direction Session is organised by PIARC's Strategic Theme Coordinator on Safety and Sustainability. We called for national reports featuring "New challenges and initiatives for improving safety and sustainability" for the Strategic Direction Session 3. More specifically, they were called with relation to the two key subjects. The first subject is "Creating safer road space and a vibrant community". We would like to discuss roads that are designed to be safe and comfortable for all road users, regardless of age or physical ability. The second is "Realizing a greener society". The environmental impacts of road traffic are a common problem experienced by all countries in the process of economic growth, and there is no respite for decarbonising transportation, in particular.

Thirteen countries from around the world submitted national reports on their state-of-the-art measures. This session will highlight best practices by the PIARC member countries including the following:

- $\cdot$  Road safety strategies with emphasis on the Safe System and Vision Zero approach
- · Protecting vulnerable road users
- · Traffic safety measures from a human factor perspective
- · Strategies to strengthen sustainability and contribute to the decarbonisation of road transport.

# Welcome and session introduction

Keiichi Tamura, Strategic Theme Coordinator for Theme 3, Safety and Sustainability, Japan

#### **Presentations**

- · Australia and New Zealand Austroads National Report
  - · Geoff ALLAN (Australia) Chair of the PIARC Strategic Planning Commission
- · Toward achievement of safe roads to support diverse needs for road utilization in Japan
  - · Hiroyuki FUKUSHIMA (Japan) Ministry of Land, Infrastructure, Transport and Tourism
- · How the UK is driving forward with safety
  - Justin WARD (United Kingdom) Vice-Chair of the PIARC Communications Commission / PIARC UK Secretariat
- · Highways and sustainability a contradiction in terms?
  - · Alexander WALCHER (Austria) Member of the PIARC Executive Committee
- Road safety system in the Slovak Republic
  - · Martin VAŠKO (Slovak Republic) Ministry of Transport of the Slovak Republic
- · Safety of the road system in Romania
  - Flavius Florin PAVAL (Romania) Member of Task Force 3.1 Road infrastructure and transport security

# **Questions and Answers**

Moderator: Lucy Wickham, TC 3.1 Road Safety Secretary, UK

#### **Break**

# **Presentations**

- · Implementing complete streets in the United States
  - Gloria SHEPHERD (United States) First Delegate of the United States and member of the PIARC Executive Committee
- · New challenges and initiatives for improving safety and sustainability
  - · Alberto MENDOZA DÍAZ (Mexico) First Delegate of Mexico
- · Measures to improve motorcyclists' safety Slovenian approach
  - · Uroš BRUMEC (Slovenia) Member of PIARC TC3.1 Road Safety
- Towards an integrated approach to asset management: optimised investment for a sustainable and safe road network
  - · Frédéric PELLERIN (Canada/Quebec) First Delegate of Canada-Québec
- · National Plan of Action for Road Safety 2022-2025
  - · Svein RINGEN (Norway) Member of PIARC TC3.1 Road Safety
- · New successful initiatives to improve road safety in Spain
  - · Roberto LLAMAS RUBIO (Spain) Secretary of PIARC TC3.1 Road Safety

# **Questions and Answers**

Moderator: José Carlos Valdecantos Álvarez, TC 3.2 Winter Service Secretary, Spain

#### Conclusion

**Session Chair:** Keiichi Tamura, Strategic Theme Coordinator for Theme 3, Safety and Sustainability, Japan

# Organization

**Session Organisation and Secretariat:** Keiichi Tamura, Strategic Theme Coordinator for Theme 3, Safety and Sustainability, Japan

# TS4.1 Technical Session 4.1 – Resilient Pavements

Tuesday, October 3, 14:30–18:00 Room: South Hall 2, 2<sup>nd</sup> floor

Chair: Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

This Technical Session is organised by PIARC Committee 4.1 on Resilient Pavements. It will present the work accomplished by the Committee during the 2020–2023 work cycle on the following issues:

- · Measures for improving resilience of pavements
- · Use of recycled materials in pavements
- · Innovative pavement maintenance and repair
- · Road monitoring based on Big Data

This session will also present the best articles identified through PIARC's international call for papers on call topics 39 (Reducing the carbon footprint of road pavements), 40 (Innovative maintenance methods and strategies) and 41 (New or innovative pavement materials).

### Welcome and introduction

Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

#### **Presentations**

- · Measures for improving resilience of pavements
  - · Leila HASHEMIAN (Canada) Member of PIARC TC 4.1
- A digital tool to support decision makings and to reduce the carbon footprint of road networks
  - · Koji NEGISHI (ORIS, France)
- · Use of recycled materials in pavements
  - · Emanuele TORALDO (Italy) Member of PIARC TC 4.1
- · Assessment of alternative pavement materials: case of Moroccan phosphogypsum
  - · Kahled LALOU (École Hassania des Travaux Publics, Morocco)
  - Amina ALAOUI SOULIMANI (Mission Manager at Office Chérifien des Phosphates and Professor at Ecole des Ponts ParisTech in Paris, France)

# **Questions and Answers**

Moderator: Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

#### **Break**

- · Innovative pavement maintenance and repair
  - · Eugénia CORREIA (Portugal) Member of PIARC TC 4.1
- · Development of the double-layer type precast concrete paving system
  - · Yokoyama TAKAHIRO (Obayashi Road Corporation, Japan)
- · Road monitoring based on Big Data
  - · Mehis LEIGRI (Estonia) Member of PIARC TC 4.1
- · Bonus System Contract smart motivator for improving paving quality and sustainability
  - · Anti PALMI (Estonian Transport Administration, Estonia)
  - · Marek TRUU (Head of R and D Department @ Teede Tehnokeskus AS, Estonia)
- · Development of solar pavement in Japan and its contribution to carbon neutrality
  - · Tetsuri KAJI (Nippo Corportation, Japan)

# **Questions and Answers**

Moderator: Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

# **Conclusion**

Session Chair: Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

# Organization

**Session Organisation and Secretariat:** Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

# TSTF2.1 Technical Session TF2.1 – New Mobility and its Impact on Road infrastructure and Transport

Tuesday, October 3, 14:30–18:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Ms. Ana Luz Jiménez Ortega, Chair of PIARC TF 2.1 on New Mobility and its Impact on Road infrastructure and Transport, Spain

The mobility ecosystem has experienced significant change in recent years: connectivity, cooperative systems, automated driving, mobility as a service (MaaS), micromobility, low emission vehicles – new technologies and use cases that need new approaches and answers from road authorities and agencies.

The session would be organized in two parts, including 4 presentations in each one.

In the first part, the presentations will be developed by members of the task force and will be based on the findings of the analysis developed in the literature review and the survey developed by the Task force.

The second part of the technical session is reserved to the experts that have submited papers that have been selected by the expert panels due to their interest for PIARC.

## Welcome and session introduction

Ana Luz Jiménez, TF 2.1 Chair (Spain)

## **Presentations**

- External Survey launched by TF 2.1
  - · Antonio GRANADO (Spain)
  - Jean-François RIOUX (Canada/Quebec)
- Mobility Innovations Impacting RNO
  - · Martin BÖHM (Austria)
  - · Paolo MALTESE (Switzerland)
- · Horizontal Issues: Business Model and Financial issues regarding new technologies
  - · Jonathan SPEAR (United Kingdom)
  - · Paolo MALTESE (Switzerland)
- · Conclusions and Recommendations from TF 2.1 Literature Review
  - · Abdelmename HEDHLI (France)
  - · Suzuki SHOICHI (Japan)

# **Questions and Answers**

Moderator: Ana Luz Jiménez, TF 2.1 Chair (Spain)

#### **Break**

- Evaluation of machine detection of road markings for connected and automated vehicles under adverse weather and light conditions with camera and lidar
  - · Amogh SAKPAL (fka GmbH, Germany)
- · The Effect of Connected and Automated Vehicles on Traffic Management
  - · Tamás Attila TOMASCHEK (Hungarian Public Roads, Hungary)
- · Effect of Truck Platooning on Rutting Formation of Flexible Pavements
  - · Paulina LEIVA PADILLA (Université Gustave Eiffel Campus Nantes, France)

- · Anas Green Island Innovation for more sustainable, efficient and connected mobility
  - · Valentina CHERUBINI (ANAS S.p.A., Italy)

# **Questions and Answers**

Moderator: Ana Luz Jiménez, TF 2.1 Chair (Spain)

# **Conclusion**

Ana Luz Jiménez, TF 2.1 Chair (Spain)

# FS04 Foresight Session 04 – Latin American Rural Roads: a Gateway to Development

Tuesday, October 3, 14:30–18:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Antonio Silveira, Physical Infrastructure and Digital Transformation Manager, CAF

As 90% of the rural road network in Latin America and the Caribbean is unpaved, most rural inhabitants lack decent mobility, thus hindering the exercise of various human rights such as access to education, health, culture, and work (OHCHR 2008). This situation leads to the emigration of rural dwellers to cities, causing uprooting of families and the growth of megacities.

Rural transport infrastructure contributes to national cohesion and a more balanced territorial occupation. They are often the only manifest government intervention in remote areas – whose inhabitants traditionally exhibit a feeling of abandonment – and the precursor of other services such as drinking water, electricity, and telecommunications.

The objective of this session is to highlight the social benefits that rural road programs generate in Latin America and the Caribbean. They usually demand rather modest investments, although they can promote productive, institutional, and socially inclusive and sustainable transformations, contributing to sustainable development and the creation of new job opportunities.

During this session, CAF will present its newly publication Rural Roads, A Door to Development and territorial connectivity. This document includes guidelines for the construction of these important low-traffic roads. We would also share Latin American experiences with high developmental impact.

The session will feature the prominent presence of several ministers from Latin America and the Caribbean who will outline the benefits of rural roads, as well as their viewpoints on institutional challenges they must face in the rural road network development. They will also discuss the existing obstacles to ensuring the necessary physical and operational conditions to provide adequate connectivity in rural areas.

Ministers from Latin America and the Caribbean will be providing their viewpoints on institutional challenges in the rural road network.

# Part 1 - Rural Roads in Latin America

- · Introduction: Rural Roads in Latin America: Opportunities and Challenges
  - · Antonio SILVEIRA Physical Infrastructure and Digital Transformation Lead Manager, CAF
- · CAF Rural Roads Guide Presentation
  - · Hernán OTONIEL (Colombia) CAF consultant

# Part 2 – Latin American countries' experiences

Speakers will present their country experiences and programme prioritisation, and discuss lessons learnt.

- · Rural Roads Programs in Paraguay
  - · Claudia CENTURIÓN (Paraguay) Minister of Public Works and Communications
- · Rural Roads Programs in Panama
  - · Rafael José SABONGE VILAR (Panama) Minister of Public Works
- · Colombia's Path to "Total Peace"
  - · William CAMARGO (Colombia) Minister of Transport
- · Proregion Programme
  - · Ramiro PASCUAL (Operations Portfolio Coordinator, CAF)

Discussion panel with the above speakers

Moderator: Sandra Conde, Transport and Energy Director, CAF

#### **Break**

# Part 3 – International financing cases

Speakers will present their case studies, focussing on socio-economic return from investments, the private sector funding role, and multilateral funding criteria.

- Case Study 1: Development Programmes
  - · Manuel BENARD Senior Investment Operations Specialist, AIIB, Beijing
- · Case Study 2: Roads4people: ORIS&UNIDO
  - · Susanna ZAMMATARO (Switzerland) Director, IRF
- · Case Study 3: Green funds financing
  - · Nicolás ESTUPIÑAN Infrastructure Operations Director, CAF
- · Case Study 4: African Case
  - · Isabel FERNÁNDEZ (Spain) Kenya and Zambia Project Manager, KUBAKA

Discussion panel with the above speakers

Moderator: Mónica López, Transport Coordinator, CAF

# Part 4 – Institutional challenges

Moderator: Hector Varela, Transport Infrastructure Specialist, CAF

Speakers will in a discussion panel discuss the challenges faced when developing programs; common administrative and financial barriers; and processes of procurement, monitoring, and implementation of transparency policies.

#### Speakers:

- · Claudia Centurión, Minister of Public Works and Communications, Paraguay
- · Rafael José Sabonge Vilar, Minister of Public Works, Panamá
- · William F. Camargo, Minister of Transport, Colombia
- · Nicolás Estupiñan, Infrastructure Operations Director, CAF

# **Closing words**

Antonio Silveira, Physical Infrastructure and Digital Transformation Manager, CAF

# Organization

Session Organiser: CAF – Development Bank of Latin America and the Caribbean

Session Secretary: Hector Varela, Transport Infrastructure Specialist, CAF

# FS05 Foresight Session 05 – Safe designs and speeds for active mobility and multimodal transport

Tuesday, October 3, 14:30–16:00 Room: Small Hall, Ground floor

Chair: Mr. Ahmed Ksentini, Secretary General of the Tunisian Road Association (ATR), Member of TC3.1 Technical Committee

The Global Plan for the Decade of Action for Road Safety 2021–2030 sets a target of halving deaths and injuries by 2030, and jurisdictions are increasingly aiming to achieve vision zero by 2050. With more than 70% of the global population expected to live in urban settings by 2030, ensuring that road designs and speeds are fundamentally safe for all modes, abilities, and journeys in villages, towns and cities will be essential in achieving not only safety targets but also in facilitating efficient movement of large and growing populations and minimising climate and environmental impact. In this session participants will discuss recent experience in the application of safe system approaches to creating environments that promote active mobility and multimodal transport, and share updates on tools that that help planners, designers and managers create safe roads and streets.

## Welcome and session introduction

Ahmed Ksentini, Secretary General of the Tunisian Road Association (ATR)

#### **Presentations**

- · Transforming streets for the people that use them [LMIC case study to be confirmed]
  - · Paul SUPAWANICH Global Designing Cities Initiative (GDCI) / Road authority official
- · Creating safe environments with enhanced urban safety assessment tools
  - · TBC
- Interactive survey on key design issues with session audience
  - · Samar ABOURAAD Safer Journeys Specialist, iRAP
- Tools for safe cycling and schools: CycleRAP, Star Ratings for Schools (SR4S) and the Youth Engagement App (YEA)
  - · Monica OLYSLAGERS (Netherlands) Global Innovation Manager and Cities Specialist
- · Looking to the future: Predictive Approaches for Safer Urban Environments Horizon Project Phoebe
  - · Pedro HOMEM DE GOUVEIA Senior Policy & Project Manager, POLIS

# **Questions and answers**

Ahmed Ksentini, Secretary General of the Tunisian Road Association (ATR)

#### Conclusion

Ahmed Ksentini

# **Organization**

Session Organiser and Secretary: Greg Smith, International Road Assessment Programme (iRAP)

# FS06 Foresight session 06 – Game-changing trends in road project delivery

Tuesday, October 3, 16:30–18:00 Room: Small Hall, Ground floor

Chair: Magid Elabyad, Senior Vice President, International Road Federation

Emerging technologies are poised to revolutionize not just how we use the roadways of the future, but also how we design and construct them. Organizations that effectively harness the power of Building Information Modeling, construction automation, and advanced decision-support tools will experience a significant transformation in their operational efficiency and financial performance. Designed as an interactive stakeholder roundtable, this forward-looking session will explore groundbreaking trends and dissect their implications, fostering enhanced collaboration between road agencies and contractors.

### Introduction

Magid Elabyad, Senior Vice President, International Road Federation

#### **Presentations**

- · Digital Roads of the Future Vision for the transformation
  - Nevena VAJDIC Digital Roads of the Future (DRF) Senior Project Manager & IRF Fellow (Class of 2009)
  - · Patrick MCKENNA Director, Missouri Department of Transportation
- · Disruptive Accelerating Innovations with BIM Infra
  - · Veit APPELT (Germany) TU Dresden
- · Al RoadTech: Game-changing Trends in Road Project Delivery and Maintenance
  - · Amsyar FAIZ (Malaysia) Director, OFO Tech Sdn. Bhd.

# **Organization**

Session Organizer: Magid Elabyad, Senior Vice President, IRF Global

Session Secretary: Nina Elter, Senior Advisor, IRF Global

# TSTF1.3 Technical Session TF 1.1 and TF 1.3 Well-Prepared Projects including LMIC

Tuesday, October 3, 14:30–18:00 Room: Panorama Hall, 1st floor

Chair: Ms. Monique Aubry, Canada, and Mr. Michel Demarre, France, Chairs of PIARC TF 1.1 and TF 1.3 on Well-Prepared Projects including LMIC

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issue: 1.1.1 Well-prepared projects. 1.3.2 Well-prepared projects in LMIC. The session will be complemented by the outcomes of the call for papers on the following topic: 1. Well-prepared projects as a strategy to face uncertainty and to deliver better transportation solutions.

# Welcome and session introduction

Ms. Monique Aubry, Canada, and Mr. Michel Demarre, France, Chairs of PIARC TF 1.1 and TF 1.3 on Well-Prepared Projects including LMIC

#### **Presentations**

- Achieving Performance in Major Public Infrastructure Projects: The Case of Road Works in Senegal
  - Mohamed LAYE (AGEROUTE Ministère des Infrastructures, des Transports Terrestres et du Désenclavement du Sénégal, Senegal)
- Value Engineering in Project Preparation for Better Engineering Services and Accelerating Infrastructure Delivery
  - · Frieska Evita AYURANANDA (Directorate General of Highways Ministry of Public Works and Housing, Indonesia)
- · Nusantara Capital City: Road Development to Gain Sustainable City of the Future
  - Septiyati GANJARSARI (Directorate General of Highways, Ministry of Public Works and Housing, Indonesia)
- · Infrastructure Financing: The GLOPRAM Model
  - · Vincent PIRON (Fédération Nationale des Travaux Publics (FNTP), France)
- · The SOURCE Platform
  - · Christophe DOSSARPS (CEO SIF-SOURCE, France)

# **Questions and Answers**

O/A – Moderator

#### Conclusion

Ms. Monique Aubry, Canada, and Mr. Michel Demarre, France, Chairs of PIARC TF 1.1 and TF 1.3 on Well-Prepared Projects including LMIC

# **Organization**

**Session Organiser:** Ms. Monique Aubry, Canada, and Mr. Michel Demarre, France, Chairs of PIARC TF 1.1 and TF 1.3 on Well-Prepared Projects including LMIC

# WS04 Workshop 04 – Mitigation of bridge failure by large overloads

Tuesday, October 3, 14:30–18:00 Room: Club A, 1st floor

Chair: Bernard Jacob, PIARC Committee 2.3 on Freight and Kiyohiro Imai, PIARC Committee 4.2 on Bridges

Existing bridges, above all aged or partly damaged structures, are sensitive to traffic overloads. Legally loaded vehicles, within the general weight limits and regulation in force, authorized abnormal loads, or illegally overloaded vehicles may cross bridges above their capacity. Crossing a posted bridge above the limit is an infringement, but with penalties much lower than the potential consequences for the bridge. The consequences may be very costly in case of severe damages, or even because of a bridge closure, and in case of a collapse, fatalities and severe injuries may occur. Vehicles, loaded above an acceptable limit, if this limit is unknown or not displayed, may also cross non-posted bridges.

To mitigate such adverse events, a procedure in several step may be implemented. It will be presented and analysed in this workshop:

- 1. Identify the sensitive existing bridges exposed to high loads and overloads
- 2. Monitor the traffic loads on each sensitive bridge, either permanently or during survey periods.
- 3. Various and graduated measures can be implemented to mitigate (large) overloads on bridges. The workshop is co-organised and supported by PIARC Committee TC2.3 (freight), and above all its WG2.3.1 on "Overload detection by WIM", and PIARC Committee TC4.2 (bridges). The output of the PIARC special project on Overloads carried out in 2020 will also be used. International organisations are involved such as: ASECAP, FEHRL, FHWA, ISWIM...

# Welcome and session introduction

Bernard Jacob, Universite Gustave Eiffel, France, CT 2.3

#### **Presentations**

Moderators: Bernard Jacob (TC2.3), Gonzalo Arias Hofman (TC4.2)

- · Overloads and Bridge Safety in the USA
  - · Joey HARTMAN (United States) FHWA, TC 4.2
- Overloaded vehicles, fatigue damage and enforcement on the Honshu Shikoku Bridge Expressway in Japan
  - · Kiyohiro IMAI (Japan) Honshu-Shikoku Bridge Expressway Co., TC 4.2
- · Mitigation of large overloads on sensitive bridges
  - · Bernard JACOB (France) University Gustave Eiffel, TC 2.3
- Traffic overloads on bridges in Belgium: from traffic mitigation to WIM direct enforcement
  - · Pierre GILLES (Belgium) Walloon Public Service, TC 4.2
- How WIM-systems help to protect bridges; Identification of sensitive bridges by the load-bearing index
  - · Yvonne-Christine GUNREBEN (Germany) BMDV, TC 4.2
  - · Jens DIERKE (Germany) BAST, TC 2.3
- · Effect of modern traffic on safety of older bridges
  - · Aleš ŽNIDARIČ (ZAG., Slovenia) ZAG, TC 4.2
  - · Dimitrios PAPASTERGIOU (Switzerland) FEDRO, TC 4.2
- · Managing the impacts of non-complaint heavy vehicles on Queensland bridges
  - Rob HEYWOOD (Australia) Director, Heywood Engineering Solutions and FMA Engineering Services, Queensland
  - Torill PAPE (Australia) Director (Structures Design, Review and Standards), Department of Transport and Main Roads, Queensland

## **Break**

# **Panel Discussion**

# Moderators: Olivier Quoy (TC2.3), Imai Kiyohiro (TC4.2) Panelists:

- · Bernard Jacob, UGE, France
- · Nicolas Bardou, Vinci Autoroutes, France
- · Malika Seddi, ASECAP (pending confirmation)
- · Dr Erwin Pilch, Asfinag, Austria
- · Livia Pardi, Autostrade, Italy (pending confirmation)
- · Aleš Žnidarič, ZAG, Slovenia and FEHRL President
- · Joey Hartmann, FHWA, USA
- · Rob Heywood or Torill Pape, Queensland, Australia
- · Heungbae Gil, South Korea
- · Matias Valenzuela, PUCV, Chile
- · TBD, South Africa
- · TBD, Tanzania

The panel discussion will also include a debate with the audience.

