Framing the issue

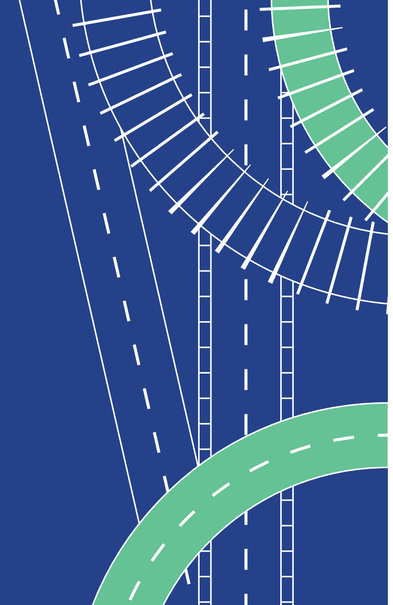
Europe has one of the largest transport infrastructure networks in the world:

- **136,700 km of roads**
- **234,000 km of railways**

On average, each year to maintain the European TI network are used:

- **600 million tonnes of aggregates**
- **44 million tonnes of cement**
- **200 million tonnes of asphalt**
- **6 million tonnes of bitumen**

The transport sector is responsible of **1/3 of the final energy consumed and the CO_2** generated in the EU.



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The LIAISON consortium

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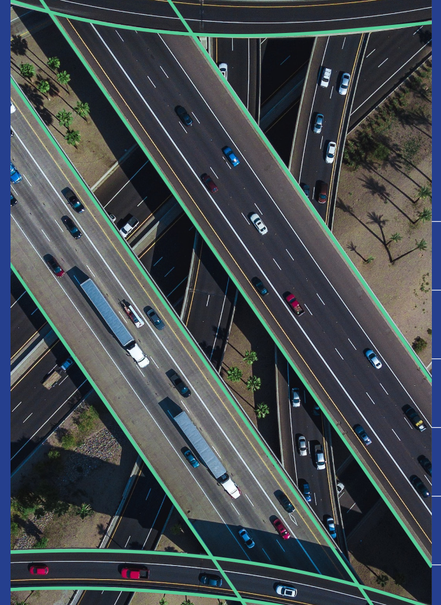
LIAISON

Making transport infrastructure climate-neutral, sustainable and circular

The project

The LIAISON project addresses emissions across the **entire life cycle of transport infrastructure** (TI), including construction, maintenance, operation, and decommissioning.

Developing innovative technical solutions, LIAISON includes a governance framework to promote the adoption of **sustainable and circular TI lifespan**.



The solutions

Dynamic Multi-Infrastructure Governance Framework (DMIGF) and digital toolbox

Developing automatic data entering and integration with existing tools

Innovative bioasphalt
Exploring the use of bio-binder in different type of asphalt mixures
Demo site: Spain

Sustainable smart beams
Proposing an optimized reinforced cement beam that saves up to 40% of cement
Demo site: Poland

Smart geopolymer for rigid road pavements
Developing an improved formulation of geopolymer
Demo site: Poland

Weight-in-motion system based on optical fibre sensors
Monitoring traffic to reduce the number of overload vehicles
Demo site: Poland

Automated damage detection for pavement
Using low-cost and high data collection speed systems
Demo site: Spain

Adaptive control system for tunnels ventilation
Optimizing energy consumption
Demo site: Spain

Photovoltaic Guardrails
Combining independent and existing technical solutions
Demo site: Italy

Intelligent Tunnel Lighting System
Allowing luminance levels to be dimmed in real time
Demo site: Spain

Innovative railway track ballast
Mixing reused material with rubber chips to improve stress distribution
Demo site: Slovenia

Thermoeletric concrete
Adding fillers with better thermoelectric materials, such as recovered graphite
Demo site: Slovenia