National Technical University of Athens
Road Safety Observatory

Online workshop in the framework of

6TH UN GLOBAL ROAD SAFETY WEEK
17 - 23 May 2021
Streets for Life
#Love30
DECADE OF ACTION FOR ROAD SAFETY 2021 - 2030
30 KM/H

Thursday 20 May 2021

Innovation in Road Safety Research

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

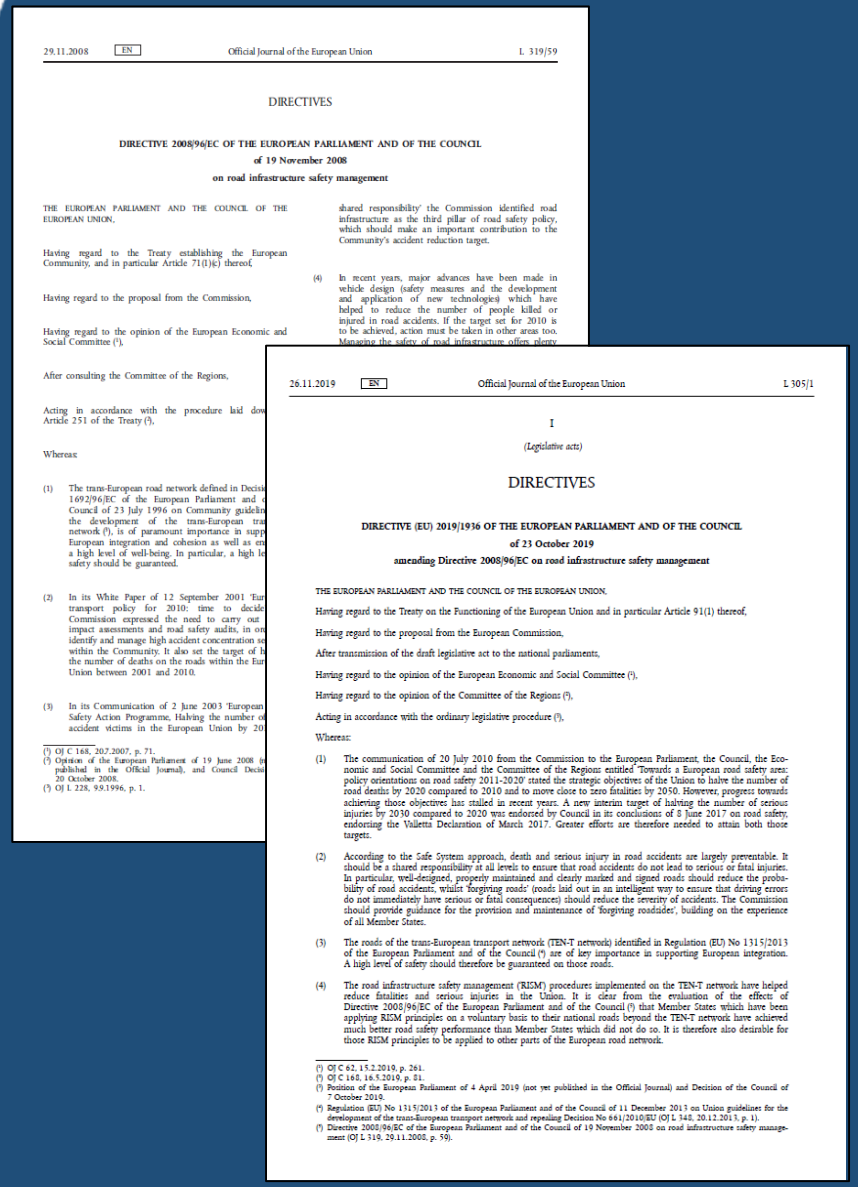
- Partners
  - National Technical University of Athens (NTUA), Greece
  - University of Zagreb Faculty of Transport and Traffic Sciences (FPZ), Croatia
  - FRED Engineering s.r.l. (FRED), Italy

- 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.