### Conclusion

Bernard Jacob, PIARC Committee 2.3 on Freight and Kiyohiro Imai, PIARC Committee 4.2 on Bridges

# **Organization**

Session Organisation and Secretariat: Bernard Jacob (TC2.3) and Gonzalo Arias Hofman (TC4.2)

# WS05 Workshop 05 – The Transport Administration of the Future

Tuesday, October 3, 14:30–18:00 Room: Club E, 1<sup>st</sup> floor

Chair: Victoria Sheehan, Executive Director (Transportation Research Board), and Christos S. Xenophontos (Chair of PIARC TC 1.1)

This Workshop will bring together the work of PIARC's Technical Committee 1.1, Performance of Transport Administrations as it relates to the vision of the "Transport Administration of the Future"; AASHTO's NCHRP 20–24(138) Moonshot project on the development of a national transportation vision for the United States; and TRB's NCHRP 08–127 research project on the impacts of disruptive technologies on the performance of transportation agencies. It will also provide a global perspective on the vision of the Transport Administration of the future by inviting representatives from Africa, Asia, Australia, Europe, and South America to share their perspective and vision for the future of transport administrations. Of particular interest would be to share the perspective on the "North Star" of Transport Administrations as it relates to serving customers and creating public value; the transformational approach needed as a result of the new technologies and business models; and the significance of the Transport Administration of the future addressing issues of equity, diversity, and inclusiveness in the workforce of the future.

#### Welcome and introduction

Christos S. Xenophontos, TC 1.1 Chair, Rhode Island Dept. of Transportation, USA

#### Part 1

- · Introduction
  - · Shailen Bhatt, USA
- The Transport Agency of the Future
  - · Jonathan SPEAR (Atkins Acuity, United Kingdom) TC 1.1

Panel discussion representing different road agencies from around the world (Australia, Africa, Europe, North America, South America) on the challenges and opportunities for the transport agency of the future

- · Nazir Alli (Africa South Africa)
- · Alan Colegate (Australia Western Australia)
- · Susanne Nielsen Skovgaard (Europe Sweden)
- · Carlos Braceras (North America USA)
- · Patricia Mazzitelli (South America Argentina)

## **Questions and Answers**

Moderator: Shailen Bhatt, USA

#### Conclusion

Shailen Bhatt, USA

#### **Break**

#### Part 2

- · Introduction
  - · Victoria Sheehan, USA
- · Collective and Individual Actions for State DOTS Envisioning and Realizing the Next Era of America's Transportation NCHRP 20–24(138)
  - · Carlos BRACERAS (United States)

Panel Discussion representing different Modes (ERTICO, IATR, IBTTA, PIARC, UITP) on policy goals or issues that must be addressed in the future and whether the existing organizational structure will or will not help meet those goals – i.e., access, climate change impacts, decarbonization, equity, sustainability, etc.

- · Angelos Amditis (ERTICO)
- · Matt Daus (IATR)
- · Emanuela Stocchi (IBTTA)
- · Patrick Malléjacq (PIARC)
- · Sylvain Haon (UITP)

### **Questions and Answers**

Victoria Sheehan, USA

#### Conclusion

Victoria Sheehan, USA

### **Organization**

**Session Organisation:** Technical Committee 1.1, Performance of Transport Administrations

Session Secretariat: Deanna Belden (PIARC TC 1.1) and John Kaliski (TRB)

# WS06 Workshop 06 – Climate Change Adaptation Framework

Tuesday, October 3, 14:30–18:00 Room: Club H, 1st floor

Chair: Stuart Woods, Waka Kotahi NZ Transport Agency, TC 1.4 member, New Zealand

PIARC International Climate Change Adaptation Framework will be presented at the Congress in Prague, in the workshop session. The purpose of this workshop is to introduce the Framework step by step, provide examples and answer questions from potential users.

The Framework guides road organisations through the process of developing an adaptation plan to address the impacts of climate change. It identifies the main issues and risks of climate change on road infrastructure and systems, through to selecting measures to address these impacts and integrate them, into decision-making. It is composed in a way that makes it applicable both for countries that have done some adaptation work earlier, and countries that are just starting to recognise climate change challenges.

The Framework consists of four main stages: Preparation, Assessment of vulnerability or risk, Identification and prioritisation of measures and integrating the findings into decision-making. Each step will be explained and supported by examples.

#### Welcome and session introduction

- · Outline of TC1.4 and Introduction of the Framework
  - · Caroline Evans, Chair PIARC TC1.4, Infrastructure Victoria
  - · Gordana Petkovic, NPRA

#### **Presentations**

- · The Preparation Stage Introduction
  - · Nkululeko LETA (Independent expert/ex-ReCAP, South Africa) TC 1.4
- · Baseline for adaptation
  - · Juan CAÑAVERA HERRERA (Foster+Partners, United Kingdom) TC 1.4
- · Scope, criticality, analysis options
  - · Juan Fernando MENDOZA (ITM, Mexico) TC 1.4 Secretary

## **Questions and Answers**

Moderator: Nkululeko Leta, ex-ReCAP

#### **Presentations**

- · Assessment pathways Introduction
  - · Gordana PETKOVIC (NPRA, Norway) TC 1.4
- · Vulnerability analysis
  - · Laura PARRA (CEDEX, Spain) TC 1.4
- · Risk analyses to climate impact
  - · Stuart WOODS (WK, New Zealand) TC 1.4
- · Resilience approach to climate impact
  - · Stuart WOODS (WK, New Zealand) TC 1.4

# **Questions and Answers**

Moderator: Gordana Petkovic. NPRA

#### **Presentations**

- · Introduction: Selecting and prioritising adaptation measures
  - · Laura PARRA (CEDEX, Spain) TC 1.4
- · Types of adaptation methods
  - · Louis BETTINI (Main Roads, Western Australia, Australia) TC 1.4 Secretary
- · Combining methods into strategies
  - · Caroline EVANS (Infrastructure Victoria, Australia) TC 1.4 Chair

### **Questions and Answers**

Moderator: Laura Parra, CEDEX

**Discussion:** Application of the Framework

all speakers

#### Conclusion

Session Chair: Stuart Woods, Gordana Petkovic, Laura Parra

## Organization

Session Organiser and Secretariat: Caroline Evans (Australia) TC 1.4 Climate change and resilience

# **Posters for National Reports**

14:30-18:00 Terrace 2B, 2<sup>nd</sup> floor

# **CSE1 Closed Side Event 1 – CEDR Governing Board**

14:30–18:30 Chamber Hall, 3<sup>rd</sup> floor

# Wednesday, October 4

# **K2** Keynote 2 – Innovation of the road sector: Inclusion, diversity and digitization

Wednesday, October 4, 08:30-09:15 Room: Congress Hall, 1st, 2nd & 3rd floor

Chair: Emanuela Stocchi, Director of International Affairs, AISCAT, Italy – PIARC Promotion of Gender Inclusion and Diversity Team, PIARC Executive Committee, and French-speaking Secretary for the Terminology Committee

This keynote session will discuss innovations of the road sector, including digitization and diversity. Keynote speakers will be:

- · Zdeněk Zajíček, President, Chamber of Commerce, Czech Republic
- · Young Tae Kim, Secretary General of the International Transport Forum (OECD)
- · Emanuela Stocchi, Chair of PIARC's Promotion of Gender Inclusion and Diversity team

This session will be moderated by Emanuela Stocchi, Chair of PIARC's Promotion of Gender Inclusion and Diversity team.

Posters for topics 16, 27, 39, 40, 41

09:15-13:30 North Hall, 2<sup>nd</sup> floor

# **TS3.1 Technical Session 3.1 – Road Safety**

Wednesday, October 4, 09:30-13:00 Room: South Hall 1, 1st floor

Chair: Mr. John Milton, Chair of PIARC TC 3.1 on Road Safety, USA

Road crashes continue to be a leading cause of death and serious injuries worldwide, which in turn leads to significant economic and societal impacts for countries of all sizes. Yet, the approaches to solving road safety problems are different based on the contexts and needs for a given roadway type or function. In lower- and middle-income countries (LMIC) road safety of vulnerable road users is a particular interest given the over representation of fatalities and serious injuries for these road users.

Presentations relate to the following topics:

- · Approaches to dealing with road safety issues for LMICs
- · Road safety audit and assessment applications for countries of all sizes
- · Applications for road safety inspections on existing roads
- · Proven safety countermeasures
- · Safe System approach

#### Welcome and session introduction

John Milton - TC 3.1 Chair

#### **Presentations**

- · Specific road safety issues for LMICs
  - · Ahmed KSONTINI (Tunisia)
  - · Hans GODTHELP (Netherlands)
- · Causal Factors, Impact and Post-Crash Care Challenges on Accidents Involving School Buses in Tanzania
  - · Godlisten Paul MSUMANJE (NATIONAL INSTITUTE OF TRANSPORT, Tanzania)
- Proven Countermeasures for road safety
  - · Jeffrey SHAW (United States)
  - Przemyslaw PADLO (Poland)
- · A voluntary safety excellence labelling: A way ahead for Road Restraint Systems (RRS)?
  - · Carlos AZPARREN CALVO (former Team Leader at the Technical Directorate of the Directorate General for Roads (Spanish Ministry of Transport, Mobility and Urban Agenda), Spain)

# **Questions and Answers**

Moderator: Lucy Wickham, United Kingdom

#### **Break**

#### **Presentations**

- · PIARC Updated Road Safety Audit Guidelines
  - · Stephen READ (United States)
- Assessment of the impact of a project on an existing road network through an integrated approach of Road Safety Inspection, Road Safety Audit and Road Safety Impact Assessment
  - Edoardo MAZZIA (FRED Engineering, Italy)
- · PIARC Updated Road Safety Manual
  - · Fabian MARSH (New Zealand)

- · Road Management System in Adverse Weather Conditions: Fog and Wind
  - · Laura REY RAMOS (empresa, Spain)
- GEFAHRENSTELLEN.DE Pro Portal / Harmobi How Traffic and Road User Data Can Contribute to a Better Understanding between the Different Road Users, to Safer Roads and to an Adequate Transport Infrastructure
  - · Michaela GRAHL (Initiative für sichere Straßen GmbH, Germany)
  - · Jörg EHLERS (RWTH Aachen University, Germany)

### **Questions and Answers**

Moderator: Lise Fournier, Canada-Québec

## **Session Closing and conclusion**

John Milton – TC 3.1 Chair

# **TS4.2 Technical Session 4.2 – Bridges**

Wednesday, October 4, 09:30-13:00 Room: South Hall 2. 2<sup>nd</sup> floor

Chair: Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

This Technical Session is organised by PIARC Technical Committee 4.2 on Bridges. It will present the work accomplished by the Committee during the 2020–2023 work cycle on the following issues:

- · Issue 4.2.1: Measures for increasing adaptability to climate change
- · Issue 4.2.2: Forensic engineering for structural failures
- Issue 4.2.3: Advancement of inspection techniques / technologies and bridge management systems
- · Issue 4.2.4: New rehabilitation materials and technologies
- · Issue 4.2.5: Damage-resilient bridges in seismic areas

This session will also present the best articles identified through PIARC's international call for papers on call topics including

- · Topic 42: Bridge resilience considering natural hazards
- · Topic 43: Advancement of inspection, repair and rehabilitation techniques / technologies
- · Topic 44: Forensic engineering for structural failures.

In addition, a round table discussion on "Measures for increasing adaptability to Climate Change" will be included.

#### Welcome and introduction

Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

#### **Presentations**

- · Forensic engineering for structural failures
  - · Joey HARTMANN (United States) PIARC TC 4.2 Secretary
- Procedures in forensic engineering applied to the old Cancura bridge, Los Lagos Region,
   Chile
  - · Matias VALENZUELA (Pontificia Universidad Católica de Valparaíso, Chile)

# **Questions and Answers**

Moderator: Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

### **Presentations**

- · Advancement of inspection techniques / technologies and bridge management systems
  - · Gonzalo ARIAS HOFMAN (Spain) PIARC TC 4.2 Secretary
- · New rehabilitation materials and technologies
  - · Pierre GILLES (Belgium) PIARC TC 4.2 Secretary
- Use of Ultra-High Performance Fiber Reinforced Concrete for the rehabilitation of Swiss Bridges
  - · Dimitrios PAPASTERGIOU (Switzerland) Federal Roads Office (FEDRO)

# **Questions and Answers**

Moderator: Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

#### **Break**

#### **Presentations**

- Use of Ultra-High Performance Fibre Reinforced Concrete for the rehabilitation of Swiss road bridges
  - Dimitrios PAPASTERGIOU (PIARC TC 4.2 Working Group leader, Federal Roads Office (FEDRO), Switzerland)
- · Shaking Table Tests of a Simply-Supported Bridge Scaled Model
  - · Luca RIGHETTI (ANAS SpA, Italy)

#### **Questions and Answers**

Moderator: Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

#### **Presentations**

- · Measures for increasing adaptability to Climate Change
  - · Heungbae GIL (South Korea) PIARC TC 4.2 Working Group Leader
- Round table discussion about Measures for increasing adaptability to Climate Change
  - · Moderator: Mr. Heungbae Gil, Korea Expressway Corporation, South Korea
  - · Ms. Carmen Swanwick, Utah Department of Transportation, USA
  - Ms. Hajar Zoubir, National Center of Road Studies and Research General Road Directorate, Morocco
  - · Mr. Kazuo Endo, Honshu Shikoku Bridge Expressway Co., Ltd., Japan
  - · Ms. Marta Pertierra Rodríguez, INES Engineering, Spain
  - · Mr. Matias Valenzuela, Ministry of Public Works, Chile
  - · Ms. Yvonne Gunreben, Federal Ministry of Digital and Transport, Germany

## **Questions and Answers**

Moderator: Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

#### Conclusion

Mr. Joey Hartmann, PIARC TC 4.2 Secretary, USA

## **Organization**

Session Organisation and Secretariat: Mr. Kiyohiro Imai, Chair of PIARC TC 4.2 Bridges, Japan

# SDS2 Strategic Direction Session 2 – Mobility and Equity

Wednesday, October 4, 09:30-13:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Mr. André Broto, PIARC Strategic Theme 2 Coordinator, France

- 1. This session will explore how road transport can meet people's needs while promoting equity:
- 2. Transport decarbonization equity impact.
- 3. Improving air quality in megacities.

Impact of digital transformation and long-term effects of COVID.

The four Strategic Direction Sessions are high-level sessions presenting future-oriented approaches to key issues in the road sector. These sessions will be based on national reports prepared by PIARC Member Countries, which capture national experiences and best practices.

#### Welcome and session introduction

André Broto, PIARC Strategic Theme 2 Coordinator, France

#### **Presentations**

- Spain's Safe, Sustainable and Connected Mobility Strategy 2030
  - Javier DE LAS HERAS MOLINA (Spain) Coordinator Support Unit, General Directorate for Roads, Ministry of Transport (MITMA)
- · Carbon neutral strategy of road in Japan
  - · Yoshiyuki SHIBAYAMA (Japan) Deputy Director, Environment, Safety and Risk Management Division, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism
- · Preparations for FIFA Qatar 2022 and lessons learned
  - Jamal Essa AL-ANSARI (Qatar) Assistant Manager, Roads Operations and Maintenance Department, Ashqhal
  - Brian STANFORTH (Qatar) Senior Advisor, Roads Operations and Maintenance Department, Ashghal
- · Matching automated driving and social need: how can regulation help? A French perspective
  - Xavier DELACHE (France) General Directorate for Infrastructure, Transport and Mobility, Ministry of Ecological Transition and Territorial Cohesion

# **Questions and answers**

Moderated by the session chair

#### **Break**

#### **Presentations**

- · Romania: Development and implementation of the Sustainable Urban Mobility Plan (SUMP) in relation with TEN-T road network
  - · Gheorghe LUCACI (Romania) University Politecnica Timisoara
- Aotearoa New Zealand Emissions Reduction Plan Australian National Walking And Cycling Participation Survey
  - · Amy NAULLS (AustRoads, Australia)
- · Italy: Mobility in Urban Areas
  - · Andrea SIMONE (Università di Bologna, Italy) Chair of PIARC TC 2.1 on Mobility in Urban Areas

# **Questions and answers**

Moderated by the session chair

# **Wrap up and Conclusions**

André Broto, PIARC Strategic Theme 2 Coordinator, France

# Organization

**Session secretary:** Jeayoun Kim, Technical Advisor for Strategic Theme 2, PIARC General Secretariat, South Korea

# FS07 Foresight session 07 – Envisioning scenarios for global supply chains and what they mean for national road authorities

Wednesday, October 4, 09:30–13:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Sabine Kuehschelm (Austrian Ministry of Transport / CEDR President)

The COVID-19 pandemic brought global supply chains to the forefront of attention. The re-industrialisation of many countries to build more resilience continues to reshape our networks. These build on pre-existing developments around digitalisation, decarbonisation, automation, demographics and consequences of a changing climate. Freight being an important factor in sustainable development and of logistics as a glue for a cohesive and vibrant society, Therefore, for governments and national road authorities it is essential to have an understanding of these ongoing developments. Considerations include the possible need to replan freight corridors to reflect changing routes and priorities. In addition, new services for the electrification and digitalisation of road freight and its better integration into the entire supply chain are required.

This session, in two parts, will first consider the scenarios envisioned by key actors in the global logistics sector and subsequently the consequences for road network operators. The session will focus on improving understanding and developing dialogue. It will be interactive with all audience participants and establish a basis on which interaction will continue in future PIARC and other stakeholder activities (eg CEDR COMPASS, TRB/AASHTO Moonshot).

#### Welcome and session introduction

Sabine Kuehschelm (Austrian Ministry of Transport / CEDR President)

# Part 1 – Scenarios envisioned for the global supply chains Keynote

Gernot Liedtke (Deutsches Zentrum für Luft- und Raumfahrt, DLR, Germany)

#### **Panel discussion**

Introduction of panel session and outline of format

Moderator: Caroline Mays (Texas Department of Transportation, USA)

- · Dialogue within panelists and with audience
  - · Sinikka Hartonen (One Sea Association, Finland)
  - · Jari Kauppila (International Transport Forum, ITF, Finland / France)
  - · Georgia Ayfantopoulou (CERTH, Greece) (tbc)
  - · Gernot Liedtke (Deutsches Zentrum für Luft- und Raumfahrt, DLR, Germany)

#### Conclusion

- · Response to discussion by Keynote
  - · Gernot Liedtke (Deutsches Zentrum für Luft- und Raumfahrt, DLR, Germany)
- · Wrap up by Moderator
  - · Caroline Mays (Texas Department of Transportation, USA)

#### Part 2 – What does this vision mean for roads?

Welcome by Moderator Steve Phillips, CEDR, Belgium

## **Keynote**

Shailen Bhatt (US Federal Highway Administration, USA)

#### **Panel discussion**

Introduction of panel session and outline of format

Moderator: Steve Phillips, CEDR, Belgium

- · Dialogue within panelists and with audience
  - · Sabine Kuehschelm (Austrian Ministry of Transport / CEDR President)
  - · Kathy Vandenmeersschaut (Agentschap Wegen en Verkeer, Belgium)
  - · Roger Millar (Washington State Department of Transportation / AASHTO, USA)
  - · Thomas Fabian (ACEA, Belgium)

#### Conclusion

- · Where next? How we will take this dialogue forward
  - · Steve Phillips (CEDR, Belgium)

# **Organization**

CEDR, ALICE, CLECAT, AASHTO, TRB and ECTRI

# SPS1 Special Project Session 1 – Social equity and social accessibility of the road sector

Wednesday, October 4, 09:30-13:00 Room: Small Hall, Ground floor

Chair: Fabio Pasquali, PIARC TC 1.2 Chair and POT member, Italy

- It can be argued that the mission of road and transport authorities is to ensure that the provision
  of adequate transportation services to all citizens. All areas are usually not served equally: major
  urban areas benefit from public transport services, which are usually subsidized by local and/
  or national governments, whereas rural areas have to rely mostly on individual road transport.
  In general, transport expenditure of rural households is higher than households in big cities. This
  inequality was relatively well accepted since it was balanced by a lower housing expenditure
  in rural areas compared to urban ones.
- The recent social development, forced by economic contingency, different growth trends and patterns, associated to the effects of the Covid-19 pandemic, have changed the overall picture of accessibility, mobility and core transport policies to answer new and old needs expressed by the stakeholders.
- The Session will address a sub-set of the notions of equity, answering the question if all segments of the population are served fairly, and accessibility, answering the question of all geographic areas are accessible to all who need it both in HIC (High Income Countries) and LMIC (Low Middle Income Countries).

