COMMON STANDARDISED CURRICULUM AND CERTIFICATION METHOD FOR ROAD SAFETY EXPERTS: TRAINING AND PILOT APPLICATION ON SECONDARY ROADS

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SUMMARY
The Federal structure of India and its related repartition of powers and mandates has some similarities with the legislative organization of the European Union.
In its responsibility for the safety of the main cross border road network, the European Union issued the Directive 2008/96/CE on road infrastructure safety management.
The Directive’s pillars are: Road Safety Audits (on projects), Road Safety Inspections (on existing roads), Road safety Impact assessment (on networks), and training and certification of road safety inspectors.
Due to the EU rules, such directive is mandatory ONLY for the major European highways (TEN-T road network), while it is well known that the highest number of fatalities occurs on rural roads not only in Europe but worldwide, where India constitutes a noticeable example.
A satisfactory safety of the secondary network is also extremely important to reduce casualties involving vulnerable road users.

With the aim of supporting a wider implementation of the Directive's guidelines to the rural road network in the EU Member States/Regions, the EU has launched a pilot project for the education and training of local experts.
This approach could serve as a model in every situation where the repartition of central and local authorities’ legislative mandate can be assimilated to the European one.
Such common procedure will lead to a common standard of infrastructure safety management, based on the EU Directive’s guidelines and including the appropriate flexibility to be adapted to specific local situations.
The high replicability of the study results and recommendations will allow a number of central and local Authorities to set up their own training and certification system on a commonly agreed basis for road infrastructure safety management.

Key Words: Road safety audit; International certification; standardisation; inspection

PURPOSE OF THE STUDY
Road infrastructure can contribute deeply to the safety of transport users. Its contribution can be enhanced and increased by a responsible process of design, construction and maintenance of the roads, in order to keep their safety level up-to-date at all times.
To this end the European Union has published guidelines on the kind of audits and inspections necessary to ensure the right level of construction and maintenance of European roads.

European Union’s legislative mandate on road infrastructure safety is limited by the TFEU\(^1\) to the cross-border network (so-called TEN-T, Trans European Network in Transport), consisting of major multimodal cross-border corridors, whose road components are mainly motorways and highways. The Federal structure of India and its related repartition of powers and mandates has some similarities with the legislative organization of the European Union: the National Highways Authority is responsible for the development, maintenance and operation of National Highways, whereas individual States are responsible for the secondary network.

The European Union has only the mandate to issue recommendations or directives to the Member States for the implementation of the harmonised legislation. The European Parliament and Council on 19/11/2008 issued the Directive 2008/96/CE on road infrastructure safety management, which foresees a series of safety controls, as well as guidelines for training and certification of road safety auditors, professionals not yet present in all EU Member States, and whose education varies a lot throughout European regions. When adopted by the Member States, the Directive will apply only to the part of the TEN-T road network under the responsibility of the Member State. In the European Union, only 6% of road accident fatalities in 2008 occurred on motorways, and 56% in accidents on rural roads\(^2\).[CARE 2010]

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1. Treaty Founding the European Union art. 9 to 100 under Title VI,

2. 2 lanes paved roads, outside the urban area
To improve road safety and road infrastructure safety management, the pilot study PILOT4SAFETY, co-financed by the European Commission – DG MOVE, is applying the Directive’s approach on selected rural roads in 5 EU regions, to share good practices and define common agreed training curricula and tools for qualification of road safety personnel.

MATERIALS AND/OR METHODS

The project is focused on Road Safety Audits (RSA) and Inspections (RSI) out of the 4 measures indicated by the Directive, as these two procedures greatly influence the infrastructure road safety factors. These preventive tools for projects and existing roads can be applied in the short term without any network analysis, but need an adequate training of the auditors and inspectors.

FEHRL (Forum of European National Highway Research Laboratories) is the project coordinator and the training supplier via its member institutes Generalitat Catalunya (Spain), Randers Municipality (Denmark), Astral Lazio (Italy), Region of Central Macedonia (Greece), and CDV (Czech Republic) participate directly with their road safety experts in the training and the subsequent RSA and RSI pilot applications. Prefecture of Pieria Greece, the Walloon region and the Brussels-Capital region (Belgium) also joined the initiative by participating to the training.

Further European regions have expressed their interest to join the initiative and an exchange of experiences has been established with another EU funded project (BALTRIS) focused on road safety in the Baltic regions.

Figure 2 Scheme of the Pilot4Safety Approach
The training was designed with a modular concept: a preliminary part presented the road safety basics; 2 modules progressively detailed the RSA or RSI procedures, and a final practical part aimed at checking and consolidating the acquired knowledge.

Figure 3: The four modules of the RSA training plan (source: Pilot4SAFETY project)

EXPECTED RESULTS

The expected results are:

- to develop curricula and specific tools for the auditing and inspections of rural roads in EU Regions adaptable to the needs of regional/local road authorities,
- to reach an agreement between the involved Regions about the acceptance of a common training curricula and the exchange of safety experts,
- to carry out one Road Safety Audit and one Road Safety Inspection respectively on a design and on an existing road in each participating Region: each safety team includes at least one safety expert from another Region.
The final report will contain a template for an international certification, developed taking into account the project’s results.

Using the Directive as a reference for safety application will allow the road managers to easily extend the application field of the Directive to a larger part of their network, including rural roads.

This will lead to more homogeneous national and EU road safety practices and an extended safety approach to the overall national road network.

