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Twin-Safe: Advancing Road Safety Through Twinning

Summary of Deliverable 4.4

Materials related to the training program with accreditation examination for safety auditors

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Glossary and abbreviations

Word / Abbreviation	Description
EU	European Union
TEN-T	Trans-European Road Network
RSA	Road Safety Audit
FTTS	University of Zagreb, Faculty of Transport and Traffic Sciences
HU	Hasselt University
LU	Lund University
TWIN-SAFE	The project on the topic of Advancing Road Safety Through Twinning
WP	Work package

Summary

The TWIN-SAFE project is designed to strengthen the role of the Faculty of Transport and Traffic Sciences, University of Zagreb (FTTS), as a central hub for multidisciplinary research, education, and innovation in road safety. This goal is being pursued through close collaboration with Lund University (LU) and Hasselt University (HU), as well as through the advancement of the Centre of Excellence for Road Traffic Safety (CERTS), established in January 2023.

CERTS was created with the ambition to unite leading experts from academia, the public sector, industry, and end users, building an active ecosystem of cooperation based on the "Q-helix" model. Within this collaborative framework, CERTS seeks to generate innovative, science-based solutions that address road safety challenges both in Croatia and internationally. Its vision is to become a nationally authoritative and internationally recognized institution engaged in all aspects of road safety. The mission of CERTS is to provide a strong research platform that supports applied projects in partnership with domestic and international stakeholders. By integrating knowledge into the Safe System Approach (SSA) and promoting the Vision Zero strategy, CERTS aims to expand existing expertise and generate practically applicable outcomes that contribute to a comprehensive improvement of road safety across Croatia and the European Union.

Within this context, the fourth work package (WP4) of TWIN-SAFE, entitled "Empowering the Centre of Excellence for Road Traffic Safety", is focused on advancing CERTS's research capacity and expertise. WP4 sets out several key objectives:

- Strengthening researcher knowledge in the areas of Human Factors and the Safe System Approach.
- Promoting collaboration and the exchange of expertise through targeted seminars and workshops.
- Broadening and enriching the Road Safety Summer School curriculum.
- Developing strategic joint PhD research topics to support long-term academic and professional growth.

This effort builds upon the European Union's broader policy framework. In 2001, the EU set the ambitious goal of halving road fatalities by 2010. The White Paper on European Transport Policy for 2010 highlighted the need for concrete measures to improve infrastructure safety, leading to the adoption of Directive 2008/96/EC on road infrastructure safety management, later amended by Directive 2019/1936. The Directive requires member states to implement a set of standardized tools across the entire "road lifecycle," including Road Safety Impact Assessments (RSIA), Road Safety Audits (RSA), Network-Wide Road Safety Assessments (NWRSA), and Road Safety Inspections (RSI). Road Safety Audits, in particular, are defined as independent, systematic, and technical checks carried out during all project phases, from planning to early operation. Auditors must undergo specialized training and certification, followed by periodic refresher courses.

As the official institution responsible for training road safety auditors in Croatia, FTTS has a key role in implementing these EU directives. Within task 4.6 of WP4, FTTS organized an immersive five-day RSA training program in Zagreb from March 31 to April 4, 2025, for researchers from LU and HU. The training covered:

1) Current developments in the field of auditing, both in Croatia and internationally.
2) Developments in legislation, regulations, guidelines, and technical specifications.
3) Current standards, specifications, and guidelines.
4) Examples of safety improvement measures.

5) Examples of cost-benefit assessments related to road crashes and corrective actions.

In addition to theoretical lectures, the program included group workshops and discussions with candidates about audit practices and experiences.

The first day of the training opened with registration, networking, and an introduction to the overall program. Sessions were led by experts from the Faculty of Transport and Traffic Sciences (FTTS), focusing on the principles of road safety auditing, legislation, and the preparation of RSA reports. Participants were also introduced to the safe system approach and methods of proactive and reactive infrastructure safety management.

On the second day, the agenda expanded into more specialized topics. The morning sessions introduced network-wide road safety assessment and practical applications of road safety impact assessment (RSIA) across different project phases, from conceptual design to implementation and initial road use. These sessions emphasized methodologies for evaluating safety risks before, during, and after road construction. The afternoon focused on safe roadside design principles and a dedicated session on road safety audits with an emphasis on powered two-wheelers (PTWs), reflecting the importance of vulnerable road users in safety management.

The third day introduced the use of crash data, statistical methods, and monitoring techniques, providing participants with analytical tools to support safety assessments. Subsequent sessions covered safety assessment methods and risk assessment techniques, offering practical approaches for evaluating infrastructure safety performance. The afternoon was dedicated to cost-benefit analysis of safety interventions, underlining the economic dimension of road safety decisions and providing examples of how corrective measures can be assessed for efficiency and impact.

The fourth day emphasized the importance of road markings and signs and their role in ensuring safe traffic operations. Both theoretical sessions and laboratory demonstrations were conducted to showcase methods of testing the quality and performance of markings and signs. The day also included a practical session on testing road signs and markings, allowing participants to gain hands-on experience with evaluation techniques.

The final day of the training combined case study examples of RSA practice from the region and beyond with practical exercises in developing RSA reports. Participants worked under expert guidance to apply the knowledge gained throughout the program, preparing sample audit reports and discussing solutions to common challenges encountered in real-world audits. The program concluded with closing remarks, summarizing the key lessons learned and reinforcing the importance of continued professional development in road safety auditing.

This deliverable serves not only as a record of training activities, but also as a learning resource for participants, PhD students at FTTS, and other researchers interested in road safety. It provides an overview of the fundamentals of RSA, its aims, phases, and benefits, while also presenting the outcomes of the training sessions.