#### Welcome and introduction session

Fabio Pasquali, PIARC TC 1.2 Chair and POT member, Italy

## PIARC Special Project "Social equity and social accessibility"

- · Introduction to the Special Project (if needed)
  - · Miguel CASO FLÓREZ (PIARC) Technical Director
- · Title to be confirmed
  - · Mehran ESKANDARI TORBAGHAN (University of Birmingham, United Kingdom)
- Title to be confirmed
  - · William AVIS (University of Birmingham, United Kingdom)

### **Questions and answers**

# Round table "Title to be confirmed" with contributions from the audience

Moderated by Fabio Pasquali, Session Chair, PIARC TC 1.2 Chair and POT member, Italy

- · Panelists:
  - · Mehran Eskandari Torbaghan, University of Birmingham, UK
  - · William Avis, University of Birmingham, UK
  - · Sisanda Dyubhele, PIARC TC 1.1 member and POT member, South Africa
  - · Miguel Caso Flórez, PIARC Technical Director

#### **Break**

# Social equity and social accessibility around the world

- · Title to be confirmed
  - · William AVIS (University of Birmingham, United Kingdom)
- · Institutionalizing Equity at the Federal Highway Administration, U.S. DOT.
  - · Gloria SHEPHERD (FHWA Executive Director, United States)

- · Kenyan study on accessibility
  - · Opuge OBUOLLOH (University of Birmingham, United Kingdom)

# **Debate on presentations – Questions and answers**

Moderated by Fabio Pasquali, PIARC TC 1.2 Chair and POT member, Italy

- · Panelists:
  - · Gloria Shepherd, FHWA Executive Director, USA
  - · Opuge Obuolloh, University of Birmingham, UK
  - · Ezekiel Fukwo, Director of Highway Design and Safety, Kenya

# TS1.4Technical Session 1.4 – Climate Change and Resilience of Road Networks

Wednesday, October 4, 09:30–13:00 Room: Panorama Hall, 1st floor

Chair: Ms. Caroline Evans, (Australia) & Mr. Fernando Mendoza, (Mexico), Chair & Secretary of PIARC TC 1.4 on Climate Change and Resilience of Road Networks,

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issues: 1.4.1 Uniform and holistic methodological approaches to resilience against Climate Change and other hazards. 1.4.2 Update of the PIARC International Climate Change Adaptation Framework for Road Infrastructure. The session will be complemented by the results of the call for papers on the following topics: 1. Practical studies to increase the resilience of the road network. 2. Climate change adaptation actions for road infrastructure. 3. Crosscutting issues of resilience and climate change.

#### Welcome and session introduction

Caroline Evans, Chair of PIARC TC 1.4 on Climate Change and Resilience of Road Networks, Australia

#### **Presentations**

### **Accomplishments of Working Groups**

- · Case study task force: Briefing note
  - · Lennart MEINE (Germany) BASt
- Uniform and holistic methodological approaches to climate change and other hazards resilience
  - · Marie COLIN (France) Cerema
- · Update of the PIARC Climate Change Adaptation Framework
  - · Gordana PETKOVIC (Norway) NPRA
  - · Stuart WOODS (New Zealand) Waka Kotahi, TA

# **Questions and Answers**

Caroline Evans, (Current) Chair of PIARC TC 1.4 on Climate Change and Resilience of Road Networks, Australia

#### **Presentations**

# **Results of the call for papers**

- · Identification of vulnerable sections of the road network based on historical records of incidences due to climate impacts
  - · Juan Fernando MENDOZA SANCHEZ (Mexican Institute of Transportation, Mexico)
- · HazRoad Monitoring system for hazard prevention in highways A case study in Brazilian Federal Highways
  - · Fernanda OLIVEIRA DE SOUSA (Federal University of Rio de Janeiro, Brazil)

# **Questions and Answers**

Shafiq Alam, (Next) Chair of PIARC TC 1.4 on Climate Change and Resilience of Road Networks, Australia

#### **Break**

### **Presentations**

### Results of the call for papers (continued)

- · The Vulnerability Assessment Process of the Rwanda Road Network
  - · Pablo PEREZ (Finnish Overseas Consultants (FinnOC) Ltd., Finland)
- · Climate impact assessment for the federal trunk road network in Germany
  - · Marvin STELL (Federal Highway Research Institute, Germany)
  - · Lennart MEINE (Federal Highway Research Institute, Germany)
- · Climate Resiliency Measures for Roads in the Mountains of California
  - · Gordon KELLER (Genesee Geotechnical, United States)
  - · Donald LINDSAY (Geotechnical Engineer, California Geological Survey, United States)
- · Risk thresholds related to climate change in road infrastructure in Spain
  - · Laura GARCÍA (CEDEX, Spain)
- · Channelizing global evidence for mainstreaming of resilient road infrastructure through standards
  - · Richa AHUJA (Indian Institute of Technology, Kharagpur, India)

### **Questions and Answers**

Shafiq Alam, (Next) Chair of PIARC TC 1.4 on Climate Change and Resilience of Road Networks, Australia

#### Conclusion

Shafiq Alam, (Next) Chair of PIARC TC 1.4 on Climate Change and Resilience of Road Networks, Australia

# **Organization**

Session Organiser: Caroline Evans, Australia & Fernando Mendoza, Mexico

# WS07 Workshop 07 – Road Asset Management and ISO 55000 series

Wednesday, October 4, 11:30–13:00 Room: Club A, 1st floor

Chair: Fernando Varela Soto, TC 3.3, Leader WG 3.3.1, Spain

The Asset Management standard (ISO 55000) and its extensions describe how it should be implemented in an organization without specifying the type of assets to which it can be applied. It is somewhat expensive to find examples of how an agency that oversees managing a road network should proceed to implement such a standard.

We are going to work on a practical example during the workshop and try to generate knowledge for the people who participate by motivating their concerns. The objective is to quickly describe the scenario of activities, equipment and means that are required to solve the proposed practical case.

It is necessary to have people who want to have a collaborative and participatory attitude because it is not a question of listening to lectures on the subject but of creating a learning environment among all.

### Presentation of the workshop and the team of monitors

Fernando Varela, TC 3.3, Leader WG 3.3.1, Spain

#### **Presentations**

- · Description of activities Context case study
- · Antonio MURUAIS (MITMA, Spain) TC 3.3

Division into groups to carry out the activities:

Subgroup 1: Leadership. Communication. Policy and objectives

Subgroup 2: Planning. Objectives and deliveries

Subgroup 3: External Help. Data collection and updating

Subgroup 4: Operation, Control and Performance Evaluation

Subgroup 5: Risk Assessment and Performance

- · Fabian Schvartzer (TC 3.3) Argentina
- · Pascal Trottier (TC 3.3) France
- · Michael Trond Andersen (TC 3.3) Norway
- · Chris Knowles (TC 3.3) UK
- · Tim Massart (TC 3.3) Belgium

# **Presentations of the groups with Questions and Answers**

- · Fabian Schvartzer (TC 3.3. member Argentina)
- · Pascal Trottier (TC 3.3) France
- · Michael Trond Andersen (TC 3.3) Norway
- · Chris Knowles (TC 3.3) U.K.
- · Tim Massart (TC 3.3) Belgium

#### Conclusion

Fernando Varela Soto, (TC 3.3) Leader WG 3.3.1

# WS08 Workshop 08 – Building a climate-responsive road sector

Wednesday, October 4, 09:30-11:00 Room: Club E, 1st floor

Chair: Susanna Zammataro (IRF Director General)

The use of digital solutions based on data science and artificial intelligence, shows promising results in being able to anticipate, adapt and mitigate the impact of road construction on climate. Road construction is a materials intensive sector which participates in global carbon emissions. Measuring and optimising the carbon impact of road networks at pavement design stage is essential for the sector to participate in the low-carbon transition.

Climate change and its extreme weather events – floods, heat waves, etc. – are exposing our road networks to greater risks. Anticipating those risks will be essential to build climate-ready roads.

This session will explore how new approaches – in particular digital solutions – support the road sector to both mitigate its carbon footprint and anticipate climate change impact to avoid early repairs.

Discussions will focus on digitalization and its contribution to building a climate-responsive sector and on the role of digital twins in reducing carbon footprint and anticipating resilient road networks.

### Welcome and session introduction

Susanna Zammataro, IRF, Director General

#### **Presentations**

- · Implementing digitised tools as a key element of success to build a climate-responsive road sector
  - · Philipp KAMARYT IBM Associate Partner
- Using construction materials knowledge to measure road carbon footprint, to visualise climate risks, anticipate climate impact and provide pavement design recommendations to build low carbon and resilient infrastructure
  - · Nicolas MIRAVALLS CEO of ORIS
- · Approach of a designer with a focus on circular economy and low carbon solutions
  - · Jessica TUCK Technical Director, Construction Materials, AECOM Europe and India
- Anticipating the climate impact for road pavements: a case study from Uzbekistan (focus on mitigation and adapting to climate change)
  - Pawan KARKI Senior Engineer and Principal Transport Specialist, Asian Development Bank (ADB)

# **Questions and Answers**

- How can digitalization accelerate the transformation of our sector towards low carbon construction?
- How to measure and optimise the accurate carbon footprint of a road project using data knowledge?
- How do we link scientific data on the effects of climate change with road projects to anticipate resilience?

#### Conclusion

# **Organization**

Session Organiser: Elodie Woillez (ORIS Head of Communication / PA)

# **Posters for National Reports**

09:30–13:00 Terrace 2B, 2<sup>nd</sup> floor

#### Lunch

13:00-14:30

# Posters for topics 10, 11, 12, 29, 30, 42, 43, 44

14:00-18:30 North Hall, 2<sup>nd</sup> floor

# TS3.2 Technical Session 3.2 - Winter Service

Wednesday, October 4, 14:30-18:00 Room: South Hall 1, 1st floor

Chair: Mr Peter Nutz, Chairman of PIARC TC 3.2 on Winter Maintenance, Austria

PIARCs Winter Service Committee TC 3.2 deals with everything related to winter, snow and ice on the road and how to deal with it.

Ploughing snow and use salt or abrasives sounds much less complex than it is in reality. New types of sensors, weather forecasts, decision support systems, spreading technologies and techniques and much more develop constantly. A good example is the use of liquid de-icing and anti-icing agents which was introduced in many countries around the world.

This session gives an overview of the TCs work in the past cycle as well as selected Presentations representing the development of winter service around the world.

#### Welcome and session introduction

Peter Nutz – TC 3.2 Chair

#### **Presentations**

- Issue 3.2.1: Integration of the new technologies in winter service; and Issue 3.2.3 Implication of connected and automated vehicles on winter service
  - TC/TF members
- · The impact of embedded IoT sensor road observations on road weather forecasts
  - · Robert TARDIF (Vaisala Inc., United States)
- Road friction coefficient estimation system using road surface images and a convolutional neural network
  - · Akira SAIDA (Civil Engineering Research Institute for Cold Region, PWRI, NRDA, Japan)
- · Floating Car Data as an enabler for more efficient winter maintenance operations
  - · Björn ZACHRISSON (NIRA Dynamics, Sweden)

## **Questions and Answers**

Moderator: Nick Russell and Anna Arvidsson

#### **Break**

#### **Presentations**

- · Issue 3.2.2: Winter maintenance in urban areas
  - · TC/TF members
- Development of Action Plans as Part of the Implementation of a Sustainable Winter Service Programme
  - · Rémi REIFF (Cerema, France)
- · Issue 3.2.4 Update of Snow and Ice Databook
  - TC/TF members
- · Application Rate of Pre-wetted Salt for Snow Removal
  - · Jinhwan JANG (Korea Institute of Civil Engineering and Building Technology, South Korea)

# **Questions and Answers**

Moderator: José Carlos Valdecantos Alvarez and Dan Eriksson

# **Session Closing and conclusion**

Peter Nutz – TC 3.2 Chair

# TS4.3 Technical Session 4.3 – Earthworks

Wednesday, October 4, 14:30–18:00 Room: South Hall 2. 2<sup>nd</sup> floor

Chair: Mr. Patrick Boisson, Chair of PIARC TC 4.3 Earthworks, France

Did you know that Earth Structures and therefore earthworks represent up to 80% of the linear of the infrastructures in the world? When a natural hazard hit a transportation infrastructure, almost the overall of the disasters are linked to an Earth Structure: embankments, natural slopes, cuts, etc. This should help you to attend the presentation of the work of TC 4.3 Earthworks relating to this subject.

The Technical Committee 4.3 Earthworks worked during 4 years on three topics:

- 1. The resilience of earthworks to the effects of climate change and in particular how to increase the resilience of Earth Structures against natural hazards.

  We produced 3 deliverables:
  - · an unprecedented and very complete bibliographic study in our field,
  - · a compilation of case studies,
  - and finally, a report which propose a methodology to improve the resilience of Earth Structure against Natural Hazards.
- 2. Techniques and innovations:

Because we trust in our ability to make better Earthworks in the future, we produced 2 outputs that focused on:

- · a compilation of 36 case studies of recent unusual techniques and innovations,
- · a report that makes sense between Techniques, Innovation and Improving Resilience.
- 3. The writing of a Practical Manual on Earthworks.

The Manual, although we still have a few chapters to write, offers a good idea of earthmoving techniques.

During the first part of our Technical Session 4.3 we will present all these works and in second part, we will give the floor to 4 authors from Czech Republic, Japan, Spain and Canada that emphasize the urgent need to adapt Earthworks to climate change and futures challenges in our domain. As the chair of TC4.3 Earthworks, I would like to thank the presenters of the session and all the members of TC 4.3 for their outstanding work over the past four years.

#### Welcome and introduction

Mr. Patrick Boisson, Chair of PIARC TC 4.3 Earthworks, France

#### **Presentations**

- · An overview of TC4.3 case studies movie
  - · PIARC TC 4.3 Earthworks members
- · Increase Resilience of Earth Structures against Natural Hazards
  - Enrico MITTIGA (Italy) Member of PIARC TC 4.3 Earthworks
- · Innovations and techniques Application to Earth structures in the future
  - · Jason HASTINGS (United States)
  - · Alexandra FERREIRA (Portugal) Members of PIARC TC 4.3 Earthworks
- · The Earthwork Manual an overview
  - · Yasmina BOUSSAFIR (France) Secretary of PIARC TC 4.3 Earthworks

# **Questions and Answers**

Moderator: Mr. Patrick Boisson, Chair of PIARC TC 4.3 Earthworks, France

#### **Break**

#### Welcome and introduction

Mr. Patrick Boisson, Chair of PIARC TC 4.3 Earthworks, France

#### **Presentations**

- · Alternative Materials in Earthworks the European Approach
  - · František KRESTA (SG Geotechnika a.s., Czech Republic)
- Moving the Forest to Minimize the Effects of Earthworks and Accelerate the Restoration of Environmental Compensation (Québec, Canada)
  - · Julien-Michel BLONDIN-PROVOST (Ministère, Canada/Quebec)
- · Impacts and Adaptation Measures of State Roads in Spain to Climate Change
  - Felipe COLLAZOS ARIAS (Ministerio de Transportes, Movilidad y Agenda Urbana (MITMA), Spain)
- Management Strategies for Road Earthwork Sections in Japan and Potential for Technology Transfer
  - · Hiroaki MIYATAKE (Public Works Research Institute, Japan)
- · Efficient Safety Assessment of Highway Slope Reinforced by Ground Anchors based on Residual Tensile Load Evaluated by Vibration Method
  - · Mitsuru YAMAZAKI (Central Nippon Highway Engineering Nagoya Co., Ltd.,, Japan)

#### **Questions and Answers**

Moderator: Mr. Paul Nowak, Secretary of PIARC TC 4.3 Earthworks, United Kingdom

### **Conclusion**

Mr. Patrick Boisson, Chair of PIARC TC 4.3 Earthworks, France

# Organization

**Session Organisation and Secretariat:** Mr. Patrick Boisson, Chair of PIARC TC 4.3 Earthworks, France

# **TS2.1 Technical Session 2.1 – Mobility in Urban Areas**

Wednesday, October 4, 14:30–18:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Mr. Andrea Simone, Chair of PIARC TC 2.1 on Mobility in urban areas, Italy

This session will share the results of the work completed by the Mobility in Urban Areas Technical Committee through 3 main issues strictly related to the deliverables of the 3 WGs of the TC. For each issue a selection of papers will be presented to enrich and open the view on the topics. We 've planned two Q&A and panel discussions: the first will focus on the issue of data survey and accessibility analysis and the second will be open the discussion and collect the contribution on innovation and multimodality. In the first part we integrate the case studies on the travel behavior survey data collection with two very interesting paper from India and Germany. In the second part we put together the two issue on "New Mobility" and "Multimodal solutions" with the results of two paper from France and South Africa. A dedicated part of the session will focus on the need of I MICs

### Welcome and session introduction

Andrea Simone (Italy), TC 2.1 Chair

#### **Presentations**

- · Understand mobility and accessibility of the metropolitan regions: the work of WG 2.1.1
  - · Ok NAMKUNG (South Korea) Work Group Leader
- The Munich Large-Scale Drone Data Set Containing Pedestrian, Cyclist, Manually Driven and Automated Vehicle Trajectories
  - Martin MARGREITER (Technical University of Munich, Germany)

# **Questions and Answers, Panel Discussion on Issue 1**

Moderator: Flore N'Mandy Gué spouse KLOKOUIE (Côte d'Ivoire)

#### **Presentation**

- · Evaluating impacts of new mobility in urban and peri-urban areas: the work of WG 2.1.3
  - · Tommaso BONINO (Italy) Work Group leader
  - · Valeria VIGNALI (Italy) Work Group leader

#### **Break**

#### **Presentations**

- Multimodal solutions for optimizing road networks in urban and peri-urban areas: the work of WG 2.1.2
  - · Xu Mei CHEN (China) Work Group leader
  - · Akira ENDO (Japan) Work Group leader
  - · Sandrine ROUSIC (France) Work Group leader
- · Aerial cable transport as an efficient alternative to daily mobility
  - · Sandrine ROUSIC (CEREMA, France)
  - · Florence GIRAULT (CEREMA, France)
- Are Advancing Public Transport Systems Inclusive to all Persons Living with a Disability in Africa?
  - · Mukhodeni MUTHIGE (Independent Researcher, South Africa)

# Questions and Answers, Panel Discussion on Issue 2 and 3

Moderator: Wanda Debauche (Belgium)

# Closing and preview of next cycle

Andrea Simone (Italy) – TC 2.1 Chair

# FS08 Foresight Session 08 – Mobilising investments and partnerships to deliver impact in road safety

Wednesday, October 4, 14:30–18:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Susanna Zammataro, Director General, IRF

Road crashes are the biggest killer of young people worldwide. More than 100,000 people are killed and injured on the world's roads every day. The proven, high-return and evidence-based infrastructure solutions to save lives exist. Yet, there is currently a significant underfunding of infrastructure for road safety and a latent need to mobilize private financing and partnerships that deliver. It is estimated that an additional US\$260 billions of financing will be required to achieve the road safety related Sustainable Development Goals (SDGs) 3.6 and 11.2 in low and middle-income countries (LMICs) over the coming decade. This session explores the business case for investment in safer roads and mechanisms by which the investments and partnerships – necessary to achieve the target of the Decade of Action – can be mobilised.

The session will address the following questions:

- · What's the business case for investments in safer roads and how does it translate in different regions of the world?
- · How to create a conducive environment for private sector to engage?
- · How can private investments be mobilised to close the funding gap?

#### **Presentations**

- · Investments in safer roads: the business case, Keynote
  - · Eila KREVI Chief Sustainable Finance Advisor, European Investment Bank
- · Investments in safer roads: the business case, Setting the stage
  - · Veronica RAFFO Senior Infrastructure Specialist, The World Bank
  - · Rob MCINERNEY CEO, iRAP
  - · Anouar BENAZZOUZ President. IRF
- Enabling impact investments and partnerships: lessons learned from around the globe, Africa the Tanzania Ten Step Project
  - · H.E. Amb. Aisha AMOUR (Tanzania) Permanent Secretary, Ministry of Works and Transport
- Enabling impact investments and partnerships: lessons learned from around the globe,
   LMICs
  - Yohannes ABEBE Senior Director of Transport and Vertical Structures Global Portfolio at Millennium Challenge Corporation the MCC
- · Enabling impact investments and partnerships: lessons learned from around the globe, Latin America
  - · Esteban DIEZ ROUX Principal Transport Specialist, IADB
- Enabling impact investments and partnerships: lessons learned from around the globe, Asia
  - · David SHELTON Senior Transport Specialist, Asian Development Bank

# **Questions and Answers**

Moderator: Susanna Zammataro, Director General, IRF

#### **Break**

#### **Panel discussion**

# Mobilising private sector investments in road safety

- · Speaker from 3M Safety
- · Astrid Van Den Burg, Head of Road Safety, Holcim

- · Bosco Martì Ascencio, Aleatica Global Director of Institutional Affairs and President Road Safety Foundation
- · Malaya Zumel, Regional Transport Coordinator for Africa, the Caribbean and the Pacific European Investment Bank (EIB)
- Daniel Pulido, Senior Investment Officer, Global Infrastructure Department, International Finance Corporation (IFC)

### **Conclusion**

Susanna Zammataro, Director General, IRF

# **Organization**

Session Organisers: IRF (Geneva, Switzerland) & iRAP

Session Secretary: Greg Smith, Global Programme Director, iRAP

# SPS2 Special Project Session 2 – Carbon neutrality of the road sector

Wednesday, October 4, 14:30–18:00 Room: Small Hall, Ground floor

Chair: Mr. Stephen Fidler, Department for Transport, First Delegate to PIARC, United Kingdom

Road transport is vital for society to function and, for the foreseeable future, is expected to remain the dominant mode of transport for people and goods. However, the construction, operation, maintenance and use of the highway infrastructure are responsible for large quantities of carbon emissions. Knowledge of the non-reversible, damaging consequences of climate change has resulted in global acceptance of the need to reduce carbon emissions in all sectors of human activity, including the highways sector. However, as efficient transport is vital to national economic growth, actions to reduce carbon emissions must not negatively impact the development and maintenance of high-quality road infrastructure, particularly for LMICs.

