International Transport Forum

Research and Innovation Challenges
for mobility based on Connected and Automated Vehicles

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Secretary-General

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OECD

On Road Safety

- **Relation of AV to infrastructure and weather/environment**
  - Initial focus of industry

- **Relation of AV to traffic**
  - New types of human mistakes
  - Pilot projects in shared infrastructure

- **Safety level threshold necessary for regulatory approval**
  - (Much) better average than human not enough, must never fail where Human would not fail
  - Remote driving cabin (1 to many) possibly useful in transition → Research needed on technical feasibility and real safety gains

Strong interest from professional transport services

- **Especially in long distance services (trucks and coaches)**
  - Cost reduction, daily operating hours

- **Research for long-distance services:**
  - European wide operating standards
  - Standards also on data for authorities
  - (Possibly) Regulatory instruments to ensure fair availability of automated vehicles in markets

- **On urban passenger services:**
  - On Equity: Regulatory instruments to ensure adequate service to thin markets
  - On Ageing Societies: In which cases and how to provide special assistance?

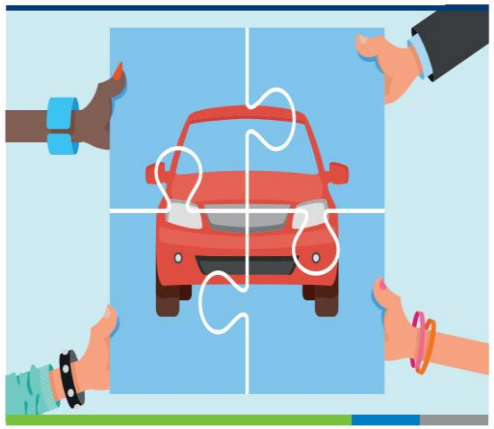
Significant impacts on markets and labour

- **Rules of access to the profession and to markets**
  - And ways of enforcing rules (even during transition)
  - ITF to publish a report on **"Data-led Enforcement of Road Haulage"** at out Summit next May, in the framework of our Corporate Partnership Board
- **Heavy job losses for truck drivers**
  - In the EU alone more than 1.5 Million
  - In the first years, automation seen as a good remedy for current difficulty of recruiting, but then the wave grows fast
  - ITF to publish a report on **"Managing Transition to Driverless Trucks"** at out Summit next May, in partnership with IRU, ACES and ITwF
- **Other significant impacts requiring research and monitoring**
  - On vehicle commercialisation
  - On haulier sector

Shared Urban Mobility solutions

- **Digital connectivity makes efficient demand-responsive solutions possible**
  - Fixed network, scheduled public transport only interesting when offering high frequency and high capacity (mass transit)
  - Backbone, complemented by the **new demand-responsive public transport paradigm**
    - No transfers
    - Shared Taxis for door-to-door service
    - Taxi-buses for street corner to street corner service, 8 or 16 pax.
    - Feeders into mass-transit (small buses, mostly for suburban rail)

- ITF published a study on "Shared Mobility: Innovation for Liveable Cities" last May
  - Very promising results based on micro-simulation for the city of Lisbon
  - Replication and transition studies underway in other cities



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Inducing change of citizens' behaviour

- **Single occupant car travel (owned or shared) with possibly very negative impacts on :**
  - Congestion
  - Urban sprawl
- **Risks aggravated if operating cost is very low (electric propulsion)**
  - Time when being driven could become only private dissuasion element (and even be under-estimated)
- **Research needed for good local calibration of apparently necessary solutions**
  - Attractive ride-sharing systems
  - Variable road pricing to always ensure good level of service

Unexpected future uses of these vehicles

- **Uses (and business models) that nobody is able to imagine today**
  - Not only an innovation challenge (for the entrepreneurs) but also a regulatory challenge in the domain of public service in urban mobility.
- **Research on how to transform Regulation towards:**
  - more flexible and experimental approach to quickly address these uses as they arise
  - higher abstraction from the technical aspects of supply,
  - focusing instead on desired outcomes for the users and undesired outcomes for society

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Thank you

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