Policy Recommendation Concerning the Use of Artificial Intelligence by Transport Authorities[1]

AI systems are transforming many industries, and transport is no exception. As technology continues to advance, the integration of AI systems into the transport industry is, on the one hand, expected to revolutionise the way we work to potentially make travel safer, more efficient, and more sustainable for our collective future, thereby contributing to better outcomes for all. On the other hand, like any innovation, AI systems may also present significant challenges, including, but not limited to, data security, accuracy, and privacy. For instance, the number of malicious cyberattacks has grown considerably and could result in major impacts for both freight and passenger movements. It could also end up negatively impacting safety safety. Moreover, the adoption of AI technologies varies significantly across industries and geographical regions.

AI and other digital technologies have the potential to generate great benefits, yet use of AI tools also carries potential downsides, requiring careful monitoring and management. In the transport sector and beyond, public authorities play a crucial role in shaping policies, governing AI technologies, and ensuring their responsible and ethical deployment respectful of established rights. Their oversight helps guide AI development and use toward societal welfare, balancing innovation with accountability. Public authorities should consider governance frameworks for AI systems where necessary, removing unnecessary barriers to their uptake and adopting these tools to effectively fulfil their policy objectives. To govern AI effectively and leverage its potential, it is vital for transport authorities to develop a deep understanding of how AI systems make decisions and generate insights, or risk ineffective oversight and misuse.

AI systems may operate in ways that lack transparency, as complex relationships between data inputs and system outputs are often difficult to describe in a simple or interpretable manner. Nonetheless, transport authorities can promote the design and deployment of interpretable, auditable, reliable and human-centred AI systems and techniques to improve reliability and trust.

AI systems enhance efficiency in data processing and data-informed decision-making but may also present significant risks. These harms may be consequential to the physical integrity of systems, impact human rights and principles, compromise other systems, or endanger human life. Adopting effective AI risk assessment methodologies could help governments remove unreasonable implementation barriers and understand when and where potential hazards are likely to result in harm or where the severity of catastrophic harms warrants attention even when the probability of their occurrence is low.

Transport authorities can use AI systems in support of three top-level ministry-focused outcomes:

[1]At this stage in the development of AI applications in transport and given the diverse structures of transport governance across member countries and the high-level nature of the recommendations, "Transport Authorities" here refers to those bodies with oversight responsibility for Transport systems' operations and governance. There may be more than one body depending on the country.

- AI systems to assist policymaking may be used to support planning (e.g. understanding where flows are occurring on networks), to forecast or create more relevant scenarios for future planning purposes (e.g. developing models and plausible projections) or to carry out infrastructure appraisal.

- Transport authorities may use AI systems to improve or streamline their own operations – e.g. for targeted maintenance, traffic oversight and control, enforcement, procurement processing and staff management – or to help them dynamically respond to changing conditions, disruptions and emergencies.

- Finally, authorities may also use AI systems to improve service delivery to citizens and other stakeholders (e.g. for licence application and delivery, approval processing, fee payment or information provision).

To ensure safe and responsible use of AI technologies, increase trust and improve outcomes in the use of AI systems by transport authorities, authorities would benefit from developing comprehensive internal AI policy frameworks, be open and transparent with stakeholders about those policies, and ensure users are aware of the recourse options that are available to them. This includes ensuring that transparency, accountability, ethical considerations and a human rights-based approach are integrated into the design, development, deployment, and management of AI systems.

Transport authorities can take four immediate actions which can help them understand how they may use AI systems to carry out the mandates they are entrusted to deliver:

1. Oversee and steward AI system deployment and use – assign effective responsibility for monitoring, tracking, guiding and ensuring strategic deployment of AI use cases within transport ministries, their dependent agencies and other jurisdictional authorities.

2. Increase awareness – Establish the parameters for and undertake and maintain an inventory of AI use cases and procurement of AI technologies by relevant transport bodies.

3. Assess and balance risk and benefit – undertake risk assessment for use of AI systems by transport ministries, dependent agencies other jurisdictional authorities, including establishing the range of potential outcomes, and developing mitigations to recognise and prevent or correct undesired outcomes in the system. Identify opportunities to innovate in support of better outcomes.

4. Improve AI literacy and skills – Train and recruit to fill any potential AI skills gaps identified within the transport authorities.

Broad collaboration is important for the responsible development and use of AI systems, and those undertaking these four actions will benefit from collaboration with other transport authorities, other public sector authorities engaged in similar initiatives, research institutions, and businesses and experts in areas such as privacy, security, human rights, innovation, and transport. This collaboration helps to foster innovation, drive economic prosperity, and address societal challenges, and ensures the systems are developed with respect for human rights, privacy, security, and safety. Multidisciplinary collaboration can drive the advancement of AI technology while ensuring its development and use is responsible, beneficial and ethical. Taking a multidisciplinary approach also allows AI systems to address complex challenges, improve decision-making processes, and enhance the quality of life for people.