This session aims to identify actions being undertaken as well as potential new options to progress towards carbon neutrality.

#### Welcome and session introduction

Stephen Fidler, Department for Transport, First Delegate to PIARC, United Kingdom

#### **Presentations**

- · Presentation of the PIARC report on carbon neutrality of the road sector
  - · Martin LAMB (United Kingdom) ITEN
- The USA perspective
  - · Gina AHLSTROM (FHWA, United States) Secretary of PIARC Committee 4.1 on Pavements
- · Decarbonization efforts of the Japanese government and companies
  - Tsutomu YOSHIGI (PASCO Corporation, Japan) Member of PIARC Communications Commission
- · Topic tbc
  - · Speaker tbc, Indonesia

# **Questions and answers**

Moderator: Stephen Fidler, Session Chair

#### **Break**

#### **Presentations**

- · Knowledge-sharing on decarbonization issues in PIARC
  - · Fabio PASQUALI (ANAS, Italy) Incoming Strategic Theme Coordinator
- · Electric Road Systems
  - Bernard JACOB (Université Gustave Eiffel, France) Secretary of PIARC Committee
     2.3 on Freight
- · Carbon neutrality of the road sector the Minnesota perspective
  - · Nancy DAUBENBERGER (Commissioner of the Minnesota DoT, United States)
- · India's perspective
  - · Avishreshth (Avi) SINGH (TU Delft, Netherlands)

# **Questions and answers**

Moderator: Patrick Malléjacq, Secretary General of PIARC

# **Session Wrap up and Conclusions**

Stephen Fidler, Session Chair

# SDS1 Strategic Direction Session 1 – Road and road transport in a changed world

Wednesday, October 4, 14:30–18:00 Room: Panorama Hall, 1st floor

Chair: Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

This session will address:

- 1. Sustainable development of roads and road transport.
- 2. Understanding, steering, and adapting to changing user needs.
- 3. Disaster management.

The four Strategic Direction Sessions are high-level sessions presenting future-oriented approaches to key issues in the road sector. These sessions will be based on national reports prepared by PIARC Member Countries, which capture national experiences and best practices.

#### Welcome and session introduction

Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

#### **Presentations**

- · Effective Data Strategies in Delivering the U.S. Federal Highway Program
  - · Gloria M. SHEPHERD (Executive Director, Federal Highway Administration, United States)
- Road and Road Transport in A Changed World: The perspective from Australia and New Zealand
  - Kirsten MCKILLOP (Director, Strategy, Governance, Digital Identity, Austroads, Australia and New Zealand, Australia)
- · Road disaster prevention and mitigation efforts in Japan
  - Atsushi OTANI (Chief, Road Risk Management Office, Environment, Safety and Risk Management Division, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan)
- · Drafting regulations in the German road sector
  - · Sven-Martin NIELSEN (Director Transportation Unit, German Road and Transportation Research Association (FGSV), Germany)
- · Evolution of Maintenance Contracts in Uruguay
  - Luis FERREIRA (Section Chief, Contracts Control Unit, National Directorate of Roads, Ministry of Transportation and Public Works, Uruguay)

## **Questions and answers**

Moderated by the session chair

#### **Break**

#### **Presentations**

- · How Mexico is building resilience in the road sector
  - Juan Fernando MENDOZA SÁNCHEZ (Head of Infrastructure Laboratories Division, Mexican Institute of Transportation, Mexico)
- · Austria's Mobility Masterplan 2030
  - Robin KRUTAK (Desk Officer, Austrian Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, Austria)

- · Road and road transport in a changed world: Spain's National Report
  - José Manuel BLANCO SEGARRA (Master Engineer at the National Roads Demarcation in Extremadura. Ministry of Transport (MITMA), Spain) – Spanish-Speaking Secretary of PIARC Committee 1.1
- · How Italy is moving towards sustainable roads that meet user needs
  - · Gianluca COSSALE (International Department, ANAS S.p.A. (Italian National Highway Agency), Italy)

## **Questions and answers**

Moderated by the session chair

### **Wrap up and Conclusions**

Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

## **Organization**

**Session secretary:** Jorge Monforte, Technical Advisor for Strategic Theme 1, PIARC General Secretariat, Mexico

# WS09 Workshop 09 – Optimised and sustainable concrete pavement concepts for the future

Wednesday, October 4, 14:30–16:00 Room: Club A, 1st floor

Chair: Luc Rens, Managing Director, EUPAVE, Brussels, Belgium

Major global trends and challenges, in particular climate change, energy issues and demographic trends, have also an effect on the mobility of goods and people. The way transport infrastructure is designed, built and operated will also adapt accordingly. This workshop will show examples of innovative concepts in concrete road construction related to these changes.

In a first presentation, a new type of concrete containing recycled magnetic particles, will be presented by "Magment". It is a magnetizable concrete, which is amongst others used for inductive charging of electric vehicles.

A second case is about the "Optipave" system, a special concept of thin concrete slabs, providing a cost-effective and sustainable design, reducing construction and maintenance costs while maximizing performance and service life. This design boasts 20+ years of proven performance in the South American market where it was first developed. The success story of the development in Ecuador will be presented.

Finally, the contribution of pervious pavements to a sustainable water management system will be highlighted. They can be a solution for flooding but also prevent water shortage in long periods of drought. Various solutions are available for pervious concrete pavements, both with in-situ cast concrete and with precast concrete products.

#### Welcome and session introduction

Luc Rens, Managing Director, EUPAVE, Brussels, Belgium

#### **Presentations**

- · Inductive charging Adding new functions to concrete pavements
  - · Mauricio ESGUERRA (Germany) Co-founder and CEO, Magment
  - · Tim ALTE-TEIGLER (Germany) Head of Research and Development, OAT
- · Optipave System, the optimized rigid pavement a successful story of Holcim Ecuador
  - · Eugen FLORESCU (France) Global Head of Road Markets, Holcim
- · The contribution of water pervious pavements to a sustainable water management
  - Elia BOONEN (Belgium) Researcher, Techological Advisor and Deputy Head of Division, Belgian Road Research Centre, Sterrebeek

## **Questions and Answers**

Moderator: Luc Rens, Managing Director, EUPAVE, Brussels, Belgium

#### Conclusion

Anne-Sévérine Poupeleer, Head of Division of Roads and Traffic of Flemish-Brabant, Belgium, Member of PIARC TC 1.1

# **Organization**

Session Organiser: EUPAVE Session Secretary: Luc Rens

# WS10 Workshop 10 – Disaster Management Manual: A Guide to Resilient Transportation Systems

Wednesday, October 4, 16:30–18:00 Room: Club A, 1st floor

Chair: Constantin Zbarnea, DMM Chief Editor, TC 1.5 member, Romania

For disaster management to be effective and efficient, it must be based on a clear understanding of the role and fulfillment of responsibilities of each actor as well as the timely implementation of appropriate interventions. A good disaster management practice is to integrate disaster management into national, provincial and district development plans, and to change the thinking and attitudes of individuals from disaster vulnerability to disaster resilience.

Lessons learned from past disasters can drive the development of new management strategies and new structural intervention and monitoring techniques, can also serve as test cases to evaluate the effectiveness of what has been put in place. In this sense knowledge sharing among road administrations, as well as practical experience, will be crucial.

This workshop will showcase the Disaster Management Manual prepared by PIARC, which offers guidance on effective and efficient strategies and methods for PIARC member countries and regions to manage various disasters. The manual covers basic concepts and case studies, including lessons learned and best practices to apply these basic concepts in practice. These ideas and examples are categorized and cover each stage of the disaster management cycle.

#### Welcome and session introduction

Constantin Zbarnea, Chief of the Technical Department of Regional Directorate for Roads and Bridges Iasi (CNAIR-DRDP Iasi), Disaster Management Manual Chief Editor (ROM)

#### **Presentations**

- · Applications of Disaster Management Manual The case of USA
  - Christopher ENGELBRECHT (United States) Assistant Chief Safety and Operations Officer (Missouri Department of Transportation), PIARC TC 1.5 member
- · Applications of Disaster Management Manual The case of Indonesia
  - Herry VASA (Indonesia) Former Director of Road Construction at the Directorate General of Highways, PIARC TC 1.5 member
- · KIOSK: Cutting edge technologies and their potential application
  - Hiroaki TAUCHI (Japan) Japan Bosai Platform, General Manager of International Geohazard Management Department, Land Infrastructure Development Operations, Nippon Koei Co., Ltd.

# **Open discussion and debate**

# How to develop resilient transportation systems: the role of disaster management manual

- · Workshop speakers: PIARC TC1.5 WG3 on site members Workshop onsite participants
  - · Constantin Zbarnea (Romania)
  - · Chris Engelbrecht (USA)
  - · Herry Vaza (Indonesia)
  - · Hiroaki Tauchi (Japan)
  - · Yukio Adachi (Japan)

# **Questions and Answers**

Moderator: Yukio Adachi, Chair of T.C. 1.5 Disaster Management

# Conclusion

Constantin Zbarnea, Chief of the Technical Department of Regional Directorate for Roads and Bridges Iasi (CNAIR-DRDP Iasi), DMM Chief Editor (ROM)

# Organization

Session Organiser: Yukio Adachi, Chair of TC 1.5 Disaster Management

Session Secretary: Chris Engelbrecht, Member of TC 1.5

# WS11 Workshop 11 – Resilience and Asset Management

Wednesday, October 4, 14:30–18:00 Room: Club E, 1st floor

Chair: Marie Colin, TC 1.4 member, France, and Rade Hajdin, TC 3.3 member, Switzerland

Resilience has been defined as "the ability of a system or systems to survive and thrive in the face of a complex, uncertain and ever-changing future" and this definition serves as the basis for the workshop. On the one hand, the workshop addresses the uncertain and ever-changing future that is largely, but not exclusively, influenced by climate change. It will discuss aspects of resilience and the possibilities of integrating resilience into asset management. On the other hand, the workshop will present – on the basis of case studies – both preventive and remedial interventions that can effectively improve resilience. Furthermore, the relationship between risk and resilience approaches will be discussed with a focus on the temporal dimension that characterises the resilience approach. TC 1.4 "Climate Change" and TC 3.3 "Asset Management" will contribute to this workshop. This session will include a presentation of issues such as risk and resilience, holistic approaches to climate change and other hazards and the importance of network and asset management in enhancing resilient infrastructure. This will also involve a summary of the outputs from PIARC TC1.4 and TC3.3 as related to these identified areas for this session.

#### Welcome and session introduction

- · Introduction of TC 1.4
  - · Caroline Evans, Chair PIARC TC 1.4 (Australia), Strategic Theme 1 Coordinator for next cycle
- · Introduction of TC 3.3
  - · Gerardo Flintsch, Chair PIARC TC 3.3 (USA)

#### **Presentations**

- · Risk and Resilience Complement or Replacement
  - · Rade HAJDIN (IMC, Switzerland) TC 3.3 member
- · Low Cost Low Risk Resilience Projects
  - · Jack HANSBY (New Zealand Transport Agency, New Zealand) TC 3.3 member
- · Dealing with natural hazards in Austria to ensure a resilient high-level road network
  - · Christian HONEGER (ASFINAG, Austria) TC 3.3 member
- World Bank-supported projects on road infrastructure resilience and asset management
  - · Nicolas PELTIER (Global Director Transport, World Bank)

#### **Break**

#### **Presentations**

- · Holistic approaches to climate change and other hazards resilience: key practices and best practice examples
  - · Marie COLIN (Cerema, France) TC 1.4 member
- · Approaches to network and asset resilience
  - · Mark Henry RUBARENZYA (Uganda) PIARC Vice-President, TC 1.4 member

## **Questions and Answers - Panel discussion**

The panel discussion will address the following questions:

- · Is resilience only related to natural hazards?
- · Are resilience metrics sufficient for decision making in asset management?
- · How can we improve/better include resilience in asset management practices in general?
- · How can resilience and asset management be effectively incorporated into guidance and decision-making processes?

#### Conclusion

Pascal Rossigny, TC 3.3 Secretary, Cerema, France

## **Organization**

Session Organiser: TC 1.4 and TC 3.3 – Caroline Evans, Gerardo Flintsch, Pascal Rossigny

# OSE1 Sustainable Development and Innovation of Transport Infrastructure in The Context of Global Climate Change

Wednesday, October 4, 14:30–18:00 Room: Chamber Hall, 3<sup>rd</sup> floor

Chair: Ms Nina Guan, Director of International Cooperation Department, China Highway and Transportation Society & Mr. Gonzalo Alcaraz, Deputy Director General International Road Federation

#### **Opening remarks**

- Mr. Yonghong Sun, Director General of Highway Monitoring & Emergency Response Center, Ministry of Transport of the People's Republic of China
- · Mr. Patrick Malléjacq, Secretary General of PIARC
- · Mr. Wenjie Liu, Secretary General of China Highway and Transportation Society

#### **Presentations**

- Resilient Road Transport Infrastructure Needs and Progress in The Context of Global Climate Change: A Chinese Perspective
  - · Hui LI (China) Tenured Professor of Tongji University
  - · Mr. Xirong Feng, Chairman of CCCC Asset Management Company Limited
- Research and Practice of Intelligent Management and Control for Highway Tunnels Operation Safety
  - Hao DING (China Merchants Chongqing Communications Technology Research and Design Institute, China) – Director of Tunnel Research Institute
- · The Construction Plan of Highway Engineering Intelligent Site
  - · Jie WANG (China) CEO of Jiangsu East-Trans Co.,Ltd
- Research on the Application of Industrial Waste in Pavement Engineering
  - · Rongji CAO (China) Chief Engineer of JSTI GROUP

#### **Break**

#### **Presentations**

- · Infrastructure and Implementation of Changeable Message Signs on China Modern Highways
  - · Shen QINGHONG (China) General Manager of Genture Electronics
- · Vibration Mixing Promotes Construction of Transportation With High Quality
  - · Jing ZHONG (China) Vice President of Detong Intelligent Technology Co,Ltd
- · Application of BIM&GIS Technology in Mountain Area's Highway Construction
  - Zhang SHENGLIN (China) Deputy General Manager / Chief Engineer of Guizhou Highway Engineering Group Co.,Ltd

#### Conclusion

Mr. Liu Wenjie, Vice President and Secretary-General of China Highway and Transportation Society

# **Posters for National Reports**

14:30-18:00 Terrace 2B, 2<sup>nd</sup> floor

# **Thursday, October 5**

# K3 Keynote 3 - Roads for international development

Thursday, October 5, 08:30-09:15 Room: Congress Hall, 1st, 2nd & 3rd floor

This keynote session will discuss the challenges and opportunities offered by the road sector, and the role that multilateral development agencies play.

Keynote speakers will be:

- · Guangzhe Chen, Vice President for Infrastructure, World Bank
- · Antonio Silveira, Vice President, Latin-America Development Bank (CAF)

This session will be moderated by Nazir Alli, President of PIARC.

# Posters for topics 17, 18, 19, 31, 32, 33, 45, 46

09:15-13:30 North Hall, 2<sup>nd</sup> floor

# TS3.3 Technical Session 3.3 – Asset Management

Thursday, October 5, 09:30-13:00 Room: South Hall 1, 1st floor

Chair: Mr. Gerardo Flintsch, Chair of PIARC TC 3.3 on Asset Management, USA

This section will present the main finding of the TC 3.3 Asset Management and examples of innovative approaches and case studies. Asset management is a well-established discipline successfully implemented in several countries for management of roads and other physical asset. The session will highlight some key aspects of the knowledge gained through the cycle documented in several reports and the Web-based electronic PIARC Road Asset Management Manual and case studies showcasing innovative approached and applications and high and low and medium income countries.

Some of the innovations highlighted include: adopting the ISO 55001 that defines the requirements for an asset management system, using Building Information Modelling (BIM) and digitalization to enhance the Asset Management over the whole life cycle of the roadway assets, effective approaches for using life-cycle management and risk management in Asset Management, applying defining and implementing measures to improve resilience of road networks, and ways to consider the renewing and rejuvenating of aging infrastructure networks as part of the Asset Management process.

The case studies to be presented include the applicability of satellite monitoring in the context of road asset management, the impact of implementing load-limiting regulations, and the development of a systematic asset management approach for bicycle paths using gamification and artificial intelligence.

#### Welcome and session introduction

Gerardo Flintsch - TC 3.3 Chair

#### **Presentations**

- · Innovation in Asset Management
  - · Fernando VARELA
  - · Antonio MURUAIS
- · The applicability of satellite monitoring in the context of road asset management
  - · João MORGADO (Infraestruturas de Portugal, Portugal)
- · Measures for improving resilience of road network
  - · Rade HAJDIN
  - · Christian HONEGER
- · Risk management and asset management: Implementation on French national free roads
  - · Hélène KLICH

# **Questions and Answers**

Moderator: Miguel Valdés Flores

#### **Break**

- · Renewal and rejuvenation of aging infrastructure
  - · John PATERSON
  - · Pascal TROTTIER
- · Consequences of the Non-Full Application of Regulation 14/2005/CM/UEMOA in Senegal
  - · Mamadou samba DIALLO (Université, Senegal)

- · Update the Asset Management Manual
  - · Vittorio NICOLOSI
  - · Darko KOKOT
- · Towards Systematic Management of Bicycle Paths: A Case Study using Gamification and Artificial Intelligence as Constituent of Service Level Index
  - · Susanna SUOMELA (Finnish Transport Infrastructure Agency, Finland)

## **Questions and Answers**

Moderator: Pascal Rossigny

# **Session Closing and conclusion**

Gerardo Flintsch – TC 3.3 Chair

# TS4.4 Technical Session 4.4 – Road Tunnel Operations and Safety

Thursday, October 5, 09:30–13:00 Room: South Hall 2, 2<sup>nd</sup> floor

Chair: Mr. Ingo Kaundinya, Chair of PIARC TC 4.4 Tunnels, Germany

This Technical Session is organized by PIARC Committee TC4.4 on Tunnels. It will present the work accomplished by the Committee during the 2020–2023 work cycle on the following issues (according to the SP 2020–2023):

- · Improving road tunnel resilience, considering safety and availability (issue 4.4.1)
- Good practices in maintenance and traffic operation of heavily trafficked urban tunnels (issue 4.4.2)
- · Impact of new propulsion technologies (NEC) on road tunnel operations and safety (issue 4.4.3)
- · Support for updating and improving of DG-QRAM (issue 4.4.7)
- Overview of other TC4.4 activities (Seminars, Workshops, Conferences (issue 4.4.6), Road Tunnel Manual (issue 4.4.5) and ITS in tunnels (issue 4.4.4)).

This session will also present the best articles identified through PIARC's international call for papers on call topic 47: Digitalization of Road Tunnel Design and Management. An additional focus of the session will be on challenges of LMIC in tunnel design, construction, maintenance and safe operation. The session will conclude with an outlook to the new topics which will be addressed by TC4.4 in the coming PIARC work cycle.

#### Welcome and introduction

Ms. Hélène Mongeot, Secretary of PIARC TC 4.4 Tunnels, France

#### **Presentations**

- · Brief overview of TC4.4 Tunnels activities
  - · Ingo KAUNDINYA (Germany) Chair of PIARC TC 4.4 Tunnels
- · Improving road tunnel resilience, considering safety and availability
  - · Ronald MANTE (Netherlands) Leader of Working Group 2 at PIARC TC 4.4 Tunnels
- · Good practices in maintenance and traffic operation of heavily trafficked urban tunnels
  - · Arthur KABUYA (Belgium) Leader of Working Group 2 at PIARC TC 4.4 Tunnels
- · Impact of new propulsion technologies (NEC) on road tunnel operations and safety
  - Peter STURM (Austria) Leader of Working Group 2 at PIARC TC 4.4 Tunnels

### **Questions and Answers**

Moderator: Ms. Hélène Mongeot, Secretary of PIARC TC 4.4 Tunnels, France

#### **Break**

- Updating and improving of DG-QRAM
  - · Rafael DEFERT (Switzerland) PIARC TC4.4 WG Member
- Good Practices for the Design, Construction and Operation of a Tunnel using the BIM Methodology
  - Rafael LÓPEZ GUARGA (Secretario del CT 4.4 Túneles de PIARC, Ministerio de Transportes, Movilidad y Agenda Urbana, Spain)
- · Operational Safety Considerations for HGV Platooning in Tunnels
  - · Ali MAHDMINA (Member of PIARC TC 4.4 Tunnels, 4way consulting, United Kingdom)

- · Challenges in design, construction and operation of tunnels in LMIC
  - · Rahul GUPTA (India) Member of PIARC TC 4.4 Tunnels
  - Tiago MASSINGUE (South Africa) Secretary of PIARC TC 4.4 Tunnels

#### **Questions and Answers**

**Moderator:** Ms. Hélène Mongeot, Secretary of PIARC TC 4.4 Tunnels, France

## **Conclusion & topics for next cycle**

Mr. Ingo Kaundinya, Chair of PIARC TC 4.4 Tunnels, Germany

# Organization

Session Organiser: Mr. Ingo Kaundinya, Chair of PIARC TC 4.4 Tunnels, Germany

Session Secretary: Mr. Tiago Massingue, Secretary of PIARC TC 4.4 Tunnels, South Africa

# TS2.2 Technical Session 2.2 – Accessibility and Mobility in Rural Areas

Thursday, October 5, 09:30–13:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Mr. Souleman Oussiman, Chair of PIARC TC 2.2 on Accessibility and Mobility in Rural Areas, Burkina Faso

The objective of the session will be to present firstly the results of the activities of TC2.2 during the cycle 2020–2023 through the three working groups, the case studies of rural mobility in certain countries across different continents (Africa, Europe, America and Asia).

