



Interreg



**Danube Transnational Programme
RADAR**

Project co-funded by European Union funds (ERDF, IPA, ENI)



**Road Infrastructure Safety
Management Directive
2019/1396/EC (RISM) in
Danube area**

**O.T4.1 Position Paper on the Road Infrastructure
Safety Management Directive 2019/1396/EC
(RISM) in Danube area**

**TA6: ROAD INFRASTRUCTURE SAFETY MANAGEMENT DIRECTIVE
2019/1396/EC (RISM) IN DANUBE AREA**



RADAR – Risk Assessment on Danube Area Roads



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Activity Number	6.2	Output Title	O.T4.1 Position Paper on the Road Infrastructure Safety Management Directive 2019/1396/EC (RISM) in Danube area
Work Package Number	6	Work Package Title	Strategy and Action Plans extension (RISM Directive and Covid-19)
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Status (F: final, D: draft, RD: revised draft):	F		
Version Number	1		
File Name	20211012 _Position paper_TA6 RISM_v1.0_FPZ		
Issue Date	17.11.2021		
Project start and end date	June 1, 2018 – November 30, 2021		

Revision log

Version	Date	Reason	Name and Company
1.0	17.11.2021	Draft submitted for a review	FPZ
	28.11.2021	Final version	FPZ

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1. Introduction

The RADAR project (Risk Assessment on Danube Area Roads) aimed at fostering infrastructure-based safety assessments of roads and at bringing about improved safety levels in the Danube region. RADAR's Road Safety Expert Group focused on six *Thematic Areas* (TA), one of them being “Thematic area 6 – Road Infrastructure Safety Management Directive 2019/1936/EC (RISM) in Danube area”. This position paper presents the key results of an EC Directive 2019/1936/EC Amendment implementation status overview in countries of the Danube Area Region. Consequentially, it puts forward a set of recommendations for remedial safety interventions, targeted at decision-makers and stakeholders in Danube Area countries: state governments, ministries & agencies, local governments and road authorities.

TA 6 – Thematic Area 6 is focused on implementation of the EC Directive 2019/1936/EC Amendment in countries of the Danube Area Region. All of the Member States, with some states outside EU, successfully implemented the EC Directive 2008/96/EC and set up procedures throughout which RSIA, RSA and RSI are being performed on newly designed and existing road infrastructure. Since European Commission amended the mentioned directive, Member States need to amend respective national laws in order to include newly set requirements.

Some of the requirements set by the Directive include the extension of road safety inspections to the overall national main road network, whereas previously the safety inspections were mandated on TEN – T road network only. Member states are also obliged to define which roads represent the national main road network and need to deliver a list of roads to the Commission. Another aspect of the Directive is the increased focus on vulnerable road users (VRU's) during safety assessments. Results of the above-mentioned safety inspections should also be delivered in a common format which would allow for comparison between states.

2. EC Directive 2019/1936/EC (RISM)

In order to improve the road safety status in Member states of the European Union, the European parliament and the council of the European union adopted the Directive on road infrastructure safety management (RISM) on 19 November 2008. RISM directive provided a legal framework under which all member states had to put in place mechanisms which mandated the RSIA (Road Safety Impact Assessment), RSA (Road Safety Audit), RSI (Road Safety Inspection) assessments as well as NSM (Network Safety Management). After little more than a decade of the 2008/96/EC Directive successful implementation, European Commission amended the RISM directive with the 2019/1936/EC, extending the scope of safety assessments to main national roads also. Member states are obliged to implement the amendment no later than 17 December 2021 and report back to the Commission once they have successfully adopted the directive. By 31 October 2025, Member states should provide a report to the Commission on the safety classification of the entire network assessed, after which such reports should be provided every 5 years.

