



52nd ASECAP DAYS

Challenges of Future
Mobility | The Role of Road
Infrastructure

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Asociación de Empresas Constructoras
y Concesionarias de Infraestructuras



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Digitalization of Infrastructure along the Italian Highways

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Autostrade per l'Italia

Road transport: where are we?

4th

Country in Europe for mileage extension after Spain, Germany and France (3 thousand km network out of ~7 thousand km of motorways in Italy).

1st

Per km of bridges equal to 14% on km extension vs a European average 2.6% (4.140 bridges and viaducts, of which 2.062 with L>10m).

1st

By number of tunnels, owning 50% (~500km) compared to the European countries examined.

1st

By age: 85% of the network built by the '70s, while other nations reach this situation not before the '90s 2000s.

1st

Country by motorway traffic vs average* of other EU countries:

- 40k ADTV** in Italy vs 30k in France and 20k in Spain
- 10k ADTV goods in Italy vs 5k in France and 1k in

~60%÷70% of the total traffic (vehicles*km) on 51% of the toll network (ASPI Group)

Saturation is already close or over 100%

Inaugurazione della tratta Bologna-Firenze 1960



Traffic trends



In the EU transport system, mobility is expected to grow, with a relative share for road transport in 2050 still above 70%.



Road and motorway infrastructure in Italy serves:

- ~90% of passenger traffic
- ~85% of freight transport

ROAD TRANSPORT: LEADING MODE IN THE NEXT YEARS



DIGITIALIZATION OF THE NETWORK

*The average was calculated by weighting the volumes in relation to the km of network in each country. Germany was excluded from the calculation as light vehicles are not included

**Annual Average Daily Theoretical Vehicles (ASECAP 2021)

Mobility, Safety, Decarbonization

Digitization and network technology innovation for a connected, smart and green infrastructure



Increased availability of transport network.



Reduction of traffic disruptions (congestions and queues).



Increased safety of users and workers (Vision Zero).



Improved carbon footprint.



Increased service life (new construction & modernization).



Information and assistance to users (passengers and freight).



✓ Physical infrastructure

- Deep **regeneration of highway network**, due to ageing and heavy traffic (Fitfor50).
- **Optimization of operations** related to maintenance, with the highest safety levels, while reducing personnel risks and their exposure.
- Improved knowledge on assets conditions (ARGO, digital twin, drones).
- Focused economic efforts.



✓ Digital infrastructure

- V2X.
- Support to autonomous driving.
- Automatic incident detection.
- Dynamic lanes.
- Improved infrastructure's management.
- Free flow tolling.
- New services to users.



✓ Services for a new mobility

- Service & parking areas.
- High Power Charging Station.
- New types of fuels.
- Photovoltaic installations.

The speed of introduction of such solutions and the expected benefits will depend on the ability of the motorways to adapt and favor the transition.



