A Methodology for Network-wide Road Assessment - NetSafety

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Together with:
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The NetSafety project

- **Study on a Methodology for Network-wide Road Safety Assessment**

- **Partners**
  - National Technical University of Athens (NTUA), Greece
  - University of Zagreb Faculty of Transport and Traffic Sciences (FPZ), Croatia
  - FRED Engineering s.r.l. (FRED), Italy

- **Duration**
  36 months (September 2020 – September 2023)

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

- EU Directive 2019/1936/EC revised the procedures of EU DIR 2008/96 on Road Infrastructure Safety Management (RISM) and extended the scope.

- The revised directive introduces the procedure of the **Network-wide Road Safety Assessment**, based on:
  - primarily, a visual examination, either on site or by electronic means, of the design characteristics of the road (in-built safety); and
  - an analysis of sections of the road network which have been in operation for more than three years and upon which many serious accidents in proportion to the traffic flow have occurred.
Study Concept & Objective

In accordance to the provisions of the Directive 2019/1936/EC, this project aims to develop a new, integrated methodology for a common network-wide road safety assessment & common safety rating system for classification of the existing road network in categories.

The main objectives are:

➢ The combination of “in-built” safety assessment and accident analysis methods by utilizing existing and/or easily collected datasets.

➢ The achievement of a consensus regarding this methodology between experts, road safety stakeholders and national road authority delegates, so that Member States can embrace it and support its implementation.
NetSafety Methodology (1/2)

- **Review** of existing methodologies and practices that assess road safety:
  - proactively (i.e., in-built safety assessment)
  - reactively (i.e., analysis of accident records).

- Understand **data availability** across the EU Member States, as road and accident data availability may affect the proposed methodology.

- Development of a **methodology** for assessing the in-built safety of roads via the identification of appropriate **parameters** and **relationships** that link the parameters to a selected safety outcome.

- Development of a **methodology** for accident occurrence analysis.
NetSafety Methodology (2/2)

➢ **Integrate** the two methodologies in a common framework for the **network-wide** road safety assessment.

➢ **Evaluate** the **applicability** of the proposed (integrated) methodology in a specific environment per Member State and provide Member State authorities **guidelines** on how to **implement** it.

➢ **Maintain active** **communication** and **consultation** with:
  ▪ relevant **stakeholders** to inform them and receive their **feedback** for the proposed methodology,
  ▪ EU Member States to **engage** them in adopting and implementing the methodology.
NWA Methodological Concept

- The integrated Network-Wide Assessment methodology will combine re-active (accident based) and pro-active (in-built safety assessment) approaches.

- A modular approach is proposed:
  - **Minimum**: (low cost and level of detail)
    - NWA-b (basic)
    - NWA-s (statistical)
  - **Optional**: (high cost and level of detail)
    - NWA-a (advanced)
    - NWA-o (other - iRAP)
Reactive and proactive safety assessment methods

- **Reactive Assessment**
  - Identification of high-risk sites based on accident occurrence

- **Proactive Assessment**
  - Network-wide, "in-built" safety assessment, related to road infrastructure problems

1. **Road Safety Inspection**
   - Problem identification in identified high-risk sites

2. **Periodic road safety inspection**
   - Maintenance-related

3. **Intervention selection**
   - Regular maintenance

4. **Interventions / Risk assessment**

- Accidents may not be the best proxy to assess infrastructure safety (because of local human factors, behaviour, enforcement, vehicle fleet characteristics, etc.).
- Not applicable for:
  - low accident frequency
  - new roads
- Major road network improvements generally not examined.
Scientific and Social Impact

The proposed methodology will:

- **integrate proactive and reactive** safety assessment approaches to face the limitations of commonly applied accident-based assessments,

- **enable large scale road safety assessments** at network level in a cost-efficient way, thus allowing more targeted allocation of resources for detailed road safety inspections to high risk segments,

- provide a **common understanding** of the **safety level** of all major road networks across the EU Member States, and

- ultimately, will contribute towards the **reduction of road fatalities and injuries** in the European Union.
Future Challenges

- Increase **data collection**, recording and storing activities by Member States road authorities. Data availability and quality is essential for evidence-based road safety decision making and for efficient allocation of limited funds.

- Work on **automating** and **standardizing** data collection and assessment procedures, e.g., using advanced technological equipment.

- The proposed methodology will be subject to modifications in light of **automated driving** especially for those parts of the network where CAVs can operate; essentially CAVs will enhance the wider adoption of in-built safety assessment.
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