2.1. EC Directive 2008/96/EC

First iteration (2008/96/EC) of the RISM directive provided a legal framework under which Member States could harmonise national legislations to a common standard, and provided much needed groundwork for National regulatory bodies to establish safety related inspections, namely Road Safety Impact Assessment (RSIA) at pre-design stage, Road Safety Assessment (RSA) at design stage and Road Safety Inspection (RSI) at operation stage. The 2008/96/EC RISM directive focused mainly on roads which are part of a National TEN-T road network, but also encouraged Member States to apply its provisions to the rest of the network constructed using in whole or in part EU funding. EC Directive 2008/96/EC focused on road elements and infrastructural objects such as bridges, overpasses, junctions, intersections and other, with the exclusion of tunnels which are covered by the 2004/54/EC Directive.

2.1.1. RSA – road safety audit

RSA or “Road Safety Audit” stands for an independent, detailed, systematic and technical safety check relating to the design characteristics of a road infrastructure project, which covers all stages from planning to early infrastructure operation.

2.1.2. RSI – road safety inspection

RSI or “Road Safety Inspection” stands for an ordinary periodical verification of the infrastructure characteristics and defects that require maintenance work for reasons of safety.

2.2. EC Directive 2019/1936/EC Amendment

After approximately eleven years of the 2008/96/EC Directive successful implementation, European Commission issued the 2019/1936/EC amendment, which extended the scope of the original directive to the main national road network, while previously only TEN-T network roads were assessed. Every Member State has the freedom to define independently which roads are considered as part of the main road network and the list with the selected roads should be presented to the Commission no later than 17 December 2021.

The amendment also prescribes a targeted road safety inspection once the network wide safety assessment has been performed on the national main road network and potentially dangerous locations have been identified. Another significant amendment relates to vulnerable road users (VRU’s), with additional VRU-specific considerations being mandated by the Directive during road safety audits and inspections.

2.3. Requirements

The new directive amendment poses certain new requirements which expand or modify previously defined requirements.

Revised Directive seeks to remove disadvantages of Directive 2008/96/EZ. This goal is pursued by introducing the following main changes:

- Prescribing **transparency** and directing **further action** based on the results of road infrastructure safety management procedures.
- Incorporating a **network-wide road safety assessment**, a process of systematic and proactive risk mapping to assess the “in-built”, or inherent, road safety in the European Union.
- Extending the scope of the Directive beyond the Trans-European Transport Network (TEN-T) to **include motorways** and **primary roads** outside TEN-T network and all roads outside urban areas that are wholly or partly **built with EU funds**.
- Establishing **general requirements** regarding the characteristics of **road signs** and **traffic signs** in order to facilitate the introduction of cooperative, interconnected and automated mobility systems.
- Introducing an obligation for vulnerable road users to be systematically taken into account within all road safety management procedures.

3. RISM in Danube region

In order to comply with the recently amended 2008/96/EC Directive, Member states, and specifically countries of the Danube Area region need to implement new procedures and adapt their national legal framework to accommodate new requirements of the 2019/1936/EC. The currently assessed countries employ several national methodologies which are used to perform in-built road safety assessment, however, at present no methodology has been report as fully compatible with the requirements posed in the 2019/1936/EC Directive.

3.1. Countries in the Danube Area Region

Project RADAR assesses the road safety situation in countries of the Danube area Region, which include: Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Moldova, Montenegro, Romania, Serbia, Slovakia and Slovenia. Based on the analysis of available data on used safety assessment methods in some of the listed countries, it is evident that most of these countries primarily use RSIA, RSA and RSI methodologies for the proactive road safety assessment, with only a smaller number of countries using also iRAP/EuroRAP network wide assessments. It is also important to note that road safety audits and road safety inspections, which are most often used for road safety assessment in the observed Danube-area countries are quite costly to perform, and relatively unpractical when applied on a network-wide scale. Of the listed countries, only Austria (Austrian standard of road safety infrastructure instruments) and Czech Republic (SAMO) employ additional methodologies, which are specifically adapted for implementation within in-country local areas in order to assess the existing in-built road safety. However, those national methodologies are not yet adapted to new requirements set by the RISM Directive amendment.