The maintenance aspect of rural roads will also be addressed.

This session will also present the best articles identified through PIARC's international call for papers on call topics "Challenges and solutions for rural roads".

Through the articles presented, a sharing of experience and best practices will be identified for the needs of some developing countries to improve aspects related to mobility in rural areas in their respective countries.

#### Welcome and session introduction

Souleman Oussiman, Chair of TC 2.2 (Burkina Faso)

#### **Presentations**

- · Technical solutions for paved and unpaved road
  - · François CHAIGNON (France) TC2.2 WG leader
- · Effect of Surface Layer's Bearing Capacity on Unsealed Road Corrugation
  - · Havisanth ERASANAYAGAM (Dept. of Civil Engineering, Monash University, Clayton Campus, Australia)
  - Arooran SOUNTHARARAJAH (Dept. of Civil Engineering, Monash University, Clayton Campus, Aruba)
  - · Jayantha KODIKARA (Dept. of Civil Engineering, Monash University, Clayton Campus, Australia)
- · Safe roads for women in rural areas
  - · Imen MAKHLOUF (ATR, Tunisia)
- · Practical guide of road safety measures on semi-urban crossings
  - · Jaime CAMPOS (Ministry of Public Works, Chile)

# **Questions and Answers**

Moderator: Izak Van der Lide (South Africa)

#### **Break**

- · Rural roads become local roads: lessons from Cameroon's experience
  - CHUMBE TOUNDOUNKO RACHIDETOU (European Union Delegation to Cameroon, Cameroon)
- · Technical particularities of rural roads in Romania
  - · Gheorghe LUCACI (Romania) TC2.2 Member
- · Women improving rural roads in Mexico
  - · Luz GRADILLA (Mexican Institute of Transportation, Mexico)
  - · Elsa MORALES (Mexican Institute of Transportation, Mexico)
  - · Fernando MENDOZA (Mexican Institute of Transportation, Mexico)

- · Managing Safety Aspects of Rural Roads
  - · Azwan Ezzany AZMI (Public Works Department of Malaysia, Malaysia)
- Environmental study of the impact on surface waters in the natural environment of the use of milk of lime used for the treatment of the asphalt bleeding phenomena
  - · Laurent FRITEYRE
  - · Jean-Michel SIGAUD
  - · Delphine REBIERE
  - · David BACHELLERIE
  - · Catherine FRANCK-NEEL
  - · Claire DETRUIT
  - · Céline BARRAILH
  - · David GOUTALAND
  - · Sylvain MOREIRA (CEREMA, Agence de Clermont-Ferrand, France)
  - Pierre MÉTAIS
  - · Régis CHEVALIER (LHOIST, France)

#### **Questions and Answers**

Moderator: Imen Makhlouf (Tunisia)

# Closing and Forecasts for the new cycle 2024–2027

Souleman Oussiman, Chair of TC 2.2 (Burkina Faso) Imen Makhlouf, a new chair of TC 2.2 for the next cycle (Tunisia)

# FS09 Foresight Session 09 – Physical and digital infrastructure to facilitate large-scale CCAM adoption for all

Thursday, October 5, 09:30–11:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Gonzalo Alcaraz (Deputy DG, IRF, Switzerland)

The development of automated functionalities in the road transport sector industry has been sparked by the quick development of new technologies on the one hand, and the ongoing demand for safe, clean, comfortable, efficient, and sustainable transportation on the other. Despite much hype, the future of automated mobility isn't about the autonomous vehicles themselves, but in what they can offer when fully integrated with the whole mobility ecosystem, including the road infrastructure. What's the value that AVs bring to the sector, and what are the gains they provide to road authorities in terms of safety, green and efficient mobility?

What's the role that road infrastructure plays in supporting and enhancing the capabilities of Cooperative, Connected and Automated Mobility (CCAM) solutions in large scale deployment? This session's goal is to critically examine the 'business case' for road authorities to invest in supporting CCAM and the supporting Physical and Digital Infrastructure (PDI) initiatives. The session will utilise knowledge from the US and Europe to illustrate principles through completed and ongoing projects (e.g. TM4CAD, AUGMENTED CCAM, HI-DRIVE), and to discuss the real needs of infrastructure owners and operators preparing for the decades to come.

#### Welcome and session introduction

Steve Phillips (Secretary-General, CEDR, Belgium) & Gonzalo Alcaraz (Deputy DG, IRF, Switzerland)

### Keynote

Shailen Bhatt (Administrator, Federal Highway Administration, USA)

#### **Presentations**

- · AUGMENTED CCAM
  - · Gonzalo ALCARAZ (Switzerland) Deputy DG, IRF
- · TM4CAD
  - Tom ALKIM (Netherlands) Strategic Advisor Connected & Automated Mobility, MAP Traffic Management

# Panel discussion with stakeholders with real needs on the subject

- · King Gee (Director of Safety and Mobility, AASHTO, USA)
- · Mehrdad Dianati (Professor, University of Warwick, UK) (Representing Hi-Drive project)
- Kristof Rombaut (Advisor Portfolio Management Office, Agentschap Wegen & Verkeer, Belgium-Flanders)
- · Manfred Harrer (Head of ITS Services, ASFINAG, Austria)
- · Laura Coconea (Head of Product Portfolio, SWARCO, Austria)
- · Federico Di Gennaro (Head of Technology, Innovation & Foresight study, Autostrade per l'italia, Italy)

# **Questions and answers**

Interactive Q&A with audience including polls

# Organization

IRF (Geneva, Switzerland) and CEDR

# TSRSC Technical Session – Road Statistics Committee – PIARC Databook of Roads and Road Transport 2020–2023

Thursday, October 5, 11:30–13:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Hirofumi Ohnishi, Chair, Road Statistics Committee, Japan

This session shows you outputs of activities of Road Statistics Committee during the work cycle from 2020 to 2023. The Committee has produced PIARC Databook of Roads and Road Transport 2020–2023. The Databook includes ten road-related indicators such as motorway length, the number of vehicles in use, road fatalities, road policies etc., which are selected from seven main areas of roads and road transport.

The session has two parts. The first part will be a presentation on outlines of PIARC Databook of Roads and Road Transport 2020–2023. The second part will be a panel discussion on road statistics / databook, including presentations to be made on road statistics by the Committee members and discussions on issues of their necessity, future development of road statistics/databook and so on among the panelists.

#### Welcome and session introduction

Hirofumi Ohnishi, Chair, Road Statistics Committee, Japan

#### **Presentation**

- · Outline of PIARC Databook of Roads and Road Transport 2020–2023
  - · Tomonobu TANINO (Japan) English-speaking secretary of Road Statistics Committee

#### **Questions and answers**

Moderator: Tomonobu Tanino, English-speaking secretary, Japan

#### **Panel discussion**

Moderator: Hirofumi Ohnishi, Chair, Road Statistics Committee, Japan

- Presentations on road statistics /databook by the panellists (members of the Road Statistics Committee)
  - · Florian Matiasek, Austria
  - · Petr Richter, Czech Republic
  - · Peter Schmitz, Germany
  - · Aristophanis Papadimitriou, Greece
  - · Takumi Nishimura, Japan
- · Discussions on the issues proposed below (moderator and panellists):
  - 1. necessity of road statistics/databook,
  - 2. indicators and data to be included in road statistics/databook
  - 3. future development of road statistics/databook, etc.

#### **Questions and answers**

Moderator: Hirofumi Ohnishi, Chair, Road Statistics Committee, Japan

#### Conclusion

Hirofumi Ohnishi, Chair, Road Statistics Committee, Japan

# Organization

**Organizer:** Hirofumi Ohnishi, Chair, Road Statistics Committee, Japan

# FS10 Foresight Session 10 – Engineers and Environmentalists teaming up for a more sustainable and biodiversity friendly mobility

Thursday, October 5, 09:30-13:00 Room: Small Hall, Ground floor

Chair: Éric Dimnet, General Commission for Sustainable Development (GCSD), Ministry of Ecological Transition and Cohesion of Territories, France, PIARC TC 3.4 Chair & Lazaros Georgiadis, Biologist – Environmental Consultant, Florina, Greece, IENE

Defining and developing sustainable transport is a critical societal and global challenge transport is facing in this century. Roads have an important part to play in achieving sustainability and tackling the sustainable development goals (SDG) and its components such as biodiversity preservation, climate action, adaptation, energy transition or resilience. Connected economies, societies, and nature with safer roads for road users and wildlife are a shared ambition for both the engineering and environmental sectors.

In line with these challenges PIARC's Environmental Sustainability committee (TC 3.4) and IENE, the Infrastructure and Ecology Network Europe, organize this foresight session deliberately positioned at the nexus of a changing transport sector. This foresight session aims to address global biodiversity and sustainability challenges (climate, energy, resilience, etc.) by strengthening cross-sectoral collaboration. It will notably highlight two PIARC work streams carried out during 2020–2023:

- · Sustainability of transport and mobility for societies and economies and
- · Interaction of transport with wildlife habitats and corridors.

#### Welcome and session introduction

Éric Dimnet, GCSD, PIARC, France

#### **Presentations**

- · Sustainable mobility, global challenges and biodiversity
  - Éric DIMNET (France) General Commission for Sustainable Development (GCSD), Ministry of Ecological Transition and Cohesion of Territories, PIARC TC 3.4 Chair
- · Introduction of IENE and other continent's networks as well as global initiatives (IENE, ANET, ICOET, ACLIE, IUCN, WWF)
  - · Elke HAHN (Austria) IENE, PIARC
- IENE tools (Biodiversity & Infrastructure handbook for action) for mainstreaming biodiversity and transport infrastructure (outputs developed in the framework of BISON project (Horizon), and in cooperation with CEDR and PIARC)
  - · Carme ROSELL (Spain) Minuartia, IENE
- · European Defragmentation Map
  - · Marita BOETTCHER (Germany) BfN, IENE
- · CEDR's tools for sustainable transport infrastructure
  - · Vincent O'MALLEY (Ireland) Transport Infrastructure Ireland, CEDR

# **Questions and Answers**

Éric Dimnet, GCSD, PIARC, France

#### **Break**

#### **Presentations**

- Developing ecological corridors and cooperation between nature conservation with transport sector in Czech Republic
  - · Vaclav HLAVAC NCA of Czech Republic
- The Carpathian experience on Sustainable Transport and a Global Strategy for Ecologically Sustainable Transport and other Linear Infrastructure as a result of an International Working Group
  - · Lazaros GEORGIADIS (Greece) Biologist Environmentalist, IENE

### **Questions and Answers**

Éric Dimnet, GCSD, PIARC, France

# TS1.1 Technical Session 1.1 – Performance of Transport Administrations

Thursday, October 5, 09:30–13:00 Room: Panorama Hall, 1<sup>st</sup> floor

Chair: Mr. Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, United States of America

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issues: 1.1.1 Understanding how Road and Transport Administrations are measuring the efficiency and effectiveness of Customer Experience and Public Value Creation. 1.1.2 The Role of Transport Agencies in Shaping Disruptive Technology and Service Models. 1.1.3 Organization of Staff and Human Resources.

The session will be complemented by the outcomes of the call for papers on the following topics: 1. Understanding the journey of your customers' experience. 2. Concepts, roadmaps and practical challenges of developing the transport agency of the future. 3. How transport administrations manage the transition to a more diverse workforce and the need for new skills and competencies in a changing transport sector.

#### Welcome and session introduction

Mr. Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

## **Presentations – Diversity and talent management**

- · Introduction and Methodology (what was the purpose, methodology, map...)
  - · Anna WILDT-PERSSON (Sweden)
- · Diversity Management (round tables, case studies, findings and conclusions...)
  - · Sisanda DYUBHELE (South Africa)
- · Talent Management (survey, case studies, findings and conclusions...)
  - Marit DUE (Norway)
- · Conclusion & Recommendations Common to Both Diversity and Talent Management
  - · Karen BOBO (United States)
- · Closing Remarks (the publications, next steps, join the next cycle ToR...)
  - · Alex WALCHER (Austria)
- · Q&A on Diversity and Talent Management
  - · José Manuel BLANCO SEGARRA (Spain)

#### **Break**

# Presentations - Customer experience and public value creation

- · Introduction \* What is customer experience? \* Asset Management, Frameworks and Public Value \* Six elements
  - · Alan COLEGATE (Australia)
- How did we get to these elements? \* Case Study Framework \* Case Study Asset Management
  - · Ilaria COPPA (Italy)
- · Public Value Literature review
  - · Deanna BELDEN (United States)
- Case study about the estimation of public added value on the provincial road sector in Lower Austria
  - · Michael PLATZER (Department of Road Planning, Public Administration of the Lower Austrian Federal Government, Austria)

#### **Break**

#### **Presentations**

- · National Highways UK an evidence- based approach to improving customer experience
  - · Paul HILL (National Highways, United Kingdom)
- · Wrap-up and Report conclusion \* Recommendation for transport agencies \* Six elements
  - · Alan COLEGATE (Australia)
- Q&A on Understanding how Road and Transport Administrations are measuring the efficiency and effectiveness of Customer Experience and Public Value Creation
  - · Joseph AHISSOU (Benin)

#### **Break**

#### **Presentations – Emerging & disruptive technologies**

- · Overview, Methods, and Outputs
  - · Anne-Séverine POUPELEER (Belgium)
- · Private Sector Perspectives & Regulatory Challenges
  - · Matt DAUS (United States)
- · Conclusions and Recommendations on Emerging & Disruptive Technologies
  - · Jonathan SPEAR (United Kingdom)

#### **Questions and Answers**

**Moderator:** Mr. Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

Presentation of the future ToR for TC1.1 in the 2024–2027 cycle

Mr. Christos Xenophontos, incoming chair of PIARC TC 1.1 and working group leaders

#### Conclusion

Mr. Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

# **Organization**

**Session Organiser:** Mr. Christos Xenophontos, Chair of PIARC TC 1.1 on Performance of Transport Administrations, USA

# WS12 Workshop 12 – Research and innovation for the benefit of greener and more sustainable airfield pavements

Thursday, October 5, 09:30–13:00 Room: Club A, 1<sup>st</sup> floor

Chair: Lucy Travailleur, Ph.D., STAC, France, and Cyril Fabre, Airbus, ICAO/APEG chairman, France

Sustainability and Resilience is of major concern for airport community whose new challenge is to reduce carbon footprint and promote environmentally friendly solutions for civil aviation. In the field of airfield pavements, several ways exist for carbon footprint reduction: material optimizations – thanks to advanced design methods and pavement assessment strategies; recycling and reuse (R&R), low embodied carbon materials or processes, and enhanced durability. As embodied carbon is inherent to the process of constructing airport pavement infrastructure, rather than something that can be addressed after a project is completed, there is an urgent need to address embodied carbon now.

This technical session, co-organized by the French Civil Aviation Technical Center (STAC) and the Federal Aviation Administration (FAA) Airport Technology R&D Branch, and involving international experts from the STAC, the FAA, Airbus, University Gustave Eiffel (France), US National Asphalt Pavement Association (NAPA) and Pavexpert, gives an overview of the state of the art and the major innovations and ongoing research in terms of pavement evaluation, asset management, Life Cycle Assessment (LCA), "green" materials, and technical solutions, for more sustainable airfield pavements.

#### Welcome and session introduction

Michaël Broutin, Ph.D., STAC & Navneet GARG, Ph.D., FAA

- · Advanced measurement device dedicated to interface characterization
  - · Jean-Marie ROUSSEL (Ph.D., STAC, France)
  - · Navneet GARG (Ph.D., FAA, United States)
- Low-cost cameras and AI algorithms for distresses automated detection and characterization
  - · Fabien MENANT (Ph.D., Univ. Gustave Eiffel, France)
- · BIM contribution to standardized and more reliable PCI
  - · Pascal TROTTIER (Pavexpert, France)
- Towards a new rational ACN/PCN method: the ACR/PCR concept
  - · Cyril FABRE (AIRBUS, France)
- · Impact of global warming on airfield pavement life expectancy
  - · Michaël BROUTIN (Ph.D., STAC, France)
- Quantifying Environmental Impact of airport pavement projects LCA Framework and Web based tool
  - · Navneet GARG (Ph.D., FAA, United States)
- · Environmental Product Declarations (EPD)
  - · Joseph SHACAT (NAPA, United States)
- · "Green" material research at FAA's NAPMRC; French/US Cooperation material exchange
  - · Navneet GARG (Ph.D. FAA, United States)
- · A French full-scale test facility dedicated to the study of RAP
  - · Lucy TRAVAILLEUR (Ph.D., STAC, France)

# **Questions and answers**

Lucy Travailleur, Ph.D., STAC & Cyril Fabre, Airbus, ICAO/APEG chairman

#### **Conclusion**

Lucy Travailleur, Ph.D., STAC & Cyril Fabre, Airbus, ICAO/APEG chairman

# Organization

Session Organiser: Michaël Broutin, Ph.D, STAC & Navneet GARG, Ph.D, FAA

**Session Secretary:** Lucy Travailleur, Ph.D, STAC

# WS13 Workshop 13 – Boosting Sustainable Road Safety Solutions in LMICs

Thursday, October 5, 09:30–13:00 Room: Club E, 1st floor

Chair: Agnes Velez, Lead Transportation Specialist/Multinational Relations, Team Lead at Federal Highway Administration, Washington, United States, and Robin Sébille, Deputy Secretary General of PIARC

PIARC has an active role in the efforts to improve road safety worldwide through evidence-based studies, technical reports and other type knowledge products. Technical Committee for Road Safety recognizes that 90% of traffic deaths occur in Low- and Middle-Income Countries, and uses this information to assess, identify and share best practices of road safety activities for LMICs through the development of documents and cases studies highlighting international practices and lessons learned. The Technical Committee is focused on making proven countermeasures that are effective in reducing the likelihood and severity of crashes, available to LMICs for consideration in safety project development.

Join us for a workshop dedicated to Effective Road Safety Management and Targeted Road Safety Solutions for LMIC and vivid discussions with key international road safety experts. Important results from key PIARC Publications will be demonstrated, like the famous PIARC Road Safety Manual and the recent Reports on LMIC Specific Issues and Successful Case Studies. Emphasis will be given to Infrastructure, Human Factors, Speeding and Vehicles and the related data and analyses as well as the management and research infrastructure needed in LMICs. A comprehensive set of key recommendations for the successful implementation of best practice will be provided and thoroughly discussed.

#### Part 1 – Effective Road Safety Management in LMICs

#### Welcome and introduction

Agnes Velez, Lead Transportation Specialist/Multinational Relations, Team Lead at Federal Highway Administration, Washington, United States

#### **Presentations**

- Safe System Approach in practice
  - Jari KAUPPILA (Organisation for Economic Co-operation and Development, France) Head of Secretary-General's Office at International Transport Forum, Head of Quantitative Policy Analysis and Foresight Division
- · Safe Road Infrastructure Investments
  - Said DAHDAH (World Bank) Head of the Global Road Safety Facility and the Global Lead of Road Safety
- · The need of building a sustainable knowledge and research infrastructure in LMICs
  - Hans GODTHELP (Partner at the Foundation Road safety for all, Netherlands) Member of PIARC TC 3.1 Road Safety
- Key Road Safety Management Practices
  - · George YANNIS (Greece) Professor at National Technical University of Athens
- Road safety Data and Analyses
  - Matts-Ake BELIN (Switzerland) Global Lead, Decade of Action for Road Safety, World Health Organisation, Geneva

# **Questions and Answers**

Agnes Velez

#### **Break**

### Part 2 - Targeted Road Safety Solutions in LMICs

#### Welcome and introduction

Robin Sébille, Deputy Secretary General of PIARC

#### **Presentations**

- · Successful Case Studies in LMICs
  - · Ahmed KSENTINI (Tunisia) University of Sfax, member of PIARC TC 3.1 Road Safety
- · Providing safer road Infrastructure
  - John MILTON (United States) Director of Transportation Safety and Systems Analysis at the Washington State Department of Transportation, Chair of PIARC Road Safety TC3.1 Committee
- Considering Human Factors in Road Safety
  - Peter SALEH (Austria) Deputy Head of Competence Unit, Thematic Coordinator; Senior Research Engineer at the Austrian Institute of Technology (AIT) GmbH
- · Managing Speed for all road users
  - John BARRELL (United Kingdom) International Road Safety Consultant, member of PIARC TC 3.1 Road Safety
- Safer Vehicles
  - Ana Luz JIMENEZ (Spain) Provincial Traffic Director in Sevilla in the General Directorate of Traffic, Chair of PIARC Task Force 2.1

#### **Questions and Answers**

Robin Sébille

#### Conclusion

Agnes Velez Robin Sébille

# Organization

**Organizers of the session:** George Yannis, Hans Godthelp & Ahmed Ksentini **Secretary of the session:** Isabela Erdelean, AIT (Austrian Institute of Technology)

# **Posters for National Reports**

09:30-13:00 Terrace 2B, 2<sup>nd</sup> floor

#### Lunch

13:00-14:30

Posters for topics 1, 2, 3, 7, 8, 9, 20, 24, 25, 26, 34, 38, 47, 48

14:00–18:30 North Hall, 2<sup>nd</sup> floor

# TS3.4 Technical Session 3.4 – Sustainable Road Mobility and global challenges (environment, biodiversity, energy transition, climate change, decarbonation and resilience)

Thursday, October 5, 14:30–18:00 Room: South Hall 1, 1st floor

Chair: Mr. Éric Dimnet, General Commission for Sustainable Development (GCSD), Ministry of Ecological Transition and Cohesion of Territories, France, PIARC TC 3.4 Chair

This session is based on the work carried out by the experts of the Sustainability Technical Committee (TC 3.4) during the 2020–2023 cycle. The Committee's experts dealt with the TOR themes from the Strategic Plan, striving to be open to global issues and to other actors outside the Committee.