29.11.2008 EN Official Journal of the European Union L 319/59

DIRECTIVES

DIRECTIVE 2008/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 19 November 2008
on road infrastructure safety management

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 71(1)(c) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid dow Article 251 of the Treaty (2),

Whereas:

(1) The trans-European road network defined in Decisi 1692/96/EC of the European Parliament and Council of 23 July 1996 on Community guidelin the development of the trans-European tra network (3), is of paramount importance in supp European integration and cohesion as well as en a high level of well-being. In particular, a high le safety should be guaranteed.

(2) In its White Paper of 12 September 2001 'Eur transport policy for 2010: time to decide' Commission expressed the need to carry out impact assessments and road safety audits, in or identify and manage high accident concentration se within the Community. It also set the target of h the number of deaths on the roads within the Eur Union between 2001 and 2010.

(3) In its Communication of 2 June 2003 'European Safety Action Programme, Halving the number of accident victims in the European Union by 20

(1) OJ C 168, 20.7.2007, p. 71.
(2) Opinion of the European Parliament of 19 June 2008 (n published in the Official Journal), and Council Decisi 20 October 2008.
(3) OJ L 228, 9.9.1996, p. 1.

shared responsibility' the Commission identified road infrastructure as the third pillar of road safety policy, which should make an important contribution to the Community's accident reduction target.

(4) In recent years, major advances have been made in vehicle design (safety measures and the development and application of new technologies) which have helped to reduce the number of people killed or injured in road accidents. If the target set for 2010 is to be achieved, action must be taken in other areas too. Managing the safety of road infrastructure offers plenty

26.11.2019 EN Official Journal of the European Union L 305/1

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(Legislative acts)

DIRECTIVES

DIRECTIVE (EU) 2019/1936 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 October 2019
amending Directive 2008/96/EC on road infrastructure safety management

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union and in particular Article 91(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee (1),

Having regard to the opinion of the Committee of the Regions (2),

Acting in accordance with the ordinary legislative procedure (3),

Whereas:

(1) The communication of 20 July 2010 from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions entitled 'Towards a European road safety area: policy orientations on road safety 2011-2020' stated the strategic objectives of the Union to halve the number of road deaths by 2020 compared to 2010 and to move close to zero fatalities by 2050. However, progress towards achieving those objectives has stalled in recent years. A new interim target of halving the number of serious injuries by 2030 compared to 2020 was endorsed by Council in its conclusions of 8 June 2017 on road safety, endorsing the Valletta Declaration of March 2017. Greater efforts are therefore needed to attain both those targets.

(2) According to the Safe System approach, death and serious injury in road accidents are largely preventable. It should be a shared responsibility at all levels to ensure that road accidents do not lead to serious or fatal injuries. In particular, well-designed, properly maintained and clearly marked and signed roads should reduce the probability of road accidents, whilst 'forgiving roads' (roads laid out in an intelligent way to ensure that driving errors do not immediately have serious or fatal consequences) should reduce the severity of accidents. The Commission should provide guidance for the provision and maintenance of 'forgiving roadsides', building on the experience of all Member States.

(3) The roads of the trans-European transport network (TEN-T network) identified in Regulation (EU) No 1315/2013 of the European Parliament and of the Council (4) are of key importance in supporting European integration. A high level of safety should therefore be guaranteed on those roads.

(4) The road infrastructure safety management ('RISM') procedures implemented on the TEN-T network have helped reduce fatalities and serious injuries in the Union. It is clear from the evaluation of the effects of Directive 2008/96/EC of the European Parliament and of the Council (5) that Member States which have been applying RISM principles on a voluntary basis to their national roads beyond the TEN-T network have achieved much better road safety performance than Member States which did not do so. It is therefore also desirable for those RISM principles to be applied to other parts of the European road network.