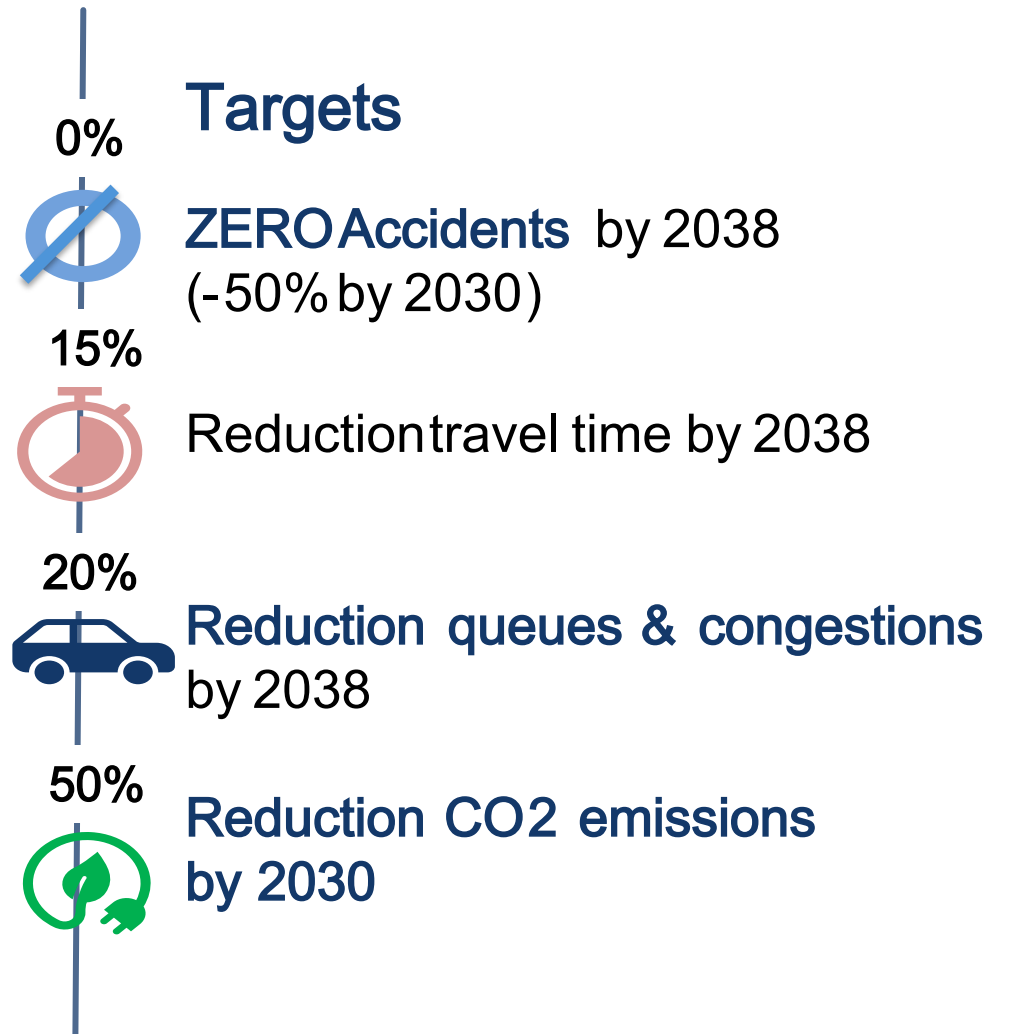
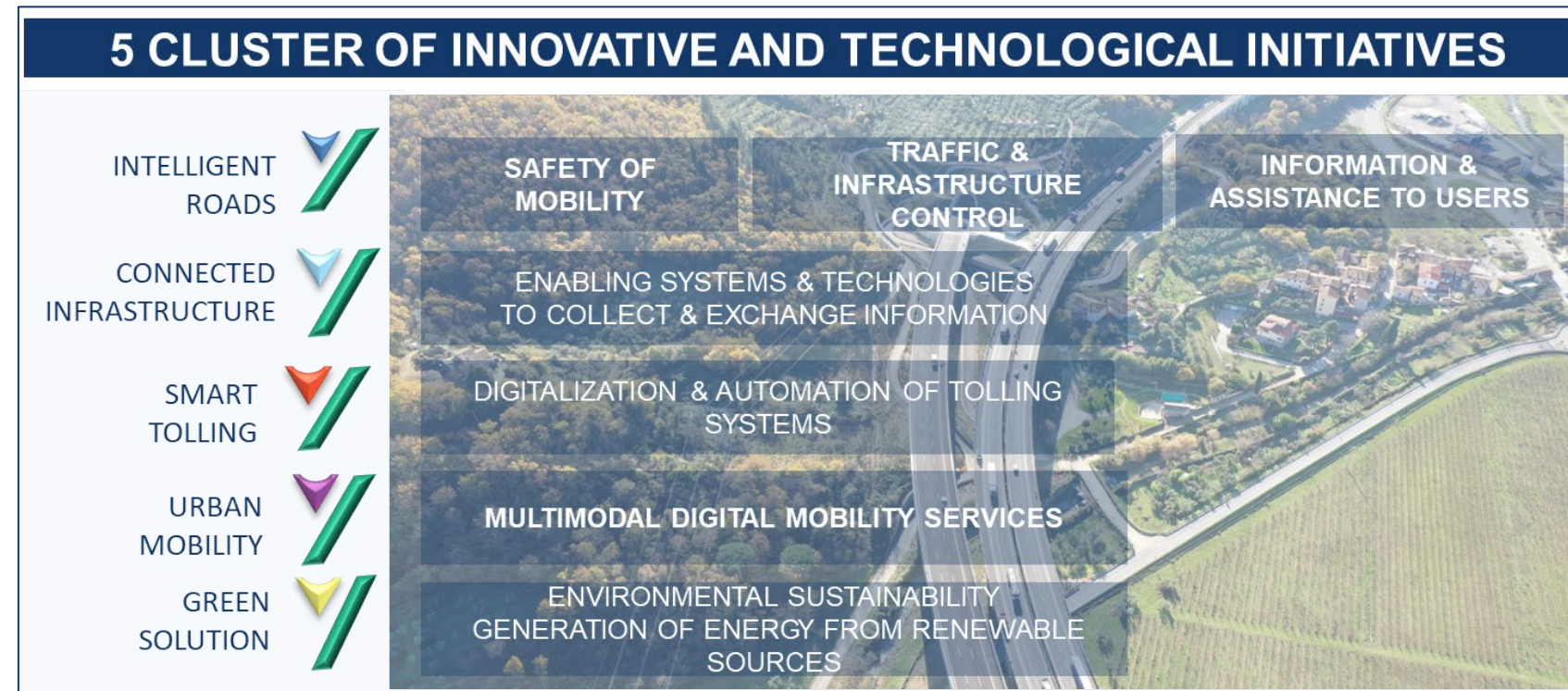
Umbrella Mercury