This openness was reflected in the organisation of a number of international conferences, seminars and workshops, which provided an opportunity for high-quality exchanges. These dialogues have enabled the themes arising from the TOR to be included in the global issue of sustainable development, which includes decarbonisation, environmental pollution, the impact on biodiversity, the energy transition and resilience.

This session recalls the international events organised or co-organised by the TC 3.4 "Environmental Sustainability in Road Infrastructure and Transport" and presents the deliverables produced by the Committee during the 2020–2023 cycle.

After the break, the session gives the floor to international experts on aspects of sustainable mobility in relation to the major challenges of sustainable development.

#### Welcome and keynote introduction

- · Global sustainability challenges for mobility
  - Éric DIMNET (France) General Commission for Sustainable Developpement (Ministry of Ecological Transition)

#### **Presentations**

- Workshops, seminars and conferences on sustainability organized by TC3.4
  - Tammy NICHOLSON (Modal Transportation Bureau, lowa Department of Transportation, United States)
- · TC 3.4's work on air quality
  - · Eva VANDENBOSSCHE (Agentschap Wegen en Verkeer Antwerpen, Belgium)
- TC 3.4's work on noise mitigation
  - · Nicolae CIONT (Technical University of Cluj-Napoca, Romania)
- · TC 3.4's work on impacts in wildlife and their habitat
  - · Éric GUINARD (CEREMA Direction Territoriale Sud-Ouest, France)

# **Panel discussion – Questions and Answers**

Moderator: Mathieu Chabot-Morel, Canada-Québec, PIARC TC 3.4 French speaking Secretary

#### **Break**

- Futuring the applicability of road sustainability rating system in Indonesia: More integrated, more complex, and more sustainable?
  - · Gede Budi SUPRAYOGA (Ministry of Public Works and Housing, Indonesia, Indonesia)

- · Sustainable mobility: achieving decarbonization through the sustainability science process
  - Eric DIMNET (General Commission for Sustainable Developpement (Ministry of Ecological Transition), France)
- · Strategic Research Agenda on biodiversity-friendly linear infrastructures in Europe
  - · Ivo DOSTÁL (Transport Research Centre (CDV), Czech Republic)
- Key concepts, principles & stakeholders of the Global Strategy for Ecologically Sustainable Transport and other Linear Infrastructure
  - · Lazaros GEORGIADIS (Infrastructure and Ecology Network Europe -IENE, Greece)
- · Italian PIARC TC 3.4.2: Effectiveness and Sustainability of Noise Mitigation Measures
  - · Patrizia BELLUCCI (ANAS S.p.A., Italy)

#### **Panel discussion – Questions and Answers**

Moderator: Tammy Nicholson, USA, PIARC TC 3.4 English speaking Secretary

#### Conclusion

Éric Dimnet, General Commission for Sustainable Development (GCSD), Ministry of Ecological Transition and Cohesion of Territories, France, PIARC TC 3.4 Chair

# **Organization**

- Éric Dimnet, General Commission for Sustainable Development (GCSD), Ministry of Ecological Transition and Cohesion of Territories, France, PIARC TC 3.4 Chair
- Tammy Nicholson, Modal Transportation Bureau, Iowa Department of Transportation, PIARC TC 3.4 English Speaking Secretary
- Mathieu Chabot-Morel, Environment directorate, Ministry of Transport and Sustainable mobility, PIARC TC 3.4 French speaking Secretary

# TSTF4.1 Technical Session TF4.1 – Road Design Standards

Thursday, October 5, 14:30–18:00 Room: South Hall 2, 2<sup>nd</sup> floor

Chair: Mr. Mariusz Kiec, Chair of PIARC TF 4.1 Road Design Standards, Poland

This Technical Session is organised by PIARC Task Force 4.1 on Road Design Standards. It will present the work accomplished by the Tasf Force during the 2020–2023 work cycle on the following issues:

- · Comparison of standards in the road geometric design
- · Models for road design

This session will also present the best articles identified through PIARC's international call for papers on call topic "New trends in road design" in the following topics:

- · Road Design Standards
- · BIM in Road Design Standards

#### Part 1 – Road Design Standards

#### Welcome and introduction

- · Introduction to the Deliverables of TF 4.1
  - · Mr. Mariusz Kiec, Chair of PIARC TF 4.1 Road Design Standards, Poland

#### **Presentations**

- · Analogies and Differences in Road Design Standards Deliverables of TF 4.1
  - · Member of PIARC TF 4.1 (TBC)
- A Study on the New Design Standards for Weaving Section in terms of Traffic Safety and Operation
  - · Seungjun LEE (Korea Expressway Corporation Research Institute, South Korea)
- · Modern Ways of Design of Two-Lane Roads in Rural and Urban Areas
  - Zuzana ČARSKÁ (Czech Technical University in Prague, Czech Republic) Member of PIARC TF 4.1
- Application of a Mexican predictive velocity model for the evaluation of horizontal alignment consistency
  - Emilio ABARCA PÉREZ (Instituto Mexicano del Transporte (Mexican Transportation Institute), Mexico)
- Review of visibility guidelines in France: Update of the related fundamental parameters and introduction of a performance-based approach to optimize the design of road projects
  - · Matthieu HOLLAND (Cerema, France)

# **Questions and Answers**

Moderator: Mr. Mariusz Kiec, Chair of PIARC TF 4.1 Road Design Standards, Poland

#### **Break**

## Part 2 - BIM in Road Design Standards

#### **Presentations**

- Review of Selected Models for Road Design Deliverables of TF 4.1
  - · Member of PIARC TF 4.1 (TBC)
- · Digitalization in Infrastructure Sector as a Path to Efficiency
  - · Milan DONT (State Fund for Transport Infrastructure (SFDI), Czech Republic)
- · The utopia of BIM without considering project management
  - · Gerber Josafatt ZAVALA ASCAÑO (Universidad Nacional Mayor de San Marcos, Peru)
- Effectiveness of BIM and Driving Simulations to Identify Safety Issues in the New Road Design Process: A Case Study of the Kretek-Girijati Road, Yogyakarta, Indonesia
  - · Isnaini SETIYOWATI (Ministry of Public Works and Housing, Republic of Indonesia, Indonesia)
- · Implementation of BIM/CIM to Road Design for a Japanese Highway Project, Kobe-Nishi Bypass
  - · Hiasa SHUHEI (West Nippon Expressway Company Limited (NEXCO-West), Japan)

#### **Questions and Answers**

Moderator: Ms. Zuzana Carska, Member TF 4.1, Czech Republic

#### Conclusion

Session Chair: Mr. Margo Briessinck, Chair of PIARC TC 4.1 Pavements, Belgium

#### **Organization**

**Session Organisation and Secretariat:** Mr. Mariusz Kiec, Chair of PIARC TF 4.1 Road Design Standards, Poland

# **TS2.3 Technical Session 2.3 – Freight**

Thursday, October 5, 14:30–18:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Mr. Martin Ruesch, Chair of PIARC TC 2.3 on Freight, Switzerland

This session will share the results, findings and recommendations of the work completed by the PIARC TC 2.3 Freight on the following topics:

- Best practices, monitoring and regulation to reduce overloading and associated infrastructure damage on road networks
- · Greening of freight transport
- · Application of emerging technologies in freight transport and logistics

Overloaded trucks, non-compliance or poor vehicle conditions, driver fatigue and speeding remain main challenges in road freight transport, especially also in Low-Middle-Income Countries (LMIC). These issues can cause severe road safety problems, substantial damage to the road infrastructure and environmental impacts. In a first part of the session the challenges, suitable approaches and good practices mitigating truck overloading are presented and discussed.

Reducing greenhouse gas emissions will remain a significant challenge and will require the greening of road freight transport. There are increased demands from various stakeholders to identify strategies and measures to reduce the climate impact from the transport system and phase out the use of fossil fuels. Greening freight transport is presented and discussed in the second part of the session. The challenges, suitable approaches and good practices will highlight types of solutions that continues to evolve.

Innovations and advances in emerging technologies are changing the logistics and management of the freight transport system. These technologies have the potential to increase productivity, efficiency, reliability, flexibility, safety, sustainability, and economic benefits. A discussion of emerging technologies will be included in each part of the sessions referenced above.

Besides the results of the TC 2.3 Freight work during the cycle also some very good papers are presented. They cover truck overlading and greening freight transport:

- · Reducing Overloaded Vehicles Impact on Indonesia Road Agency Cost by Design Approach
- · Sustainable urban logistics roadmaps to green freight transport
- · A self driving cycle rickshaw for autonomous urban passenger and freight transport
- · A Comparison between rail and road transport as a strategy to reduce GHG's in Mexico

#### Welcome and session introduction

Martin Ruesch, Chair TC 2.3 Freight (Switzerland)

- Best practices, monitoring and regulation to reduce overloading and associated infrastructure damage on road network
  - · Olivier QUOY (France) Member of TC 2.3 Freight
- · Reducing Overloaded Vehicles Impact on Indonesia Road Agency Cost by Design Approach
  - · Julia AUGUSTINE (Directorate General of Highways, Ministry of Public Works and Housing, Indonesia)
- · Public Private Partnership Model of Weighbridge Operations in South Africa
  - · Layton LESEANE (South Africa) Member of TC 2.3 Freight
- · Emerging technologies to improve efficiency and productivity of road freight transport
  - · Caroline MAYS (United States) Member of TC 2.3 Freight
- Direct enforcement of overloads: extensive full scale tests and certification procedure of WIM systems
  - · Bernard JACOB (Université Gustave Eiffel, France)

#### **Questions and Answers**

Moderator: Tiffany JULIEN, Member of TC 2.3 Freight (United States)

#### **Break**

#### **Presentations**

- · The Importance of Greening Freight
  - · Else-Marie MARSKAR (Norway) Member of TC 2.3 Freight
- · Approaches for Greening Freight Transport
  - · Hinko VAN GEELEN (Belgium) Member of TC 2.3 Freight
- · Sustainable urban logistics roadmaps to green freight transport
  - · Cédric BARIOU (France) CEREMA
- A Self-Driving Cycle Rickshaw for Autonomous Urban Passenger and Freight Transport
  - · Martin MARGREITER (Technical University of Munich, Germany)
- $\cdot$  A comparison between rail and road transport as a strategy to reduce GHGs in Mexico
  - · Juan Fernando MENDOZA SANCHEZ (Mexican Institute of Transportation, Mexico)

### Questions and Answers, Panel discussion with speakers

Moderator: Tiffany Julien, Member of TC 2.3 (United States)

#### Conclusion

Martin Ruesch, Chair TC 2.3 Freight (Switzerland)

# FS11 Foresight Session 11 – A Gender Inclusive Transport system

Thursday, October 5, 14:30–18:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Emanuela Stocchi, Chair of the Promotion of gender inclusion and diversity team, PIARC and Sue Percy, Vice chair of the Promotion of gender inclusion and diversity team, PIARC

Transport, including roads, is not gender neutral- how we travel, when we travel and what transport mode we use differs between men and women. Road policy and strategy rarely recognizes the needs and priorities of all users. One reason for this is that women are underrepresented in the global transport workforce representing less than 20% of the global transport workforce. This session will explore the question What is (a) gender inclusive transport (system)? Speakers from different parts of the road and transport system will provide examples and challenges regarding gender balance and equity in the transportation workforce as well as how gender considerations are and can be included in planning, design, construction and maintenance of transportation infrastructure. The first part of the session will focus on gender balance and equity in transportation administrations and international transport agencies and in a second part speakers will discuss the ways in which transport infrastructure is not gender neutral and what it means to incorporate a gender perspective in the planning, design, construction, maintenance of road transport. The session will provide a variety of perspectives from around the world.

### Welcome and introduction to Topic 1

**Moderator:** Emanuela Stocchi, Director of International Affairs, Associazione Italiana Società Concessionarie Autostrade e Trafori, Italy – PIARC Promotion of Gender Inclusion and Diversity Team, PIARC Executive Committee, and French speaking Secretary for the Terminology Committee

#### **Presentations**

- · Opening presentation
  - · Victoria SHEEHAN (United States) Executive Director, Transportation Research Board
- Promoting Gender Equality and Women's Empowerment through ADB Transport Sector Projects
  - · Samantha HUNG (Philippines) Director Gender Equality, ADB
- · Paving the Way for Women in Rural Areas
  - Imen MAKHLOUF (Tunisia) Senior Civil Engineer, Independent consultant, Tunisia Road Association – TC 2.2 French speaking Secretary 2020–2023 and Chair of TC 2.2 for the new cycle 2024–2027
- · Investing in Gender: Physical Designs for a Gender-Inclusive Transportation System
  - Alyssa RYAN (United States) PhD, Assistant Professor of Civil &; Architectural Engineering &;
     Mechanics at the University of Arizona
- · Looking for Gender Aspect in Mobility
  - Milota SIDOROVA (Slovak Republic) Vice-Chair of the Authority for Spatial Planning and Construction

#### **Break**

# **Introduction to Topic 2**

**Moderator:** Sue Percy, Chief Executive, Chartered Institution of Highways & Transportation, UK, Vice chair of the PIARC Promotion of gender inclusion and diversity team

#### **Presentations**

- · Gender Responsive Urban Transport in India
  - · Sanjay Kumar NIRMAL (India) Secretary General, Indian Roads Congress PIARC Executive Committee member and PIARC Task force on Road Design Standards member
- · Travelling in a Woman's Shoes
  - · Rachel CAHILL (Ireland) Director Chief Executive Office, Transportation Infrastructure Ireland (TII)

#### Panel Discussion with Q&A from audience

**Moderators:** Emanuela Stocchi and Sue Percy Susanna Zammataro, Director-General, International Road Federation (IRF) All speakers from topics 1 and 2

## **Organization**

Lori Porreca, USA, PGID (Promotion of Gender Inclusion and Diversity Team)

# SPS3 Special Project Session 3 – Interurban Cycling Infrastructure

Thursday, October 5, 14:30–18:00 Room: Small Hall, Ground floor

Chair: Ok "Stella" Namkung, PIARC TC 2.1 member, South Korea

Under the challenge of climate change, cycling has become a viable alternative to motorized transport. Both in LMICs) and HICs with a growing market share of cycles and particularly e-cycles (bicycles assisted by electric batteries) and widespread adoption of bike-sharing system (PBS), cycling currently sees its revival as an attractive alternative or supplement not only for urban transport but also for longer routes. Providing the necessary cycling infrastructure, both for short and long-distance cycle journeys is key to this development. Cycling infrastructure such as segregated bicycle lanes on local highways or longer distance routes alongside motorways or strategic roads can play a crucial role.

A number of road and transport administrations are expanding their focus on biking.

This session will offer a global view of the Interurban Cycling Infrastructure and feature an in-depth review of six case studies, with a light review of an additional 14 case studies. The case studies will showcase exemplary projects and policies. There will be a balance between low-income, middle-income, and high-income countries.

- 1. Welcome and session introduction
- 2. Presentations
- 3. Questions and answers
- 4. Presentations
- 5. Questions and answers
- 6. Conclusions

#### Welcome and session introduction

Ok "Stella" Namkung, PIARC TC 2.1 member, South Korea

#### **Presentations**

- · Introduction to PIARC Special Projects program
  - · Miguel CASO FLÓREZ (PIARC) Technical Director
- Interurban Cycling Infrastructure
  - · Mikkel BRUUN (Bruun Communications, Denmark)
  - · Niels HOE (HOE360 Consulting, Denmark)

### **Questions and answers**

Moderator: Ok "Stella" Namkung, PIARC TC 2.1 member, South Korea

#### **Break**

- · Interurban Cycling Infrastructure in the USA
  - · Hari KALLA (FHWA, United States)
- · Korean Case Study: Seoul Bike Infrastructure
  - · Ok "Stella" NAMKUNG (South Korea) PIARC TC 2.1 member
- · Utah's Regional Active Transportation System
  - · Carlos BRACERAS (Utah's Department of Transportation, United States)

- Applying Cycling Infrastructure to Large and Complex Intersections, A Cross National Analysis
  - · Scott BRODY (McLaren Engineering Group, United States)

## **Questions and answers**

Moderator: Ok "Stella" Namkung, PIARC TC 2.1 member, South Korea

#### **Conclusions**

Ok "Stella" Namkung, PIARC TC 2.1 member, South Korea

# TS1.2Technical Session 1.2 – Road and Transport Planning for Economic and Social Development

Thursday, October 5, 14:30–18:00 Room: Panorama Hall, 1<sup>st</sup> floor

Chair: Mr. Fabio Pasquali, Chair of PIARC TC 1.2 on Road and Transport Planning for Economic and Social Development, Italy

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issues: 1.2.1 Transport modeling and forecasting for preparing econometric analyses. 1.2.2 Implementation of sustainable mobility plans. 1.2.3 Economic and social contribution of road transport system. The session will be complemented by the outcomes of the call for papers on the following topics: 1. Innovation and new approaches for the study of mobility of people and goods. 2. Sustainable mobility planning. 3. Economic and social effects of investment and operation in the road sector.

#### Welcome and session introduction

- · Introduction and accomplishments of the PIARC TC1.2
  - Fabio PASQUALI (Italy) Chair of PIARC TC 1.2 on Road and Transport Planning for Economic and Social Development
  - · Christoph WALTHER (Germany) Scientific coordinator of TC 1.2
- · The borders of the new challenges
  - Fabio PASQUALI (Italy) Chair of PIARC TC 1.2 on Road and Transport Planning for Economic and Social Development
- Description of the activity of the PIARC TC1.2. Emerging Methods, Practices and Guidelines for Determining the Economic and Social Contributions of Road Transport Systems
  - · Christoph WALTHER (Germany) Scientific coordinator of TC 1.2

#### **Questions and Answers**

#### **Break**

- Introduction
  - · Dr. Christoph Walther, Scientific coordinator of TC1.2, Germany
- Assessing social equity and accessibility of transport systems for people with disability in Kenya
  - · Mehran ESKANDARI TORBAGHAN (University of Birmingham, United Kingdom)
  - E. NGEZAHAYO (University of Birmingham, United Kingdom)
  - · C. LUIU (University of Birmingham, United Kingdom)
  - · W. AVIS (University of Birmingham, United Kingdom)
  - · O. E. OBUOLLOH (Kenya National Highways Authority, Kenya)
- · Identifying and solving the problems of access to basic services in rural communities through the Integrated Rural Access Planning system
  - Jose-Alfonso BALBUENA-CRUZ (Mexican Institute of Transportation, Mexico)
  - · Carlos-Daniel MARTNER-PEYRELONGUE (Mexican Institute of Transportation, Mexico)
- Developing environment and social aspects in Sustainable Transport Indicators for Metropolis: The Greater Jakarta case
  - · Alfa Adib ASH SHIDDIQI (DG of Highways, Ministry of Public Works and Housing, Indonesia)
  - · Gede B. SUPRAYOGA (DG of Highways, Indonesia)
- Economic evaluation of externalities caused by traffic accidents
  - · Alena DAŇKOVÁ (CDV Transport Research Centre, Czech Republic)
  - · Lenka TOMEŠOVÁ (CDV Transport Research Centre, Czech Republic)

- · Jiri AMBROS (CDV Transport Research Centre, Czech Republic)
- · A new way of planning sustainable mobility: the case study of the Genoa sub-port tunnel
  - · Flavia SCISCIOT (TECNE Gruppo Autostrade per l'Italia, Italy)
  - · Stefano SANTAMBROGIO (TECNE Gruppo Autostrade per l'Italia, Italy)
  - · Elisa MASTROGIROLAMO (TECNE Gruppo Autostrade per l'Italia, Italy)
  - · Ciro BUONOCORE (TECNE Gruppo Autostrade per l'Italia, Italy)
  - · Francesca PAUDICE (TECNE Gruppo Autostrade per l'Italia, Italy)
- · A Study on the Determinants of Forecasting for Sales at Korea Expressway Rest Areas using a Regression Analysis
  - · Jae-Uoong KIM (Korea Expressway Corporation, South Korea)
  - · Hyunji KIM (Korea Expressway Corporation, South Korea)

#### **Questions and Answers**

Dr. Christoph Walther, Scientific coordinator of TC1.2, Germany

#### **Break**

#### **Presentation**

- Presentation of the activities of PIARC TC 1.2 in 2024–2027 Planning Road Infrastructure and Transport to Economic and Social Development
  - · Ilaria COPPA (Italy) Future Chair

#### Conclusion

**Session Organiser:** Mr. Fabio Pasquali, Chair of PIARC TC 1.2 on Road and Transport Planning for Economic and Social Development, Italy

# WS14 Workshop 14 – Digital transformation in road infrastructure – Part 1

Thursday, October 5, 14:30–18:00 Room: Club A, 1<sup>st</sup> floor

Chair: Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

For many road authorities todays digital technology provides a wide range of opportunities to improve the planning, design, construction and asset management of their road network. For instance:

- · Artificial intelligence enables the planner to automatically investigate a number of maintenance scenarios and choose the optimum one,
- Building Information Models provide a digital model a (part of) the road consisting of objects with their specific properties and relationships,
- · Scanning techniques enables the planer, designer and contractor to obtain the latest information of the existing road and its environment and
- · Common data environments and semantic techniques assist the asset manager to make the road data FAIR (Findable, Accessible, Interoperable and Reusable

However, it is evident that digital assets are also assets and need to be managed appropriately in order to be able to benefit from it at the fullest. It is fair to say that the digital transformation of infrastructure in every phase in its lifecycle has (just) started.

