Road Infrastructure Safety for Vulnerable Road Users in the EU

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Artificial Intelligence for Road Safety and Mobility Workshop

8th UN Global Road Safety Week

Athens, 15 May 2025

DECADE OF ACTION FOR ROAD SAFETY 2021 - 2030

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Road Infrastructure Safety for VRUs in the EU

- Guidance on the design of 'forgiving roadsides', 'self-explaining and self-enforcing roads', as well as on **quality requirements** of road infrastructure for vulnerable road users

- **Project Partners**
  - National Technical University of Athens (NTUA)
  - Transportes Inovacao e Sistemas (TIS)
  - PwC EU Services (PwC)
  - Rupprech Consult

- **Duration of the project**

  24 months (April 2024 – April 2026)

- For the **European Commission** - Directorate General for Mobility and Transport

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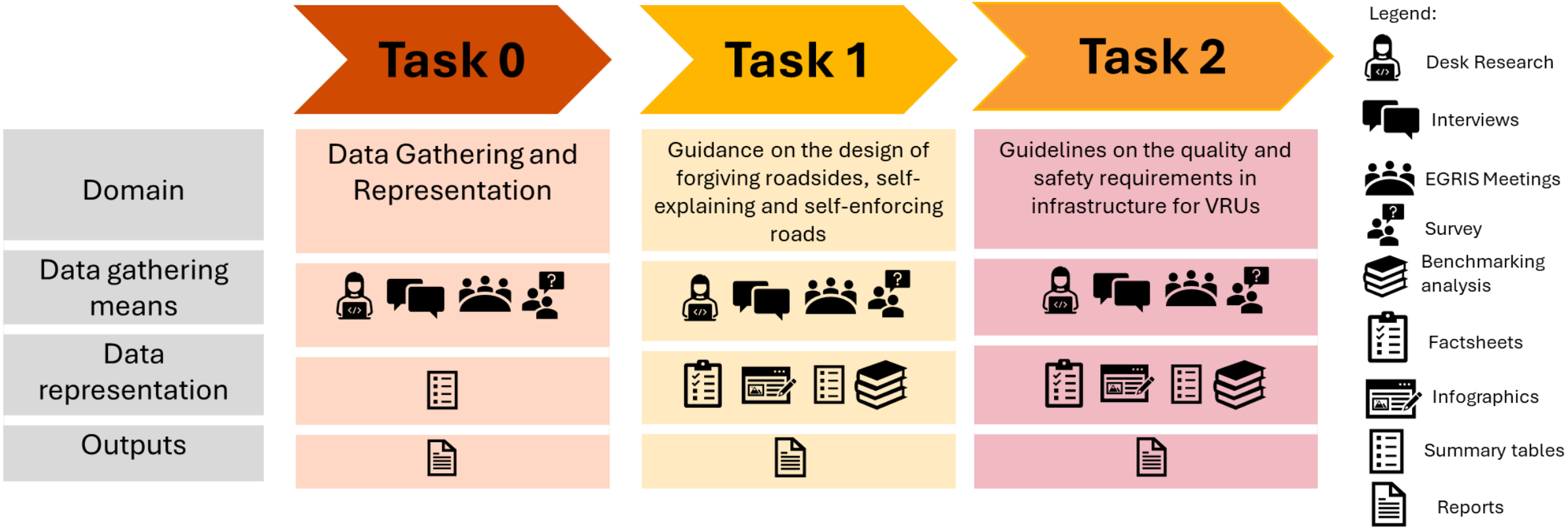
Background

- EU Directive 2019/1936/EC revised the procedures of EU DIR 2008/96 on Road Infrastructure Safety Management (RISM) and introduced the requirement for design provisions forgiving roadsides, self-explaining and self-enforcing roads, and infrastructure for VRUs.
- In a forgiving roadside, the roadside environment should not contain dangerous elements that will seriously injure or kill vehicle occupants that have unplanned trajectories off the carriageway.
- The self-explaining road concept advocates a road and traffic environment that elicits safe driving behaviour simply by its design.
- VRUs suffer the most severe consequences in the event of a collision, as they are unprotected against the speed and mass of the crash opponent.