An approximation of the overall road network length to be assessed under the scope of the 2019/1936/EC Directive, in the Danube area region, amounts to 42948 km.

3.2. Converging to a single common methodology

In order to successfully adhere to the requirements presented in the RISM directive, it is desirable that Member states of the Danube area region work together towards implementing a common methodology which will be based on all of the listed attributes provided in ANNEX III of the RISM directive, and meet all other requirements such as the comparability of the obtained results across countries in the Union. As the requirements set in the Directive are quite extensive and the foreseen implementation deadline is set to 17 December 2021, it would be counterproductive for the countries to try and develop proprietary methodologies or adapt some of the currently used methodologies to include all of the Directive requirements. As such, Member States should consider the adaptation of some of the already available methodologies that are easy to implement for a network-wide road safety assessments, such as iRAP methodology or, more basic, the final methodology which will be proposed in the NetSafety project. This methodology should primarily consider the individual risk, but also the collective risk so that the targets can be better aimed at road sections that have the greatest potential of improvements reducing the road accident toll. Special attention should be set on safe system principle implementation and promotion of forgiving roads concept in both design and operational phase, with a particular focus on different road users in mixed traffic environments.

The proposed methodology should ideally aim to combine the strengths of other network-wide safety assessment methods. A well-structured and reliable method that is at the same time user-friendly should be optimal.

It is important to point out that according to the revised Directive 2019/1936/EC, common methodology should apply to motorways and primary roads.

There is no clear correspondence between the road classes used in each Member State and the terminology of the Directive. Specifically:

- With regards to motorways, in fourteen Member States there is a specific corresponding road class. In two Member States, although there is a clear distinction of motorways from the rest of the road network, they do not constitute a separate road class in the national road classification system.
- With regards to primary roads, the lack of correspondence is much more prominent. Responses from most Member States indicated that primary roads are likely to spread across several road classes. Furthermore, the distinction between divided (dual carriageway) or undivided (single carriageway) primary roads is not always evident in the national road classification systems.
- Not all categories exist in every Member State country.

The definition and identification by each Member State of the roads falling into the categories to which the new methodology will be applied should be the key step.

Each European country has a different accident situation/ In each European country the number of road accidents vary. However, each Member State should use similar classifications as a guide to direct investments in improving road safety. This is necessary to comply with the requirement of the revised Directive 1936/2019, art. 5: “on the basis of the results of the assessment [...], and for the purpose of prioritisation of needs for further action, Member States shall classify all sections of the road network in no fewer than three categories according to their level of safety”.

4. Performing Network Wide road safety assessment

In order to reduce the number of fatally or seriously injured in road traffic accidents and improve the overall road safety, it is necessary to implement evidence-based measures which are supported by relevant data such as road crash data and road infrastructure data.

Most severe crash hotspots have already been rectified or hotspots are no longer simple to identify as crashes become more dispersed across the road network. In order to increase the traffic safety and furtherly reduce the number of traffic crashes, it is necessary to:

- Perform thorough investigations of the relevant road traffic accident characteristics, including the circumstances, causes and mechanisms leading to crashes, affecting the severity of road crashes and involvement of road users.
- Periodically and regularly undertake proactive risk assessments of the road network in order to define priorities and select the most critical road segments on which countermeasures will be implemented.

Risk assessment methods allow for a better understanding of the consequences of road crashes and provide information on:

- How often crashes occur
- When and where they happen
- What are the typical hazards which are present on the observed road network sections
- Which vehicle, driver and infrastructure characteristics contribute to road traffic crash occurrence

The aim of a network-wide road safety assessment is to support national road safety strategies and to provide an additional layer of relevant information, combined with existing approaches. Besides settlements, network-wide road safety assessment typically covers roads outside towns and cities, where fatal and serious injuries are concentrated for vehicle occupants. Not all roads present the same risk and examining the statistics from a wide range of countries show that around 50% of total fatalities occur on as little as 10% of total roads. Network-wide road safety assessment allows for the identification of the safest as well as the least safe road sections within an observed region or country.