Recommendations on these actions transport authorities can take that will help them understand how they use AI technologies to deliver on their mandates are further summarised below:

Oversee and steward alignment – designate responsibility for overseeing and stewarding AI deployment and use

The use of AI systems by transport authorities is cross-cutting, multifunctional and involves multiple types of domains and use cases. In order to ensure AI systems are compliant with legal requirements, policy frameworks and shared objectives, transport authorities may require adapted institutional arrangements to steward strategic deployment of

AI tools. Establishing an AI use governance framework and designating effective responsibility within transport authorities to carry it out will help ensure a consistent approach for AI development, procurement, use and maintenance.

- Clearly define and establish effective responsibility and the scope of the oversight and stewardship of AI systems within the transport authority.
- Determine where and at what level to house these functions.
- Use existing, or create new, institutional governance processes and engagement mechanisms for this entity within the transport authority and across other authorities.
- Engage funding to carry out the functions of the entity.
- Establish an AI expert network to share best practices, lessons learned etc.

Increase Awareness – Create an inventory of use of AI technologies by transport authorities

Transport authorities use AI technologies across a wide range of corporate functions, yet many authorities do not have a centralised database of AI technologies and use cases. Increased self-awareness of how and by whom AI technologies are used can improve oversight, risk assessment and, ultimately, trust in government use of AI. Oversight for the inventory rests with the coordinating and stewarding entities identified in (1) above. This inventory could include all AI systems in use by the transport authority, including those developed in-house, and those procured by the transport authority. An inventory of use-cases can also contribute towards greater transparency and awareness-raising among the general public as to the use of AI technologies by transport authorities, and can also foster open innovation by promoting cooperation and collaboration between public authorities and the private sector in the search for innovative AI solutions.

- Establish the scope and methodology of the inventory exercise and consider sharing this within the AI expert network described above.
- Establish the mechanisms, quality control and timing of the inventory exercise -- and a process to keep it up to date.
- Develop cooperation and coordination among different AI uses and users where relevant, on the basis of the inventory.

Assess and balance risk and benefit – Implement risk management for use of AI

Before deploying each AI system (whether procured or developed in-house), transport authorities should implement risk assessment according to established and robust risk assessment protocols. The risk assessment will inform mitigation measures, and other actions that need to be taken to ensure the system is used in line with relevant laws, policies, and frameworks. It will also help to identify any risks to responsible and ethical AI use and can help transport authorities ensure AI systems do not contribute to biases or cause harm to human rights, fundamental freedoms, security, safety, or privacy of all people. Risk assessments should include the provenance of the data used to train AI systems, how the outputs are used and how employees interact with the system to ensure that they do not overly rely on outputs. Publishing the results of a robust risk assessment and risk management plan will help to enhance trust and transparency in transport authority use of AI technologies and help deliver better outcomes for citizens.

- Determine the appropriate risk assessment approach for use by transport authorities.
- Establish a process to decide when to undertake periodic risk assessments internally or via a third party before, during, and after an AI system is deployed and throughout the system's life cycle.

- Develop a strategy and actionable steps to address high-risk use cases, including designation of an appropriate oversight entity which may be (1) above or another.
- Create transparency mechanisms to report on the results of the risk assessment process.

Improve AI literacy and skills – Target training and recruitment to fill AI skills gaps

Identifying appropriate uses of AI systems and updating the governance of those systems requires that transport authorities assess whether and which related skills gaps exist in their workforces and address them. Up-skilling or adoption of AI skills within transport authorities is a key enabler for enhanced, responsible use of AI systems by transport authorities and can contribute to better governance.

i. Identify the set of skills and profiles sufficient to (a) carry out 1-3 above and (b) to monitor and oversee, where appropriate, use of AI systems within the transport sector;

ii. Identify the set of skills and profiles that the transport authority currently has;

iii. Identify gaps between (i) and (ii) above;

iv. Establish training and knowledge-building strategies to address the gaps in (iii) above;

v. Develop recruiting strategies to fill the gaps identified in (iii) above;

vi. Identify if there are third-party entities that could help fill the gap identified in (iii) above – and identify the necessary in-house skills to manage those relationships if so;

vii. Explore new ways to attract and retain skilled staff for these profiles.

The Council of Ministers of Transport of the International Transport Forum adopted this *Policy Recommendation Concerning the Use of Artificial Intelligence By Transport Authorities* at its meeting on 22 May 2025 in Leipzig during the ITF Summit on "Transport Resilience to Global Shocks".