**DISCUSSION**

*The Common Curricula*

A common standardised approach has been adopted in each project phase: the first draft of the Curriculum was prepared by FEHRL. It contained a structured list of items related to basics of road infrastructure safety, RSA, and RSI with details about the number of training hours for each item for a total of 160 hours. After an internal discussion and a specific survey, an updated version of the curriculum was issued for partner’s approval.

The final version adopted takes into account the needs of the different regional road authorities expressed during this consultation process.

It is to be underlined that both the RSA and RSI Curricula foresee the possibility for the trainees to give feedbacks on the course plan, as well as some specific minor changes in the topics. As the expectations of each single Road Authority have been taken into consideration, the curriculum plan remained as flexible as possible, maintaining the same common approach. More than 16 hours of training has been dedicated to a presentation given by the trainees dealing with the road safety procedures in their regions.

*The “Safety prevention manual for regional and local roads”*

A “Safety prevention manual for regional and local roads” has been developed taking into account the main existing manuals and the findings of previous EU funded research projects.

The pilot project focuses on RSA and RSI, but the mentioned Directive 2008/96/CE considers as well the following road safety procedures:

- Road safety impact assessment (RSIA or RIA) (strategic comparative analysis of the impact of a new road or a substantial modification to the existing network on the safety performance of the road network),
- Road safety audit for the design stages of roads (RSA) (independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation),
- Safety ranking and management of the road network in operation (incl. management of high risks road sections) (method to identify, analyse and rank sections of the road network which have been in operation for more than
three years and upon which a large number of fatal accidents in proportion to the traffic flow have occurred)

- Road safety inspections for existing roads (RSI) (an ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety).

As a basis for training of international safety personnel coming from several EU countries, a clear definition of the relevant procedures and a clear understanding of how these procedures complement each other to an overall road infrastructure safety management has been considered necessary and therefore included in the Manual.

The analyses made and reported during the project activities have shown that the practices are not really standardised and that there are various interpretations on how to conduct them.

There is also no standardised definition, even if there is a kind of common understanding of what a Road Safety Inspection and Road Safety Audit should be.

A comprehensive definition of RSI has therefore been drafted (based on the different elements underlined in the two previous chapters) by the partners and adopted for the project (table 1).

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**Table 1. Consolidated definition of RSI as adopted by PILOT4SAFETY**

| Road Safety Inspection | is a preventive safety management tool implemented by road authorities/operators as part of a global Road Safety Management. It is a systematic field study organized sufficiently frequently on all existing roads or sections of roads to safeguard adequate safety levels. It is carried out by trained road safety experts to identify hazardous conditions, deficiencies that may lead to serious accidents. RSI results in a formal report on detected road hazards and safety issues |

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This definition is the result of the analysis of some relevant references and reflects the common understanding of the RSI procedure. However, the definition also raises some very important questions, like the inspection frequency, the use or not of accident data, the independence of the inspection team, the report layout and content.

At present the project activities (RSI on the field) are facing these problems and they will be addressed in the Evaluation Report at the end of the project.

While the directive (art. 2) defines RSA as “an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation”, the Pilot4Safety partners have harmonised the concept and adopted the following definition (table 2).
Table 2. Consolidated definition of RSA as adopted by PILOT4SAFETY

The **Road Safety Audit** describes a systematic and independent examination of a project designed to highlight potential security issues at the earliest possible stage of planning and construction, to reduce or eliminate these problems and limit the risk that could be submitted different types of users.

| Highlighting of the earliest possible stage is an important issue, because it is commonly recognized that the earlier the stage, the higher the number of the audit recommendations accepted by the road managers. |
| The different types of users are mentioned to underline that the audit should take into consideration also the **vulnerable road users** (VRU) like pedestrians, cyclists and disabled people. |
| Specific measures for the safety of these user groups are under analysis by ongoing EU funded projects; some of them are dealing also with road equipments, such as motorcyclists friendly road restraint barriers. |

**CONCLUSION**

A Common European standardized training and certification methodology is achievable, the different local needs are taken into consideration and the methodology is divided in a general part and a specific one related to the local road safety issues.

The discussion related to the international curricula did not raise any particular problem between the international partners, due to a good common understanding of the RSA and RSI basic concepts; the amendments to the final version were only related to minor issues.

The large numbers of existing road safety handbooks, manuals and guidelines have obliged the partners to make a choice during the preparation of the training tool: the approach was towards an easy and practical manual, mainly related to the rural roads, summarizing the main findings of the previous European projects and some selected parts from other road infrastructure safety guidelines. The resulting final handbook will respond to all the needs expressed at the beginning of the pilot project.

The training in English implies an additional pre-selection of the technicians coming from different countries, based on the linguistic skills. This is a problem referring to all situations where the participants to the training schemes come from regions where different languages are spoken. This should be a road authority's concern; however the recent experience has shown that the language barrier, in case of specific technical issues, can be overcome if addressed in advance.

The common training in Brussels has been evaluated as a fruitful experience by the majority of the trainees, particularly for the exchange of experience between road safety personnel coming from different countries. However, once an European common standardized certification methodology is achieved, courses can be carried...
out locally in the regional language and there will be translated versions of the training handbook and other material.

This pilot initiative should set the basis for a larger one, involving more European regions, to ensure a fine tuning of the main findings and to launch the common European procedure.

Reactions from some Member States on the effectiveness of the action, and the importance of extending the EU Directive to national/regional road networks have been very positive. In the time a significant increase of rural road safety level is expected by the focused training of road safety professionals.

REFERENCES


Pilot4SAFETY: Pilot project for common EU Curriculum for Road Safety experts: training and application on Secondary Roads - http://pilot4safety.fehrl.org/
