OUTPUT 09

Theoretical and practical teaching materials development related to the road infrastructure safety inspection

The task will be implemented under working package 3 (WP3. Teaching materials development related to the road infrastructure safety inspection). Based on the prepared methodology (IO.5) and practical classes on the selected road sections (IO.6-8) for RSI implementation, theoretical and practical teaching materials will be prepared.
Due to the requirements of Directive 2019/1936/EC, there is a huge demand for educated staff who will be able to implement it. Up to now curricula have hardly considered road safety issues. This is gradually improving, but the road network management staff do not have enough knowledge to effectively implement road infrastructure safety management tools. This expertise is necessary to implement measures to reduce the number of fatalities and seriously injuries in the next decade by 50%.
The approach to road safety issues should be changed from reactive to proactive. The former serves to respond only to existing risk on the roads in operation (identification, risk assessment and response).
The latter approach, which is much more effective, consists of preventive measures (anticipating the occurrence of accidents and using solutions that prevent them), which are implemented for planned, designed and existing road sections. This approach will be emphasised as part of the prepared materials.
The planned result of the task will be the development of innovative teaching materials related to road infrastructure safety inspection. Materials will be divided in theoretical and practical parts. The developed materials will be dedicated for two target groups: students and road infrastructure managers on the national, regional and local level and it will be included a tool to support the implementation of RSI. The following range of prepared materials is foreseen:

• Students teaching materials – a more extensive theoretical part that will allow the proper preparation of future road safety inspectors (road infrastructure managers), in the field of road safety issues, with a module of practical classes on the roads (detailed inspection, on selected road sections).
• Road inspectors teaching materials – a more extensive practical part with practical classes related modules with all types of inspection (general, detailed, special inspection at night, on sections with road works).
Such differentiation will allow for better theoretical preparation of potential road

infrastructure managers as part of the teaching process in universities, and staff training will increase competence and knowledge in the effective implementation of procedures RSI

Target groups:

1. Research and teaching staff from institutions involved in the project.
2. Students of civil engineering and transportation engineering.
3. National, local and regional road authority staff.

Elements of innovation:

1. Development of RSI teaching materials in accordance with the provisions of RSI methodology developed in IO.5.
2. Use of results of empirical and analytical research in the teaching process conducted by the Consortium participants under WP2 (Directive 2019/1936/EC – The Road Infrastructure Safety Management – international perspective) and IO.6-8.
3. Building a knowledge database on road and source of hazards integrated into road accident database and traffic parameters.
4. Construction of applications supporting the RSI process, which can be used widely by road safety management staff.
5. The possibility of using built tools to support the implementation of RSI in training and teaching processes

Expected impact:

The prepared materials will be used when conducting classes with students of civil and transportation engineering as well as in the training of road authority staff and designers. They will contribute to the increase of the level of knowledge and enable more effective identification of existing hazards and their classification.

Transferability potential:

The developed materials will be available on an Internet platform, which will enable their use by other universities dealing with RISM issues throughout Europe.

The division of work:

The work will be divided among all consortium participants and will include:
• Preparation of the syllabus.
• Preparation of the presentation.

• Development of materials from research and implementation projects related to the RSI.
• Development of teaching materials using data from practical classes on the selected road sections (IO.6-8) and other projects (e.g. SLAIN, SENSoR, RADAR).
• Verification and evaluation of developed teaching materials during didactic workshops and multiplier events.

The tasks leading to the production of the intellectual output:

The leading institution (UC) will be responsible for supervising the development of teaching materials. Consortium participants will work together to prepare these materials.

Applied methodology:

In the process of developing the RSI teaching materials, the method of combining traditional teaching (presentations, lectures) with a modern approach using the results of empirical and analytical research as well as modern multimedia techniques and support tools will be used.
Verification of the prepared materials will be based on:
• Observation of how the trainees receive the prepared materials, what problems occur, how they are solved.
• Opinions of academic teachers and those responsible for training of road authority staff about the prepared methodology.
• Evaluation of prepared materials by a selected control group of students and road authority staff.
• Assessment of the knowledge of students and road authority staff.

Development of road safety inspection support tools

As part of the task, the tools supporting RSI implementation will be verified. Based on Intellectual Output 5, the effectiveness of existing tools used as part of RSI will be determined and the possibility of their modification based on the needs identified. New tools will be built based on the results of pilot research conducted under Intellectual Output 6-8 as well as knowledge and previous experience of consortium participants, especially EuroRAP. These include:
• Databases on hazards and their sources, integrated with databases on road events and traffic parameters, which will support the personnel performing the RSI in identifying and classifying faults in existing road infrastructure.
• Applications supporting the RSI automation process that can be used by road authority staff (data collection support, application integration with databases and GIS tools).

The planned result of the task will be the adaptation of existing and construction of new tools supporting the implementation of RSI.

Target groups:

1. Research and teaching staff from institutions involved in the project.
2. Students of civil engineering and transportation engineering.
3. National, local and regional road authority staff.

Elements of innovation:

1. Constructing databases with classification of hazards and their sources, integrated with databases on road events and traffic parameters.
2. Developing applications supporting the RSI automation process, which can be used universally by road authority staff.
3. The use of the built tools to support the implementation of RSI in the teaching and training processes.

Expected impact:

Updated or developed implementation of RSI support tools can be used in the teaching (for students) and training (for RSI staff) throughout Europe. An innovative approach to RSI, in terms of building tools to support its implementation, will allow verification of training and teaching processes and enable their implementation in countries where the subject is not covered.

Transferability potential:

RSI support tools, such as databases and applications will be available on the Internet platform, which will enable their use by research centres and road authorities throughout Europe.

The division of work:

The work will be divided among all consortium participants and will include:
• Adaptation of existing tools for the needs of the updated RSI implementation methodology (under Intellectual Output 5-8).
• Construction of databases which will support the conducting of RSI.
• Construction of applications supporting the RSI automation process.
• Preparation of publications summarising completed works.

The tasks leading to the production of the intellectual output:

The leading institution (EuroRAP) will be responsible for supervising the adaptation of existing and development of new RSI support tools. Consortium participants will cooperate in updating and building these tools, exchanging knowledge and experience. The necessary scope and detailed division of work will be defined under Intellectual Output 5.

Applied methodology:

As part of this task, databases will be built, with the means to expand and adapt to the needs of individual users. As part of supporting RSI implementation, simple to use applications will be built that will increase the RSI automation process.