This session is to show the audience what can be expected from further future digitalisation focusing on paths that different road agencies and consultants are taking toward fully digitalized Asset Management.

#### Welcome and session introduction

Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

#### **Presentations**

- Infrastructure Asset Management using BIM-based Information Containers
  - · Markus KÖNIG (Ruhr University Bochum, Germany)
- · Al in Corridor
  - · Tuomo PALOMAA (Ramboll, Finland)
- · Digital Twin for Highway Maintenance, Disaster Prevention and Safety in Urban Area
  - · Hiroshi DOBASHI (Shutoko Technology Center, Japan)
- · IABSE T.G 5.6: An Overview of current state of BIM for existing bridges
  - Matias VALENZUELA (Pontificia Universidad Católica de Valparaíso, Chile) Member of PIARC TC 4.2 Bridges

# **Questions and answers**

**Moderator:** Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

Co-moderator: Pascal Rossigny, Cerema, secretary of PIARC TC 3.3 Asset Management, France

#### **Break**

#### **Presentations**

- An Implementation of ICT to an Expressway Construction Work looking forward to the Maintenance Phase
  - · Naoki ISHIKAWA (East Nippon Expressway Co., Ltd. (NEXCO-East), Japan)
- · BIM as leverage towards Digital Asset Management today and the Digital Twin of tomorrow
  - Natasha BLOMMAERT (Agency For Road and Traffic, Belgium) Member of PIARC TC 3.3 Asset Management

#### **Questions and answers**

**Moderator:** Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

Co-moderator: Pascal Rossigny, Cerema, secretary of PIARC TC 3.3 Asset Management, France

#### **Panel discussion**

**Moderator:** Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

Co-moderator: Pascal Rossigny, Cerema, secretary of PIARC TC 3.3 Asset Management, France

- · What should be the role of PIARC regarding the topic "Digitalisation"?
- · Who is the steering the digitalisation in road asset management?
- · What is the role of government in the digitalisation?

#### **Conclusion**

## **Organization**

Session Organisers: Prof. Dr. Rade Hajdin and Benno Koehorst

Session Secretary: Dr. Nikola Tanasić

# WS15 Workshop 15 – New inspection and rehabilitation techniques for bridges

Thursday, October 5, 14:30-18:00 Room: Club E, 1st floor

Chair: Gonzalo Aria Hofman, Spain, Spanish-speaking Secretary TC 4.2, and Pierre Gilles, Belgium, French-speaking Secretary TC 4.2

Bridge inspection, repair and rehabilitation form an essential part of bridge management. New technologies such as remote sensing and the use of a variety of sensors have the potential to significantly improve the quality of the results of structural inspections. On the other hand, aging infrastructure with limited functional capacity pose a major problem in terms of maintaining mobility for the traveling public as well as the transportation of freight and services. Identification of new repair and rehabilitation materials can accelerate and improve the repair and rehabilitation of bridges under traffic. In addition, new technologies and construction methods can also be applied to repair or rehabilitate aging bridges under traffic. For these reasons, this workshop will be organized into two sessions titled "New Inspection methods" and "Assessment and Rehabilitation".

#### Session 1 - New Bridge Inspection methods

#### Welcome and session introduction

Moderator: Gonzalo Arias Hofman (TC 4.2 Spanish Secretary), INES Engineering, Spain

#### **Presentations**

- Introduction including outputs of Issue 4.2.3 Advancement of inspection techniques / technologies and bridge management systems
  - · Gonzalo ARIAS HOFMAN (Spain)
- Structural monitoring and evaluation of the Rio Papaloapan cable-stayed bridge during the rehabilitation of the upper anchoring elements
  - · Miguel ANAYA DÍAZ (INSTITUTO MEXICANO DEL TRANSPORTE, Mexico)
- · UAV-based bridge inspection and damage detection
  - Heungbae GIL (Korea Expressway Corporation, South Korea)
- · Smart Bridges in Germany
  - · Julia SIETAS (Institute for Infrastructure and Real Estate Management, TU Braunschweig, Germany)
- · The method for estimating the position of the inspection Image using image registration
  - · Yong-Rae YU (Sejong University, South Korea)
- Detection of Wire Breaks in Stay Cable and External Prestressed Cable using a Magnetic Rope Testing Device
  - · Bastien VAURIGAUD (Cerema, France)

## **Questions and Answers**

Gonzalo Arias Hofman, Spain

#### Conclusion

Hajar Zoubir, National Center of Road Studies and Research – General Road Directorate, Morocco

#### Session 2 - Assessment and Rehabilitation

Welcome and session introduction

Moderator: Pierre Gilles (TC 4.2 French Secretary), SPW Mobility and Infrastructure, Belgium

#### **Presentations**

- · Introduction including outputs of Issue 4.2.4 New rehabilitation materials and technologies
  - · Pierre GILLES (Belgium) SPW Mobility and Infrastructure, TC 4.2 French Secretary
- · Manes Bridge Complex Diagnostics and Assessment
  - · Vaclav HVIZDAL (Pontex Ltd., Czech Republic)
- Development of high durable precast PC deck with ultra-high-strength fiber-reinforced concrete layer
  - · Hidekazu HAYASHI (East Nippon Expressway Company Limited, Japan)
- Extending the useful life of a steel structure with fatigue cracking using experimental measures and finite element analyses
  - · Geneviève DAVID (Ministère des Transports du Québec, Canada/Quebec)
- · The First Large-Scale Renewal Work on the Metropolitan Expressway
  - · Tetsuhiro SASAMORI (Metropolitan Expressway Company Limited, Japan)
- · Rehabilitation of Barrandovský Bridge over the Vltava River in Prague
  - · Petr SOUČEK (Pontex Consulting Engineers, Ltd., Czech Republic)

#### **Questions and Answers**

#### Conclusion

Carmen Swanwick, Utah Department of Transportation, USA

# Organization

**Session Organiser:** Kiyohiro Imai, Japan, TC 4.2 Chair **Session Secretary:** Kiyohiro Imai, Japan, TC 4.2 Chair

# OSE3 Open Side Event 3 – iRAP Innovation Workshop – Safer Roads for People and Planet – Part 1

Thursday, October 5, 14:30–18:00 Room: Chamber Hall, 3<sup>rd</sup> floor

Chair: Rob McInerney, CEO, International Road Assessment Programme (iRAP)

Road safety is critical to achieving the UN Sustainable Development Goals. Road crashes remain the biggest killer of young people worldwide and transport produces around 25% of man-made carbon emissions. Innovative policies, tools and action are needed to meet international and national road safety and sustainable transport targets through solutions that deliver for both people and the planet.

Promoting active mobility is central to decarbonizing urban mobility. But as more people move to sustainable modes such as walking and cycling, exposure to conflicts with large, high-speed vehicles increase. It is therefore essential the safety of all road users is at the heart of transport planning and policy. Policy experts are embracing Safe System principles in support of Vision Zero goals and the potential for 5-star users in 5-star modes of transport on 5-star roads at safe speeds to provide the framework for that to occur.

The 2023 iRAP Innovation Workshop will bring together leaders and experts in road safety innovation, policy, technologies and investment from across the world. With the theme "Safer Roads for People and Planet", presentations and discussions will explore innovations in road agency leadership, data, investment planning and finance that can be used to implement change and deliver on the Global Plan for the Decade of Action for Road Safety 2021–2030 and the Paris Agreement.

This Workshop will run over two days on Thursday 5 (afternoon) and Friday 6 October (morning). Attendance is open to Congress delegates but separate registration is required. Seats are limited! For further information on the programme and to register, visit https://irap.org/2023/07/innovation-workshop-programme-released-and-registration-opens/

#### Where are we now?

#### Welcome and session introduction

Monica Olyslagers Global Innovation Manager and Cities Specialist, iRAP

#### **Presentations**

#### Welcome address

Jean Todt, United Nations Secretary-General's Special Envoy for Road Safety

#### Where are we ... worldwide

- · The latest on PIARC Innovation
  - · Patrick MALLÉJACQ PIARC Secretary General
- · Star Rating targets and Australia's multi-billion dollar Safer Roads Fund
  - · Geoff ALLAN Chief Executive Officer, Austroads
- Practical applications of YEA, CycleRAP, Active Travel Tool and Route Review Tool in European cities & the ELABORATOR project
  - Monica OLYSLAGERS Global Innovation Manager and Cities Specialist, iRAP

# Where are we ... at a country level

- iRAP Safety Insights Explorer: Empowering countries with data informed by the world's largest road infrastructure safety database
  - · Greg SMITH Global Programme Director, iRAP

## Where are we ... at a city level

- · What's new in designing global cities
  - · Paul SUPAWANICH Director of Programs, Global Designing Cities Initiative

# Presentation of the Gary Liddle Memorial Trophy Questions and Answers

Monica Olyslagers, Global Innovation Manager and Cities Specialist, iRAP

#### **Break**

# What are we planning and building for the future? Introduction

Veronika Valentova, Transport Research Centre (Centrum Dopravniho Vyzkumu)

#### **Presentations**

- · Celebrating success: Before and after case studies from the world
  - · Judy WILLIAMS Global Programme and Communications Manager, iRAP
- · Delivering safer roads in support of Target 3 for 3-star and better roads
  - · Bosco MARTI Global Director of Institutional Affairs and Communications, Aleatica
- MCC and iRAP partnership in MCC compact countries and opportunities to spur private sector participation
  - Yohannes ABEBE Global Practice Leader and Senior Director for the Transport and Vertical Structure Group, Millennium Challenge Corporation (MCC)
- Harnessing the power of traffic simulation and data for safer urban road networks:
   The PHOEBE project
  - · Martin HARTMANN Solution Design Manager, Aimsun
- Star Rating targets and Australia's multi-billion dollar Safer Roads Fund
  - · Geoff ALLAN Chief Executive Officer, Austroads
- Practical applications of YEA, CycleRAP, Active Travel Tool and Route Review Tool in European cities & the ELABORATOR project
  - $\cdot$  Monica OLYSLAGERS Global Innovation Manager and Cities Specialist, iRAP
- · Star Rating for Designs: Safe right from the start
  - · James BRADFORD Global Technical Director, iRAP

# **Questions and Answers**

Veronika Valentova, Transport Research Centre (Centrum Dopravniho Vyzkumu)

# **Reflections of Day 1**

- · Preparing for 2030: Where are we at and where's the potential
  - · Samar ABOURAAD Safer Journeys Specialist for Europe, iRAP

# **Organization & Registration**

Session Organisers: International Road Assessment Programme (iRAP)

**Session Secretary:** Judy Williams, Global Programme and Communications Manager, iRAP **Website:** <a href="https://irap.org/2023/07/innovation-workshop-programme-released-and-registration-opens/">https://irap.org/2023/07/innovation-workshop-programme-released-and-registration-opens/</a>

# **Posters for National Reports**

14:30-18:00 Terrace 2B, 2<sup>nd</sup> floor

# **Cultural festival session**

Thursday, October 5, 19:30-20:30

During this festival session, several activities will take place. Among others, PIARC Honorary Presidents will recognize PIARC Honorary Members. PIARC Honorary Presidents in attendance:

- · Oscar DE BUEN RICHKARDAY, Mexico
- · Colin JORDAN, Australia
- · Anne-Marie LECLERC, Canada-Québec

# Friday, October 6

# K4 Keynote 4 – Roads for decarbonization and adaptation

Friday, October 6, 08:30–09:15 Room: Congress Hall, 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> floor

This keynote session will discuss how road operators address decarbonization and adaptation. Keynote speakers will be:

- · Nancy Daubenberger, Minnesota Department of Transportation (USA),
- · Christophe Saintillan, Deputy Managing Director of VINCI Autoroutes (France).

**Nancy Daubenberger** has worked for the Minnesota Department of Transportation for over 22 years, in engineering and management positions and was appointed by Governor Tim Walz and Lt. Governor Peggy Flanagan as the agency's Commissioner in May 2022 after serving for three years as Deputy Commissioner and Chief Engineer. Prior to her current role, she served as the Assistant Commissioner for Engineering Services, the State Bridge Engineer, and also previously served in planning, project management and design roles for the MnDOT Bridge Office and Metro District. Before coming to MnDOT, she worked in consulting for about six years, in both bridge and road design.

**Christophe Saintillan** currently is Deputy Managing Director of VINCI Autoroutes, France's leading freeway concession company, in charge of 4,400 km of motorway. Previously, he was with the French Ministry of Transport for twenty years, in charge of various road design, road policy and infrastructure management roles. He was a Member of the PIARC Executive Committee from 2010 to 2016 and First Delegate for France. He joined the Great Paris (Île-de-France) regional council for 4.5 years, where he was in charge of housing and transport.

Christophe Saintillan will present how VINCI Autoroutes address decarbonization and adaptation. VINCI Autoroutes has been working with academics on the decarbonization of the road: starting from the observation that in France, the transport sector has become the most emitting sector and the only one whose emissions are not being reduced, Vinci Autoroutes has studied the concrete actions to be taken to bring mobility on freeways in line with the trajectory imposed by the Paris Agreement and French national policies. These include welcoming electromobility for light vehicles (massive installation of charging stations) and heavy goods vehicles (charging stations, ERS), encouraging the most virtuous modes of transport (car-sharing, public transport thanks to reserved lanes, parking facilities and multimodal platforms) and, more generally, making freeways part of a logic of urban and environmental integration and adaptation to climate change, given their impact on the weather (reducing the consequences of flooding, protection against the risk of fire). This calls for a massive and urgent investment plan, broken down by action and costed.

This session will be moderated by Patrick Malléjacq, Secretary General of PIARC.

# Posters for topics 4, 5, 6, 21, 22, 23, 35, 36, 37, 49

09:15-13:30 North Hall, 2<sup>nd</sup> floor

# TSTF3.1 Technical Session TF3.1 – Road infrastructure and transport security

Friday, October 6, 09:30–13:00 Room: South Hall 1, 1st floor

Chair: Mr. Saverio Palchetti, Chair of PIARC TF 3.1 on Road Infrastructure and Transport Security, Italy

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issue:

3.1.1 Embedding security into other infrastructure and transport-related topics.

The session will be complemented by the outcomes of the call for papers on the following topic:

1. Digital and physical security for infrastructure and transport resilience.

#### Welcome and session introduction

Saverio Palchetti – TF 3.1 Chair

## Overview of activities performed by TF 3.1

Saverio Palchetti - TF 3.1 Chair

# Presentations - 1. Malicious acts and illegal transport

- · Best practices and tips to limit theft and vandalism of road assets
  - Philippe CHANARD (PIARC French-speaking Secretary Task Force 3.1, former deputy director of DIR Massif Central, France)
- Current road security problems in the Romanian territory due to the illegal transport of dangerous goods
  - Flavius-Florin PAVĂL (Head of Traffic Safety Service CNAIR, Associate Professor UTM DIIT, Romania)

# Presentations - 2. Security threats of new technology

- · New Safety and Security Requirements for Road Infrastructure in the AI era
  - · Zábovský MICHAL (Professor, University Science Park, University of Žilina, Slovak Republic)

# **Questions and Answers**

Moderator: Saverio Palchetti – TF 3.1 Chair

#### **Break**

# Presentations - 3. Security and complexity of infrastructure

- The difficulties of risk assessments for complex network infrastructure: applications to the security and the resilience of road infrastructure.
  - · Saverio PALCHETTI (Thinking Security, Italy)

#### · Tunnel security, a complex approach for complex structures

 Philippe CHANARD (PIARC French-speaking Secretary Task Force 3.1, former deputy director of DIR Massif Central, France)

## **Questions and Answers**

Moderator: Saverio Palchetti – TF 3.1 Chair

# **Roundtable on Tomorrow's Security Issues**

Participants
All Oral Presenters
Moderator:
Saverio Palchetti – TF 3.1 Chair

# **Session Closing and conclusion**

Saverio Palchetti – TF 3.1 Chair

# FS12Foresight Session 12 – Electric Vehicles and Charging Infrastructure

Friday, October 6, 09:30–13:00 Room: South Hall 2, 2<sup>nd</sup> floor

Chair: Roger Millar, AASHTO President (USA)

Strategies to set the world on a net-zero carbon trajectory look at electrification of transport as one of the key instruments to achieve this ambitious target. Many higher income countries have made major commitments to deploy Electric Vehicles (EVs) and the necessary charging infrastructure. How are road agencies addressing the technical, social, political, and economic issues related to such a major undertaking? For the low-and-middle income countries, the transition to electric mobility brings additional benefits in terms of air quality, last-mile connectivity, and dependency on imported fuel. EVs come at a cost premium, sometimes more than 70% compared to conventional vehicles, creating a financial hurdle for many consumers in developed and developing countries. A new World Bank report The Economics of Electric Vehicles for Passenger Transportation, found that investing in electric vehicle charging infrastructure can be up to six times more effective at encouraging EV purchases than subsidies.

The session will address the following questions:

- · What's the business case for electric mobility and how does it articulate in different regions of the world?
- · What's the role that charging infrastructure plays and can play in accelerating the transition to electric mobility?
- · What actions can governments and financial institutions take to facilitate and scale-up equitable deployment?

#### Welcome and session introduction

Roger Millar, AASHTO President, USA

# The business case for e-mobility around the world

Moderator: Roger Millar, AASHTO President, USA

- Keynote presentation
  - · Guangzhe CHEN Vice President, Infrastructure, The World Bank (TBC)
- · The business case for e-mobility: the US experience
  - · Shailen BHATT (United States) Administrator of the Federal Highway Administration (FHWA)
- · The business case for e-mobility: the Asian experience
  - · Jamie LEATHER Chief of Transport Sector Group, Asian Development Bank
- · The business case for e-mobility: the EU experience
  - Malika SEDDI Secretary General and CEO, European Association of Toll motorway Operators (ASECAP)

# **Enablers and roadblocks: lessons learned from initial deployments**

Moderator: Roger Millar, AASHTO President, USA

- · The case of France
  - · Christophe SAINTILLAN (France) Deputy Director General, Vinci Autoroutes
- · The case of Morocco
  - Anouar BENNAZOUZ Director General, Moroccan Highways (Autoroutes du Maroc) &; IRF President
- · The case of USA
  - · Gabe KLEIN (United States) Executive Director Joint Office of Energy and Transportation

#### **Break**

## **Questions and Answers**

Moderator: Roger Millar, AASHTO President, USA

# Panel discussion – New business models for scaling-up infrastructure deployment

Moderator: Susanna Zammataro, Director General, International Road Federation (IRF)

- · Cecilia M. Briceno-Garmendia, Lead Economist, Transport Global Practice, The World Bank
- · Steve Phillips, Secretary General, Conference of European Directors of Roads (CEDR)
- · Salvatore Bernabei, Head of Enel Green Power and Thermal Generation and Head of Africa, Asia and Oceania
- · Henri Chua, IM Technologies Limited, United Kingdom

#### Conclusion

Session Chair: Roger Millar, AASHTO President, USA

## **Organization**

Session Organisers: AASHTO (lead), IRF (Geneva, Switzerland)

# TS2.4 Technical Session 2.4 – Road Network Operation / Intelligent Transportation Systems

Friday, October 6, 09:30–13:00 Room: South Hall 3AB, 3<sup>rd</sup> floor

Chair: Valentina Galasso, Chair of PIARC TC 2.4 (Italy)

This session will share the results of the work completed by the Road Network Operations / ITS Technical Committee to investigate how technology advances are influencing road network operations. This included an examination of new forms of mobility and the business models associated with Mobility as a Service (MaaS). The TC also identified opportunities and best practices related to the application of data related technologies and data driven decision-making in order to improve the performance of the road network. Finally, the TC reviewed the RNO / ITS manual to improve knowledge sharing focusing on the need of LMICs.