Mercuryumbrella



2020 - 2038

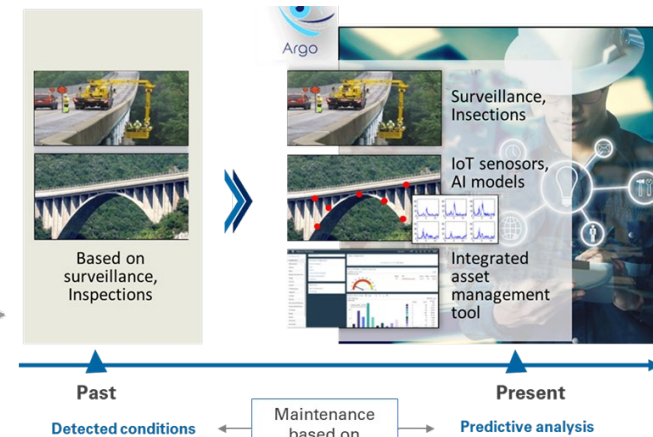
- Budget 1.500 M€
- 100 Projects



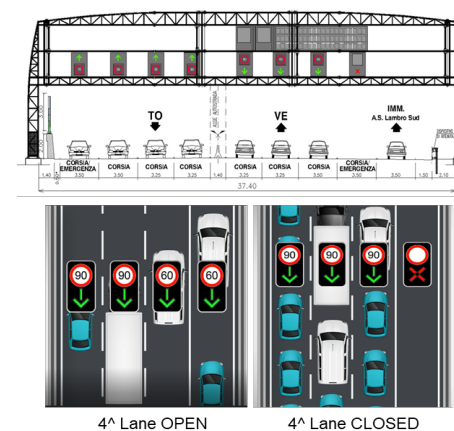
SMART MOBILITY



PROJECT ARGO



DYNAMIC LANE

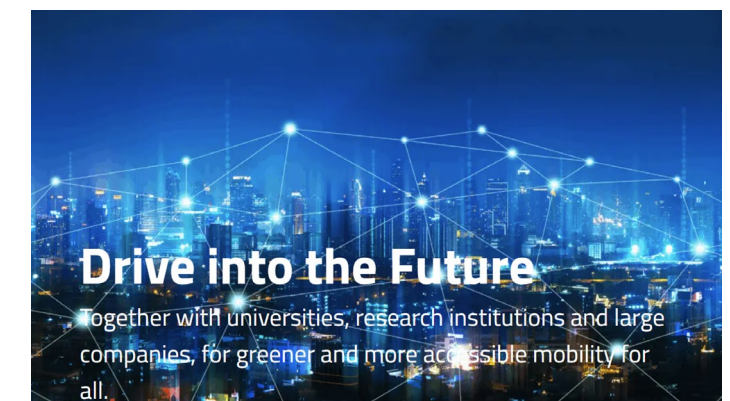


NAVIGARD



MOST SUSTAINABLE MOBILITY

CENTRO NAZIONALE PER LA MOBILITÀ SOSTENIBILE

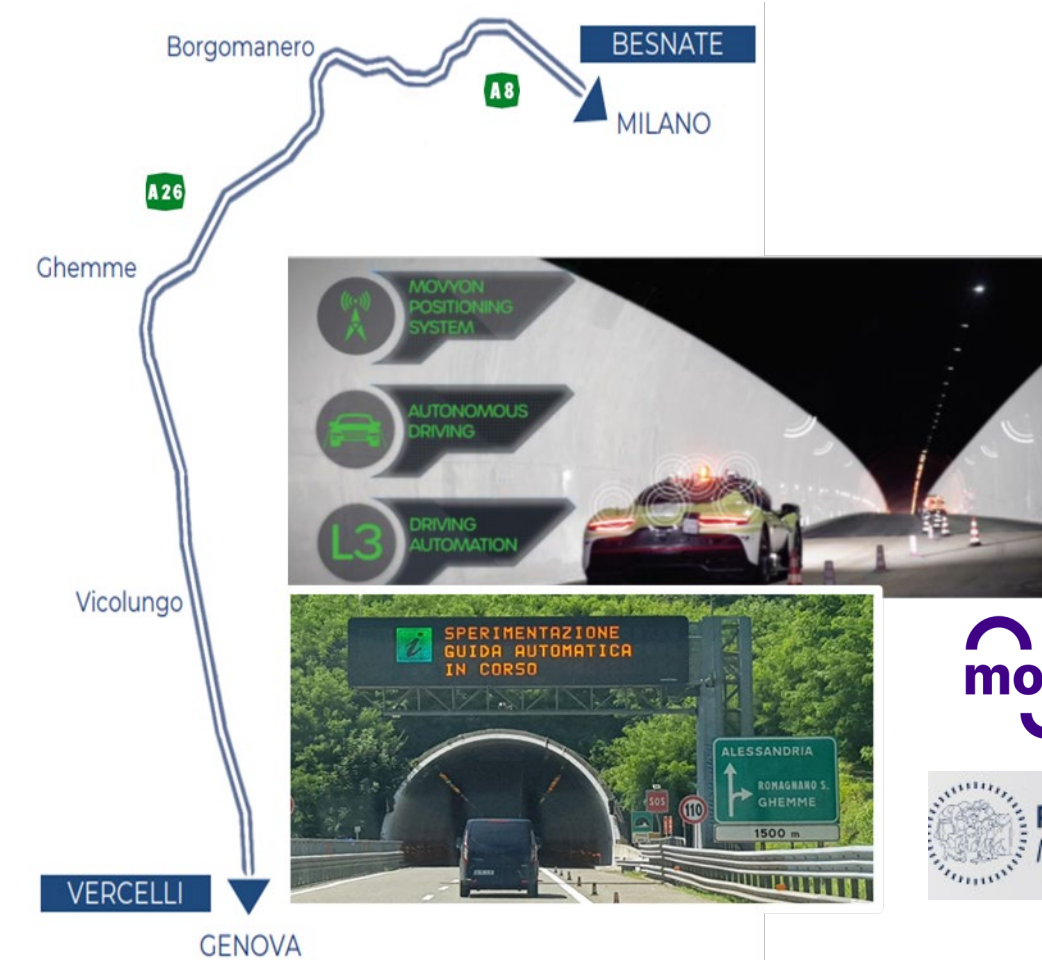


[https:// www.centronazionalemost.it](https://www.centronazionalemost.it)

Sustainable mobility

Within Mercury program, the project MOST - Centre for the Sustainable Mobility, financed under the European Recovery Plan, is specifically meant to favor the digitization of infrastructures by enabling systems and technologies to collect and exchange information and C-IIS-I2X services to communicate with CCAM.

The Company is actually carrying out the first steps to obtain the so called “Certification Smart Road” in compliance with the Italian “Smart Road Decree” (DM70/2018-under revision), implementing the EU Directive 2010/40 and 2023/2661 on ITS.



A8/A26: first 120 km of highway in Italy authorized for automated driving tests



Tangenziale di Napoli

- Peri-urban toll highway
- 20.2 km
- 42 bridges & viaducts
- 20 tunnels
- 250 k vehicles/ day



Technological equipment & solutions

1. Traffic survey and runoff conditions
2. Hydrometeorological monitoring
3. ITS-services
4. Testing of additional innovative solutions

Steps

1. Gap analysis
2. Plan for the Compliance
3. Adoption of a plan of interventions
4. Certification.

Road transport: where to?