Objectives

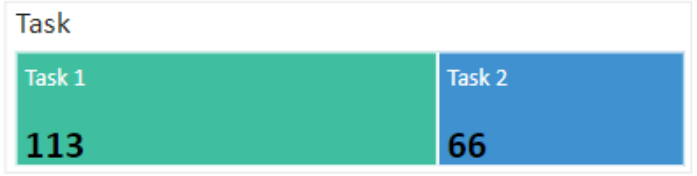
- Develop guidance for the design of forgiving roadsides, self-explaining and self-enforcing roads and infrastructure for VRUs
- Identify safety and quality minimum requirements for VRU infrastructure
- Develop a set of criteria for assessing existing infrastructure and investments on new road infrastructure
- Incorporate VRU requirements in the audit process for all stages of road designs
- Consider the needs of Member States and stakeholders and achieve consensus

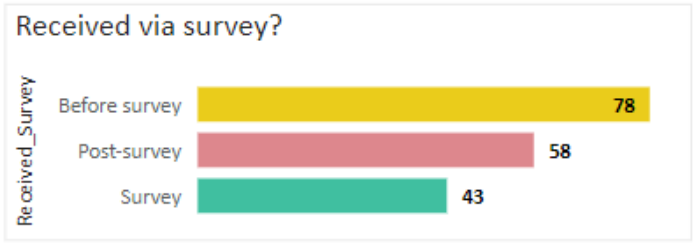
Methodological Approach

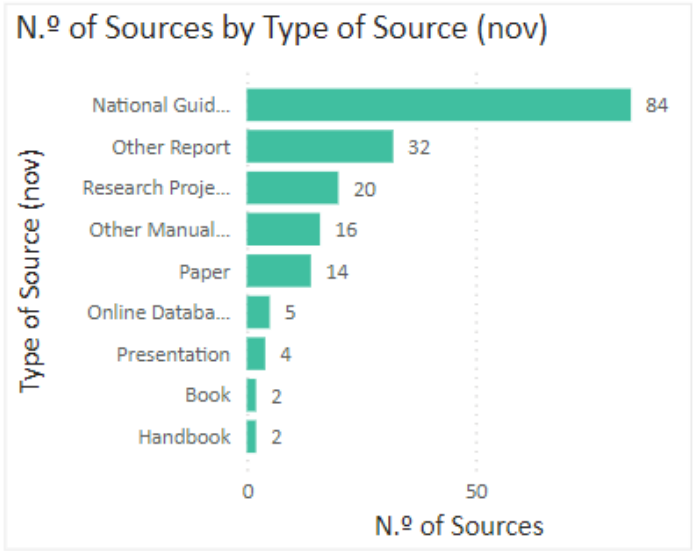


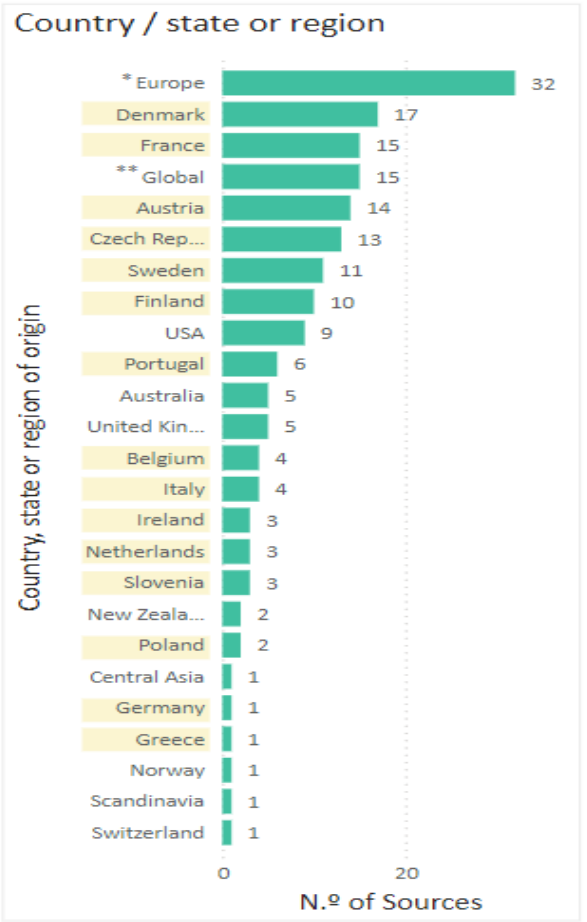
Desk Research

Overview of sources (guidelines, reports, position papers, etc.)