Network safety management is a follow-up procedure to the network wide safety assessment analysis which presents proper treatment-oriented policies to minimise risk across a road network. Network safety management utilises acknowledged safety improvement programmes alongside other approaches, such as analysis at high-risk single sites.

Regarding the collection of attributes stated within RISM Directive, RSI and RSA can collect all the required attributes, followed by 47 attributes (2 attributes can be partially collected for a total of 49) which can be collected by iRAP methodology. When looking at aggregated national databases, a potential for collecting around 40 attributes exists. Most attributes listed within ANNEX III can be gathered by Visual, on-site inspections as well as Video Surveys. Office data processing has the potential to gather 49 attributes, followed by iRAP database which can be used to potentially acquire data on 47 attributes (with 2 attributes having the ability to be partially collected). Existing Road authority asset management systems (aggregated) have the potential to gather 25 attributes and 15 are likely to be found within the databases.

5. Conclusions

TA6 was focused on implementation of the EC Directive 2019/1936/EC Amendment in countries of the Danube Area Region. All of the Member States, with some states outside EU, successfully implemented the EC Directive 2008/96/EC and set up procedures throughout which RSIA, RSA and RSI are being performed on newly designed and existing road infrastructure. Since European Commission amended the mentioned directive, Member States need to amend respective national laws in order to include newly set requirements.

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Analysis, recommendations and action plans related to the guidelines on the implementation of the amended Road Infrastructure Safety Management Directive has been conducted in RADAR project (see Thematic Report on TA6). 2019/1396/EC (RISM). This document serves as a support towards stakeholders and countries participating within RADAR project in their attempt to transpose and implement amended RISM Directive, as it holds relevant information regarding RISM directive and its' requirements, analysis of RISM Directive implementation status and achievements in the Danube Area, compatible network wide safety assessment analysis, common methodologies which are used, as well as data availability analysis. The assessment of requirements related to the implementation of the amended RISM directive is presented, and the document can be utilised as a pathfinder manual with recommendations which can be used by national, regional and local stakeholders in their processes to establish systems, mechanisms and methodologies to implement RISM directive during 2021 and 2022.

Recommendations for state governments/ministries/agencies:

- in the process of definition of Primary road network, national authorities should encourage including roads where at least 50% of fatal and serious accidents occur;
- country specific national classification criteria should be encouraged in order to enable proper classification of high, medium and low risk roads, based on accident reduction potential as a direct consequence of road infrastructure improvements;
- safe System concept should be built in in all road infrastructure related legal acts;
- special attention needs to be given to protecting the Vulnerable Road Users and promoting Active modes of Transport by developing dedicated road infrastructure;
- all investment plans in road infrastructure safety improvements should be made based on cost/benefit analysis with modelling of savings in terms of fatal and serious injuries prevented;
- raise the minimal road safety design standards for new and existing road infrastructure.

Recommendations for local governments:

- road safety audit and inspection procedures should be performed on regional road network based on crash occurrence analysis;
- special attention needs to be given to protecting the Vulnerable Road Users and promoting Active modes of Transport by developing dedicated road infrastructure in urban and suburban areas;
- promote and expand 30 km/h speed limit zones in residential areas.

Recommendations for road authorities:

- significantly increase weight of road safety priorities in investment and maintenance plans development;
- define clear strategy and action plan to reduce 50% of fatal and serious accident on managed road network by 2030;
- set internal guidelines above the minimal road safety standards.

6. References

1. Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management

Available at:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0096>

2. 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

Available at:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1936&from=EN>

3. Project SLAIN, "How-to" guide for network wide road assessment,

Available at:

https://eurorap.org/wp-content/uploads/2021/03/SLAIN_D4.1_How-to-guide_V1_FPZ.pdf

4. Project NetSafety deliverable reports (not yet publicly available)