EU competitiveness

High-quality road infrastructure is a key factor in the competitiveness of the EU since it is the first mean used for mobility of goods and people and for the growth of a country, and it's far to be substitute with.

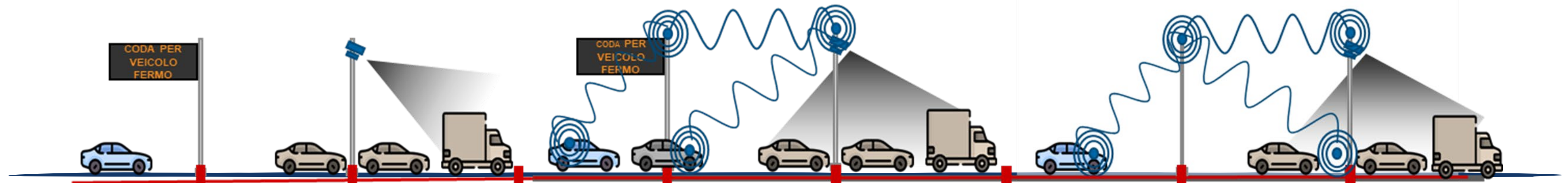
- Investment in the modernization of existing facilities.
- Interconnection and completion of the networks to create a sustainable, low-emission infrastructure.

Mobility is a public service

New services and mobility solutions for management of demand, data and information, in urban and extra-urban areas (highways included) to guarantee the same level of **availability and access across European countries**:

- Investing in transport infrastructure to improve connectivity across Europe.
- investing in transport infrastructure to upgrade toll road systems and enable flexible pricing as a way to increase sustainable behavior.
- Aligning standards across all countries for all types of transport to facilitate mobility and competition.
- Incentivizing the adoption of green mobility solutions for a sustainable transport sector.
- Encouraging sustainable urban mobility as well as smart cities solutions.

MODERNIZATION CANNOT BE ACHIEVED WITHOUT INVESTING IN THE DIGITALIZATION OF ROADS AND TRANSPORT



Enablers

New technologies and solutions emerge and develop

Measures should be supported, as far as it concerns the digitalization of infrastructures, to enable the implementation of systems and technologies, to collect and exchange information, to speed up green energy transport, to offer new digital mobility services

- C-ITS - V2V, V2X, I2P Cooperative Communication Systems.
- Connected mobility.
- Advanced data processing by using AI.
- Solution for Operational Traffic Control Centers.
- Energy production, storage and distribution (i.e. photovoltaic).
- IoT solutions for Structural Health Monitoring.
- Aerial Space Management for traffic and infrastructure monitoring.
- Industrialization of OT Cybersecurity for critical infrastructure protection.

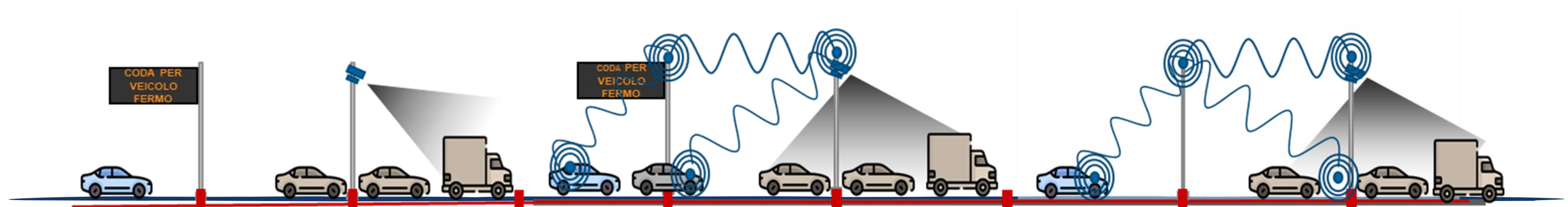
Transition to a new mobility - smart, seamless, safe, efficient and connected

Review of the current regulatory framework to ensure the inclusion of investments in digitization and technological modernization and/or to define specific economic and financial coverage to support and encourage this technological revolution in mobility.

Digital Skills

The massive digitalization of the transport sector to keep up with mobility trends and needs requires investments in ICT, software solutions and skills to remain competitive.

Investments are needed to support the education and training of new professional figures in the ICT field.



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MADRID 2025

Thank You

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