(1) OJ C 62, 15.2.2019, p. 261.
(2) OJ C 168, 16.5.2019, p. 81.
(3) Position of the European Parliament of 4 April 2019 (not yet published in the Official Journal) and Decision of the Council of 7 October 2019.
(4) Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU (OJ L 348, 20.12.2013, p. 1).
(5) Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management (OJ L 319, 29.11.2008, p. 59).

Study Concept & Objective

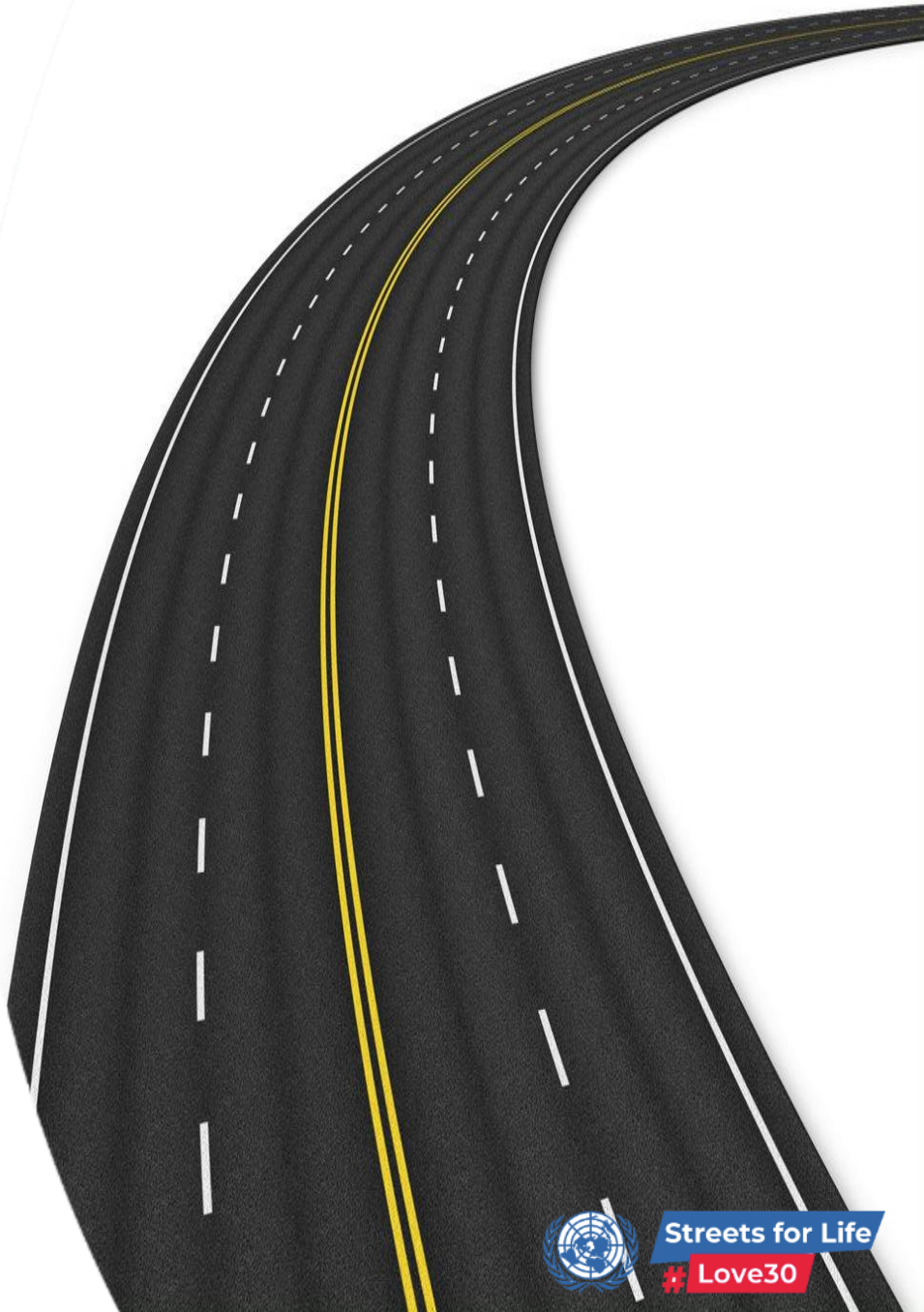
In accordance to the provisions of the Directive 2019/1936/EC, this project aims to develop a new, integrated methodology for a common network-wide road safety assessment & common safety rating system for classification of the existing road network in categories.