#### Welcome and session introduction

Valentina Galasso, Chair of PIARC TC 2.4 (Italy)

#### **Presentations**

- · Opportunities of new mobility forms for road network operation: the work of WG 2.4.1
  - Yan ST-YVES (Canada/Quebec) Work Group Leader
- · The role of Road Network Operator for MaaS development: a case study from South Africa
  - · Gai BESTER (South Africa)
  - · Siveshn PILLAY (South Africa)
- · Approaches to MaaS from UK and Norway
  - · James ELLIOTT (United Kingdom)
  - · Arve KIRKEVOLD (Norway)

#### **Questions & Answers**

Moderator: Yan St-Yves (Canada-Québec)

#### **Presentations**

- The importance of Knowledge and expertise sharing for LMICs: the RNO-ITS Webresource: the work of WG 2.4.3
  - · Jennie MARTIN (United Kingdom)
  - · Sylvain BELLOCHE (France) Work Group leaders

#### **Break**

#### **Presentations**

- Optimizing road network operation decision-making through new technologies and digitalization: the work of WG 2.4.2
  - · Clarissa HAN (Australia)
  - · Galen MC GILL (United States) Work Group leaders
- · Data processing architecture for C-ITS: use cases, technical solutions and future directions
  - · Léo MENDIBOURE (Université Gustave Eiffel, France)
  - · Sassi MAALOUL (Université Gustave Eiffel, Junia, France)
- · Czech footprint in deployment of ITS and C-ITS services in European urban areas (C-ITS in Brno metropolitan area)
  - · Roman NEKULA (Brněnské komunikace a.s. (BKOM), Czech Republic)

- · Lessons learned through automated driving bus operation and efforts using C-ITS solutions
  - · Shoichi SUZUKI (Institute of Industrial Science, The University of Tokyo, Japan)

# Q & A and Panel Discussion on Issue 2 and 3

**Moderator:** Clarissa Han (Australia)

# Closing and preview of next cycle

Valentina Galasso (Italy) – TC 2.4 Chair

# FS13 Foresight Session 13 – Stress tests tool to assess the resilience of road asset to climate change hazard

Friday, October 6, 09:30–13:00 Room: South Hall 3C, 3<sup>rd</sup> floor

Chair: Ms. Teodora Popescu, Directorate General of Infrastructure, Transport and Mobility, France, Vice-chair of the UNECE Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport

The provision of adequate service level is the key objective of work of road asset managers. That service level should be provided despite various hazards, including such coming from climate change. Is however the road asset resilient to these hazards? What are the tools available to road asset managers to understand the degree of road resilience?

This foresight session is to present stress tests as tools for assessing the level of resilience of a selected road asset or road network to climate change hazard.

In this context, the session will discuss road transport asset/network, observed impacts of climate change on road assets/networks, road asset/network service level and economically optimal level of risk. It will also discuss costs and benefits associated with the managed road asset/network with and without intervention programme.

As far as stress tests are concerned, this foresight session will clarify:

- · How to define a stress test,
- · What approach to use,
- How to define the asset/network and hazard representation for the stress test,
- · How to deal with scenarios uncertainties, and
- · How to perceive estimated risks and the appropriateness of the test.

The foresight session will also simulate a stress test using qualitative approach. This is to provide a better understanding on what it takes for asset managers to carry out stress tests of their assets and/or networks.

#### Welcome and session introduction

Ms. Teodora Popescu, Directorate General of Infrastructure, Transport and Mobility, France, Vicechair of the UNECE Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport

# Road assets, climate change hazards, stress tests

Moderator: Mr. Lukasz Wyrowski, Sustainable Transport Division, UNECE

- · How to look at road asset to best understand the degree of its resilience
  - Bryan PROF. DR. ADEY (Switzerland) Institute of Construction and Infrastructure Management, ETH Zurich
- Observed impacts from climate change on transport infrastructure with focus on road assets
  - · Teodora POPESCU (France) Directorate General of Infrastructure, Transport and Mobility
- · Natural hazard risks for services by road assets challenges for stress tests
  - · Luuk PROF. DR. DORREN (Switzerland) Bern University of Applied Sciences BFH
- Balancing road service levels with costs and benefits of adaptation: the challenge to establish an economically optimal resilience level
  - · Thomas BLES (Netherlands) Expert Consultant Resilient Infrastructure, Deltares
- Stress tests as tools to assess resilience of transport asset to climate change
  - Bryan PROF. DR. ADEY (Switzerland) Institute of Construction and Infrastructure Management, ETH Zurich

- Example of stress tests: Stress test of road infrastructure in Chur region of Switzerland using quantitative approach
  - Hossein NASRAZADANI (Switzerland) Institute of Construction and Infrastructure Management, ETH Zurich

#### **Questions and answers**

#### **Break**

#### Stress test case study

#### **Moderator:**

Ms. Teodora Popescu, Directorate General of Infrastructure, Transport and Mobility, France, Vicechair of the UNECE Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport

- · Introduction to the case study
  - · Prof. Dr. Bryan Adey, Institute of Construction and Infrastructure Management, ETH Zurich

#### Simulation of the stress-test using qualitative approach

- · Facilitator
  - · Prof. Dr. Bryan Adey, Institute of Construction and Infrastructure Management, ETH Zurich
- · Panellists for the stress test
  - Ms. Amanda Siems-Anderson, Research Applications Laboratory, National Center for Atmospheric Research, United States of America
  - · Ms. Marlene Tomaszkiewicz, United Nations Economic and Social Commission for Western Asia
  - Mr. Mladen Marković, Chief Engineer for the National Integration Program for Road Infrastructure, Public Enterprise Roads of Serbia
  - · Mr. Paulo Soares de Melo, Infrastructures de Portugal
- · Calculation of level of risk/resilience and degree of uncertainty based on expert opinion
  - Hossein NASRAZADANI (Switzerland) Institute of Construction and Infrastructure Management, ETH Zurich

# **Questions and Answers**

# **Tools under development in UNECE Group of experts**

- Tools for assisting transport asset managers to deal with climate change impact and to carry out effective adaptation programme
  - · Lukasz WYROWSKI Sustainable Transport Division, UNECE

#### Conclusion

Ms. Teodora Popescu, Directorate General of Infrastructure, Transport and Mobility, France, Vicechair of the UNECE Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport

# Organization

Mr. Lukasz Wyrowski, Sustainable Transport Division, UN Economic Commission for Europe (UNECE)

# SPS4 Special Project Session 4 – Innovation policies in the road sector

Friday, October 6, 09:30–13:00 Room: Small Hall, Ground floor

Chair: Jonathan Spear, Atkins, UK, Vice-Chair of PIARC's Project Oversight Team

It can be argued that the transportation field has been on a continuous journey of innovations since historical times. The sector as a whole generates and requires innovation: cold-mix asphalt, intelligent transport systems, to name just two. Furthermore, some of the most recent innovations in transportation demonstrate that roads are a perfect vehicle for incorporating innovation: electric vehicles use roads, ride-hailing services use roads, etc.

This session will address innovation processes at the organizational level in the road sector. What are some of the key noteworthy and best practices employed by road and transport administrations to encourage and sustain innovation processes at the organizational level? What lessons on innovation can be learnt from other sectors which are applicable to road and transport agencies? What recommendations can be established and implemented at the organizational level? PIARC has commissioned TRL to prepare a report on those topics. Preliminary findings from the PIARC report will be presented by TRL, and discussions held during the session will contribute to the final version of the report.

#### Welcome and session introduction

Jonathan Spear, Atkins, UK, Vice-Chair of PIARC's Project Oversight Team

#### **Presentations**

#### Moderator:

Christos Xenophontos, Chair of PIARC Committee 1.1, Rhodes Island DoT, USA

- · Presentation of the PIARC report
  - · Kevin MCPHERSON (TRL, United Kingdom)
- · Fundamentals of Innovation in transport agencies
  - · Jonathan SPEAR (ATKINS, United Kingdom)
- · Innovation policies at D-G for Roads (MITMA) and D-G for Mobility Infrastructures (Catalonia) (Spain)
  - · José Manuel BLANCO SEGARRA (DGC, MITMA, Spain) Secretary of PIARC TC 1.1
- · Innovation policy at the Federal Highway Administration
  - · Leslie WRIGHT (FHWA, United States)

## **Questions and Answers**

Christos Xenophontos, Chair of PIARC Committee 1.1, Rhodes Island DoT, USA

#### **Break**

#### **Presentations**

#### **Moderator:**

Patrick Malléjacq, Secretary General, PIARC

- Putting Innovation First Innovation management approaches to manage a portfolio of innovation projects at the Autobahn GmbH of the German Federal
  - · Bernard GYERGYAY (Die Autobahn GmbH des Bundes, Germany)
- · Topic
  - · Anne-Séverine Poupeleer, Member of PIARC TC 1.1, Belgium

- · Research, Development, and Innovation Policy at the Uganda National Roads Authority
  - Mark Henry RUBARENZYA (Head Research and Development, Uganda National Roads Authority, Uganda) – PIARC Vice President
- · Topic
  - · Speaker (TBD)

# **Questions and Answers**

Patrick Malléjacq, Secretary General, PIARC

## Conclusion

Jonathan Spear, Atkins, UK, Vice-Chair of PIARC's Project Oversight Team

# **Organization**

Session Organiser: Christos Xenophontos, USA, and Patrick Malléjacq, PIARC GS

Session Secretary: Jonathan Spear, Atkins, UK

# TS1.3 Technical Session 1.3 – Finance and procurement

Friday, October 6, 09:30–13:00 Room: Panorama Hall, 1st floor

Chair: Mr. Francesco Sciaudone, Chair of PIARC TC 1.3 on Finance and Procurement, Italy

This session will present the work accomplished by the PIARC Committee during 2020–2023 on the following issues:41.3.1 Best practices in funding and financing of road infrastructure. 1.3.2 Impact of new propulsion techniques on funding. 1.3.3 Harmonization of procurement. The session will be complemented by the outcomes of the call for papers on the following topics: 1. New possible forms of public-private partnership to boost the road infrastructure sector. 2. Allocation of post-Covid recovery funds to the development of road infrastructures. 3. Integration of sustainability requirements in road infrastructure procurement.

#### Welcome and session introduction

Mr. Francesco Sciaudone, Chair of PIARC TC 1.3 on Finance and Procurement, Italy

#### **Presentations**

- Road to environmental sustainability Disclosure of ecological potentials in road construction
  - · Janos PASDERSKI (Technische Universität Braunschweig, Germany)
- The change and its continuation of the interest of highway rest facility users after the COVID-19 pandemic
  - · Katsunobu OKAMOTO (Central Nippon Expressway Company limited, Japan)

#### **Break**

#### **Presentations**

- New Possible Forms of PPP to Boost the Road Infrastructure Sector in Burkina Faso
  - · Donzala David SOME (Ministry in charge of Infrastructures, Burkina Faso)
- The impact of Public-Private Partnership projects for Highway Conservation under performance standards in Mexico
  - Ángel Trinidad MARTÍNEZ ARBOLEYA (Company: Vise, Mexico)

# **Questions and Answers**

All members

#### Conclusion

Mr. Francesco Sciaudone, Chair of PIARC TC 1.3 on Finance and Procurement, Italy

# WS14 Workshop 14 – Digital transformation in road infrastructure – Part 2

Friday, October 6, 09:30–13:00 Room: Club A, 1st floor

Chair: Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

For many road authorities todays digital technology provides a wide range of opportunities to improve the planning, design, construction and asset management of their road network. For instance:

- · Artificial intelligence enables the planner to automatically investigate a number of maintenance scenarios and choose the optimum one,
- Building Information Models provide a digital model a (part of) the road consisting of objects with their specific properties and relationships,
- · Scanning techniques enables the planer, designer and contractor to obtain the latest information of the existing road and its environment and
- Common data environments and semantic techniques assist the asset manager to make the road data FAIR (Findable, Accessible, Interoperable and Reusable).
- However, it is evident that digital assets are also assets and need to be managed appropriately in order to be able to benefit from it at the fullest. It is fair to say that the digital transformation of infrastructure in every phase in its lifecycle has (just) started.

This session is to show the audience what can be expected from further future digitalisation focusing on paths that different road agencies and consultants are taking toward fully digitalized Asset Management.

#### Welcome and session introduction

Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

#### **Presentations**

- · Reasons for BIM Level 3 and beyond
  - · Odilo SCHOCH (Swiss Federal Roads Office, Switzerland)
- · Now is the time to embrace the future of road inspection and maintenance planning
  - · Jasper WOGNUM (Inspech, BrainCreators,, Netherlands)
- · BIM in Life Cycle Management
  - · Markus STÖCKNER (Karlsruhe University of Applied Sciences, Germany)
- The MINnD French National Project about Interoperable information modelling for sustainable infrastructure
  - · Pascal ROSSIGNY (Cerema, France) Secretary of PIARC TC 3.3 Asset Management

## **Questions and answers**

**Moderator:** Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

Co-moderator: Pascal Rossigny, Cerema, secretary of PIARC TC 3.3 Asset Management, France

#### **Break**

#### **Presentations**

- The Digitalization Journey of the US Highways Sector A Historical Snapshot and Future Potential
  - · Jaganath MALLELA (Ph.D., WSP, United States)
- · BIM for existing infrastructure: Challenges and Solutions
  - Rade HAJDIN (Infrastructure Management Consultants GmbH, Switzerland) Member of PIARC TC 3.3 Asset Management

#### **Questions and answers**

**Moderator:** Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

Co-moderator: Pascal Rossigny, Cerema, secretary of PIARC TC 3.3 Asset Management, France

#### **Panel discussion**

**Moderator:** Prof. Dr. Rade Hajdin, Infrastructure Management Consultants GmbH, member of PIARC TC 3.3 Asset Management, Switzerland

Co-moderator: Pascal Rossigny, Cerema, secretary of PIARC TC 3.3 Asset Management, France

- · What should be the role of PIARC regarding the topic "Digitalisation"?
- · Who is the steering the digitalisation in road asset management?
- · What is the role of government in the digitalisation?

#### Conclusion

#### **Organization**

Session Organisers: Prof. Dr. Rade Hajdin and Benno Koehorst

Session Secretary: Dr. Nikola Tanasić

# WS16 Workshop 16 – HDM-4 – The Past, The Present, and the Future

Friday, October 6, 11:30–13:00 Room: Club E, 1st floor

Chair: Eric Stannard, CEO of HDMGlobal, UK

The current Highways Development and Management tool (HDM-4) has been available for almost 20 years. During that time it has built on the success and reputation of its predecessor, HDM-III to become the internationally recognised software tool recommended and used by aid-agencies worldwide. It has been distributed to over 120 countries and used by government agencies, construction agencies, research institutions, funding/development banks, and individual consultants in developed and developing countries. This workshop looks at the wide number of studies that HDM-4 has been used on, as well as looking at some current applications of the software which show how to integrate the tool with Asset Management systems to leverage data for an analysis as well as evaluation of new pavement materials. Finally, the workshop looks to the future, and introduces the role of the World Bank's initiative to update HDM-4 to produce a tool which will address the requirements of users into the future. There will be an opportunity to ask questions to the presenters and HDM-4 experts present at the workshop.

#### Welcome and session introduction

Eric Stannard, CEO of HDMGlobal, UK

#### **Presentations**

- · Applications of HDM-4 within MDBs
  - · Michael ANYALA Senior Road Asset Management Specialist, Asian Development Bank
- · Connecting HDM-4 to an Asset Management System
  - · Robin WORKMAN (United Kingdom) Principal Consultant, TRL
- · Investigating the Impact of Resilient Materials Using HDM-4
  - Mehran ESKANDARI TORBAGHAN (United Kingdom) Lecturer in Infrastructure Asset Management, University of Birmingham
- · Looking to the Future: HDM-5
  - Martin HUMPHREYS (United States) The World Bank, Global Lead Transport Connectivity and Regional Integration

# **Questions and Answers**

#### Conclusion

Eric Stannard

# OSE3 Open Side Event 3 – iRAP Innovation Workshop – Safer Roads for People and Planet – Part 2

Friday, October 6, 09:30–13:00 Room: Chamber Hall, 3<sup>rd</sup> floor

Chair: Rob McInerney, CEO, International Road Assessment Programme (iRAP)

Road safety is critical to achieving the UN Sustainable Development Goals. Road crashes remain the biggest killer of young people worldwide and transport produces around 25% of man-made carbon emissions. Innovative policies, tools and action are needed to meet international and national road safety and sustainable transport targets through solutions that deliver for both people and the planet.

Promoting active mobility is central to decarbonizing urban mobility. But as more people move to sustainable modes such as walking and cycling, exposure to conflicts with large, high-speed vehicles increase. It is therefore essential the safety of all road users is at the heart of transport planning and policy. Policy experts are embracing Safe System principles in support of Vision Zero goals and the potential for 5-star users in 5-star modes of transport on 5-star roads at safe speeds to provide the framework for that to occur.

The 2023 iRAP Innovation Workshop will bring together leaders and experts in road safety innovation, policy, technologies and investment from across the world. With the theme "Safer Roads for People and Planet", presentations and discussions will explore innovations in road agency leadership, data, investment planning and finance that can be used to implement change and deliver on the Global Plan for the Decade of Action for Road Safety 2021–2030 and the Paris Agreement.

This Workshop will run over two days on Thursday 5 (afternoon) and Friday 6 October (morning). Attendance is open to Congress delegates but separate registration is required. Seats are limited! For further information on the programme and to register, visit https://irap.org/2023/07/innovation-workshop-programme-released-and-registration-opens/

# **Innovative Results-based Financing and Reporting**

Welcome and session introduction

Steve Phillips, Secretary General, Conference of European Directors of Roads (CEDR)

#### **Presentations**

- Using Star Ratings to shape road agency strategy and investment in the UK
  - · Mike WILSON Chief Highways Engineer, National Highways, UK
- Safer infrastructure for all road users in the Danube: Learnings from the SABRINA and RADAR projects
  - · Samar ABOURAAD Safer Journeys Lead for Europe, iRAP
- · Innovative road safety policy, financing and performance monitoring in Europe
  - Marko SEVROVIC Associate Professor, Faculty of Transport and Traffic Sciences (FPZ), University of Zagreb and Senior Road Safety Engineer, European Institute of Road Assessment (EIRA)
- · Sustainability linked financing and impact investment to save lives
  - · Rob MCINERNEY Chief Executive Officer, iRAP
- · Sharing 55,000 km of assessment results to empower decision-makers in Brazil
  - Luiz GUILHERME DE MELLO Director, National Department of Infrastructure Brazil (DNIT) (invited)
- Vision Zero infrastructure assessment and 5-star roads
  - · Ana TOMAZ Vice President, Portugal National Authority for Road Safety

- · The power of interactive reporting
  - · Julio URZUA Global Project Director, iRAP

#### **Questions and Answers**

Steve Phillips, Secretary General, Conference of European Directors of Roads (CEDR)

#### **Break**

## **Scaling for People and Planet**

#### Introduction

Sam Cockfield, Manager, Road Safety, Transport Accident Commission (TAC)

#### **Presentations**

- · Innovation and best practice in Safe System performance
  - Jari KAUPPILA Head of Secretary-General's Office and Head of Quantitative Policy Analysis and Foresight, International Transport Forum
- · Innovation to drive sustainable mode choice in cities
  - Pedro HOMEM DE GOUVEIA Senior Policy and Project Manager, Governance and Integration, Safety and Security, POLIS
- · Building a network of innovators in urban mobility in Europe
  - · Lluis PUERTO Director of Market Development, EIT Urban Mobility
- · Outcome-led design for Target 3: Case studies from the UK and Australia
  - · Chris FURNEAUX Director, Arup
- Optimising the safety and sustainability of global road designs and construction:
   The iRAP-ORIS partnership
  - · Hugo PLEY-LECLERCO Project Manager, ORIS
- · AiRAP: Harnessing data and partnerships to map the safety of every road on Earth in support of Target 4
  - · Rob MCINERNEY CEO. iRAP
  - · Peter JAMIESON Managing Director, Anditi
  - · Richard OWEN CEO, Agilysis
  - John MILTON Chair of the PIARC Road Safety Committee and State Safety Engineer, Washington State Department of Transport
  - · Marc FIGULS Managing Partner, Factual Consulting

#### **Questions and Answers**

Sam Cockfield, Manager, Road Safety, Transport Accident Commission (TAC)

# **Workshop Closing Address**

- Unlocking the programme partnerships to achieve Targets 3 and 4 and halve road deaths and serious injuries by 2030
  - · Greg SMITH Global Programme Director, iRAP

# **Posters for National Reports**

09:30-13:00 Terrace 2B. 2<sup>nd</sup> floor

#### Lunch

13:00-14:30

# **Closing ceremony**

Friday, October 6, 14:30–16:30 Room: Congress Hall, 1st, 2nd & 4th floor

The closing ceremony will include a summary of the highlights of the Congress and a presentation of the 2024–2027 Strategic Plan that will guide PIARC activities over the next four years.

During the official handover, the host countries of the next PIARC Congress will invite delegates to join.

The closing ceremony will take place as follows:

- · Artistic cultural performance from host country
- · Highlights of the Congress, by Czech General Rapporteur
- · Technical conclusions of the Congress, by Patrick Malléjacq, Secretary General of PIARC
- · Signing of the Memorandum for the XVIIth World Winter Road Congress (Chambéry, 2026)
- Congress awards (best session, best presentation, best national report), by Miguel Caso Flórez,
   PIARC Technical Director
- Excellence in Promoting Gender inclusion and Diversity Award, by Emanuela Stocchi, Chair of the PIARC Gender inclusion and Diversity team
- $\cdot$  Invitation to upcoming PIARC Congresses, by Robin Sébille, PIARC Deputy Secretary General
- · Invitation to the XVIIth World Winter Road Congress (Chambéry, 2026)
- · Invitation to the XXVIIIth World Road Congress (2027)
- · Invitation by IRF to the IRF's World Congress (Istanbul, 2024)
- · Closing speech by Nazir Alli, President of PIARC
- · Closing by Petr Mondschein, Chair of the Czech Road Society
- · Closing by Deputy Minister Bernard and Deputy Mayor of Prague Hřib