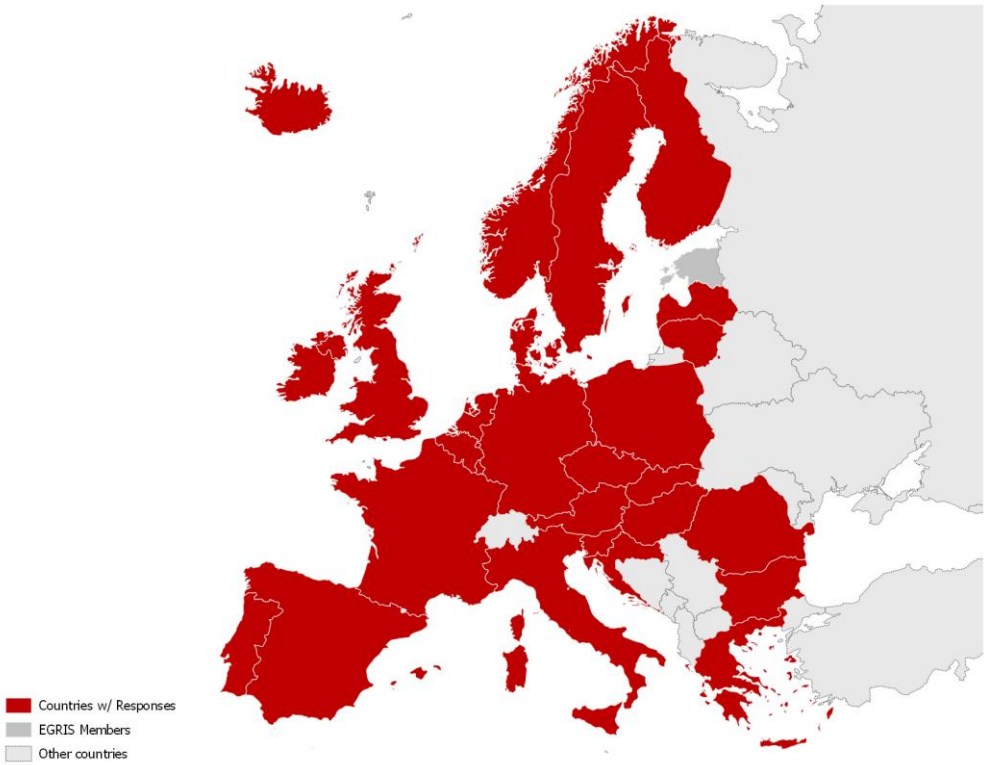




*Europe: published by an institution with pan-European scope
**Global: published by an institution with global scope

Consultation

- Online Survey



Countries	Total
Austria	4
Belgium	16
Bulgaria	2
Croatia	1
Cyprus	0
Czechia	1
Denmark	2
Estonia	0
Finland	2
France	5
Germany	3
Greece	3
Global	1
Hungary	3
Ireland	1
Italy	4
Latvia	2
Lithuania	1
Luxembourg	1
Malta	0
Netherlands	4
Poland	1
Portugal	5
Romania	1
Slovakia	1
Slovenia	1
Spain	2
Sweden	4
UK	1
Iceland	2
Norway	1
Total	**75**

- Targeted Interviews (25 experts)

- Meetings of the EU Expert Group on Road Infrastructure Safety (EGRIS)
  - Sub-group 3 meetings
  - Plenary meetings
  - Workshop with breakout sessions (per Task)

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- The project considers quality and safety of infrastructure for all VRU categories, namely:
  - Pedestrians, further divided into fully able pedestrians, elderly, children, mobility impaired, visually impaired, and pedestrians with other disabilities.
  - Cyclists (including e-bikes up to 25km/h)
  - Powered-Two Wheelers
  - Users of Personal Mobility Devices (PMD)
- Improvement of VRU safety in city streets across the EU
- Improvement of VRU infrastructure quality, thus promoting clean and active transportation

Scientific and Social Impact

- Improve interest and awareness amongst national road authorities and stakeholders on forgiving roadsides, self-explaining and self-enforcing roads, and requirements for VRU infrastructure.
- Improved consideration of VRU infrastructure in the Road Safety Audit Process, resulting in safer roads for all
- Better use of EU funding towards safer and higher quality road infrastructure

Future Challenges

- Implementation of EC recommendations from EU Member States and internationally
- Balancing needs of different road users
- Addressing evidence gaps on cost-effectiveness of measures, to enable reliable, data-based decision making
- Improving cost-effectiveness of measures

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