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.

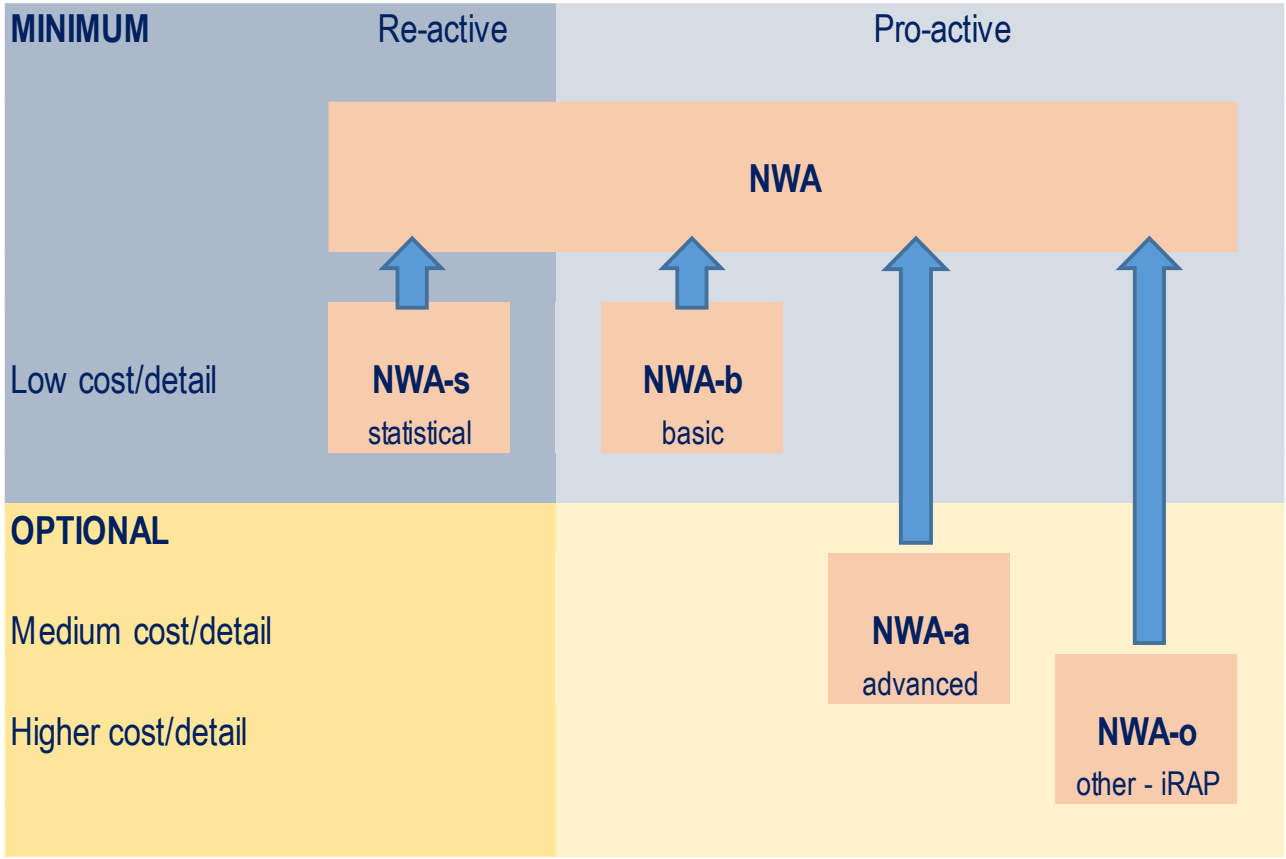
NWA Methodological Concept

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

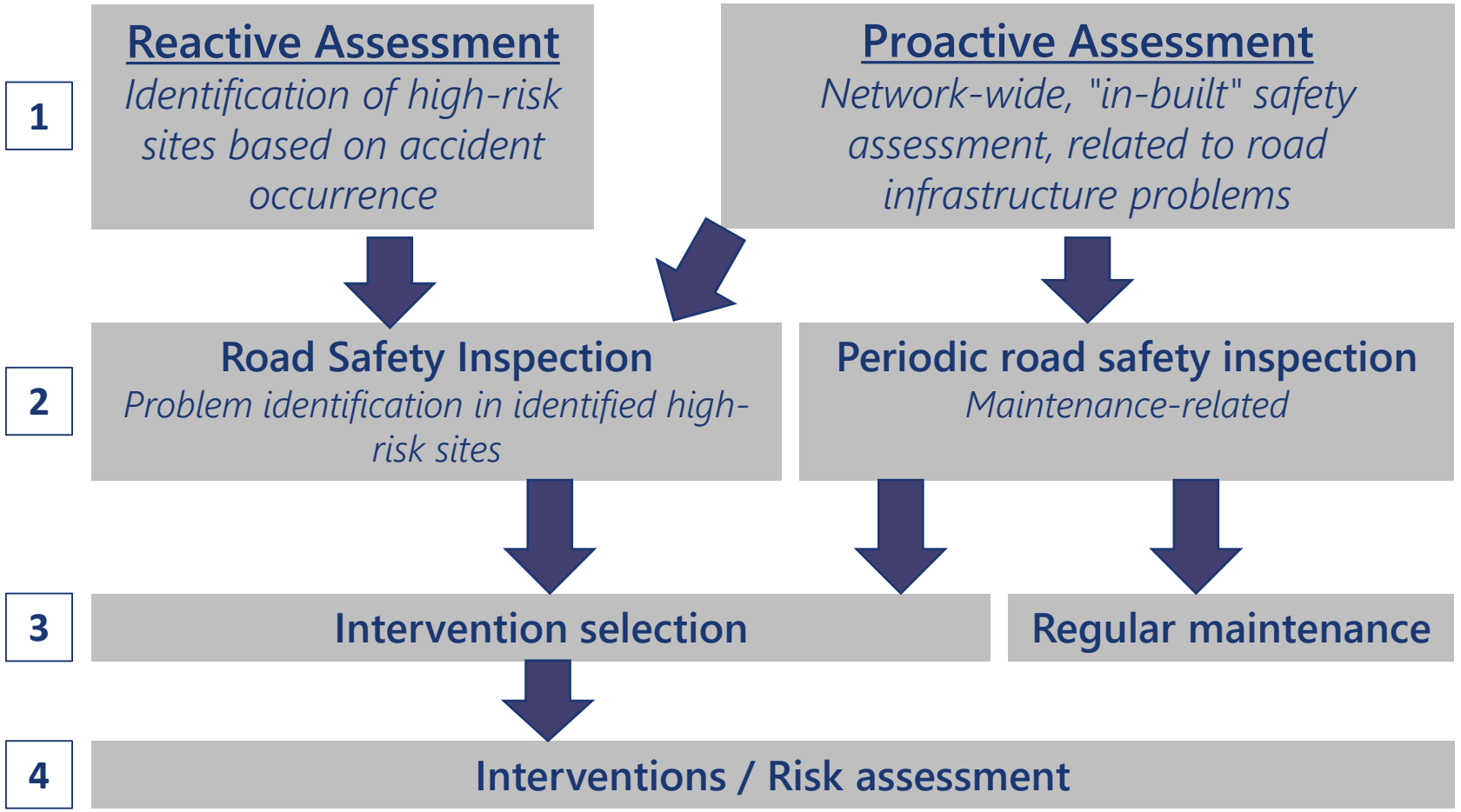
- A modular approach is proposed:

  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



- 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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