

ICT-DRV:

Preparing and keeping professional drivers qualification up-to-date for their changing job requirements with multimedia-based learning

Progress/Final Report

Public Part

Project information

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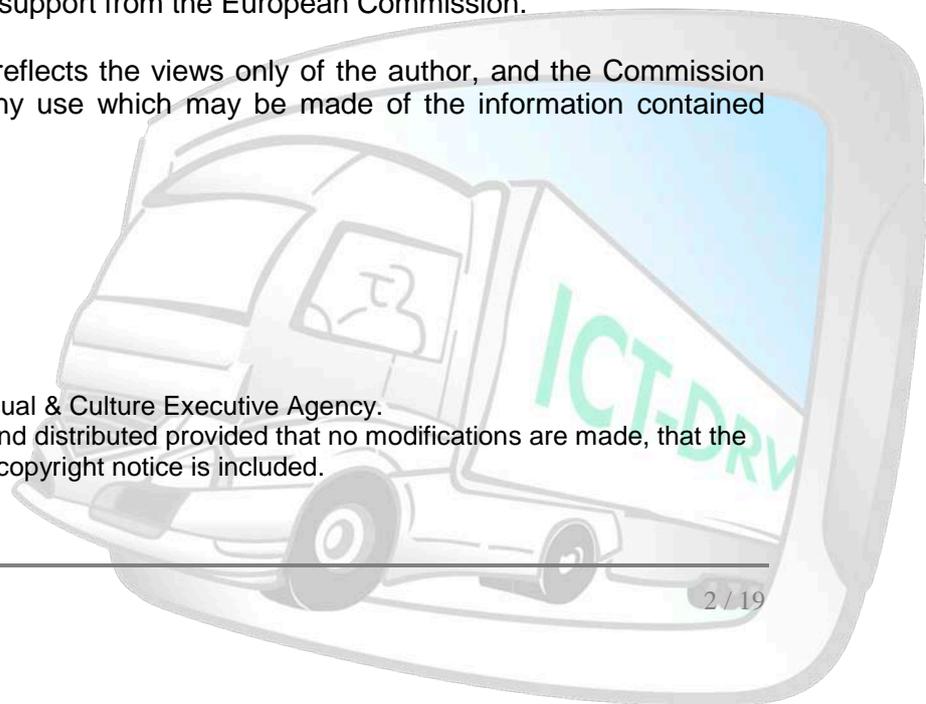
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Executive Summary

The occupation “professional driver” ranges in Europe under the top ten jobs employers are having difficulty filling with qualified employees. At the same time this occupation is characterised by a fundamental increase of qualification requirements during the past decades. This situation is especially challenging due to the rather low level of professional qualification within this occupation. However, the qualification of professional drivers is considered an important factor regarding road safety with high relevance for all EU member states and DG MOVE introduced directive 2003/59 that regulates common basic and continuous training for professional drivers EU-wide. This assigns the challenging task to prepare the numerous professional drivers for the jobs requirements and to keep them qualified for their job once they entered into the labour market on initial and continuous VET in Europe. ICT-based training offers additional opportunities to fulfil this task.

But a widespread integration of ICT-based learning into professional driver training is hindered by strong scepticism of involved actors towards technology-supported learning and by legal regulations still applying an input orientation with a focus on traditional training settings. Both barriers are based on missing trust into ICT-tools and their appropriate application within VET for drivers with their special needs and characteristics. ICT-DRV lays ground for the formation of trust and therefore a widespread acceptance of ICT-based learning within professional driver training in Europe by developing indicators and recommendation for a high-quality integration of technology-based training into professional driver VET and by facilitating a culture of quality improvement and innovation at all levels of professional driver VET and with regard to the integration of ICT-based learning.

This report provides information on the ICT-DRV projects implementation after 15 months of project work. These months have been devoted to exploring the current landscape of professional driver training with regard to technology-supported learning in the participating project countries and to laying grounds for the development of innovative solutions for professional driver training in future that are based on instructional design principles and findings.

The report contains information on the projects aims and objectives as well as on its overall implementation approach, on the already available project results and outcomes on the project consortium, the project steps planned for the upcoming 15 months of project work and the contribution the project makes to European policies.

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1. Project Objectives

It is the overall aim of this project to enhance professional driver I/CVET in Europe with means of ICT technology in order to meet the labour market needs in terms of the urgent need for well qualified professional drivers and to make VET for professional drivers more responsive to the special needs and characteristics of the target group “professional drivers” especially when applying multimedia tools.

The project therefore explores opportunities, limitations and requirements to enhance professional driver training in the framework of and beyond directive 2003/59/EC with the means of ICT-based training. In order to reach this aim the project ...

- explores and systemises existing research results on ICT-based training within (professional) driver training,
- explores the application of ICT (primarily simulators and CBT) in professional driver training related to directive 2003/59/EC but also beyond this framework in the countries represented in the consortium and identify examples that can be considered as good practice in this field,
- identifies elements of professional driver training that can benefit from the use of driving simulators in order to facilitate the participants learning and the transfer of learning results into praxis and define conditions that need to be complied with in order to ensure a high quality training with multimedia tools,
- develops, tests and evaluates pilot/prototype computer and simulator based training elements for professional driver training based on the state of the art in instructional design that can be used as examples for further developments and in order to demonstrate the conditions for ensure (pedagogical) quality within the application of computer and simulator based training within professional driver training and the conditions in order to comply with legal requirements,
- explores and defines competence requirements on trainers facilitating multimedia based training within professional driver qualification and draft and test a training offer to address these requirements,
- develops recommendations for the high-quality application and integration of computer and simulator based training in the implementation of training related to directive 2003/59/EC under consideration of the different legal requirements in the participating countries, if applicable, make

recommendations for the improvement of existing legal regulations with regard to pedagogical quality within professional driver training and multimedia use.

- establishes a sound basis for and stimulates a continuous dialogue among developers of computer and simulator based training, trainers/facilitators working with such technology, public bodies involved in the implementation of directive 2003/59/EC and other stakeholders involved on the use of computer and simulator based training in profession driver training such as public institutions and researchers and
- exploits and disseminates the different project results with adequate means at national and European level and to the appropriate target groups in order to facilitate the application of the results from operational up to policy level in a national and a European context.

These objectives directly refer to the gaps and deficits identified with the initial research conducted prior to the projects start. They are completed with additional elements as the allocation of best practice examples of ICT use in professional driver training to support the realisation of the overall aim of the project. In order to reach the projects aim to enhance professional driver training in Europe, the project likewise addresses stakeholders at policy – authorities and policy makers at European and national level - as well as at operational – VET providers and educators - level of professional driver training in order to ensure the necessary impact to facilitate real change of the current situation.



2. Project Approach

In order to reach its aim and objectives the ICT-DRV project applies a multidimensional approach that equally includes research, consultation with stakeholders and dialogue based development of innovative solutions. It furthermore includes the investigation of the current situation of technology-based training within professional driver qualification, the development of instructional design improved pilot demonstrators and the drafting of quality standards for the successful and learning oriented integration of e-learning and simulator-based learning into professional driver training in Europe. This, furthermore, leads to concrete policy recommendations for the integration of such learning tools/ approaches in the context of EC Directive 2003/59/EC currently investigated also with regard to such multimedia tools.

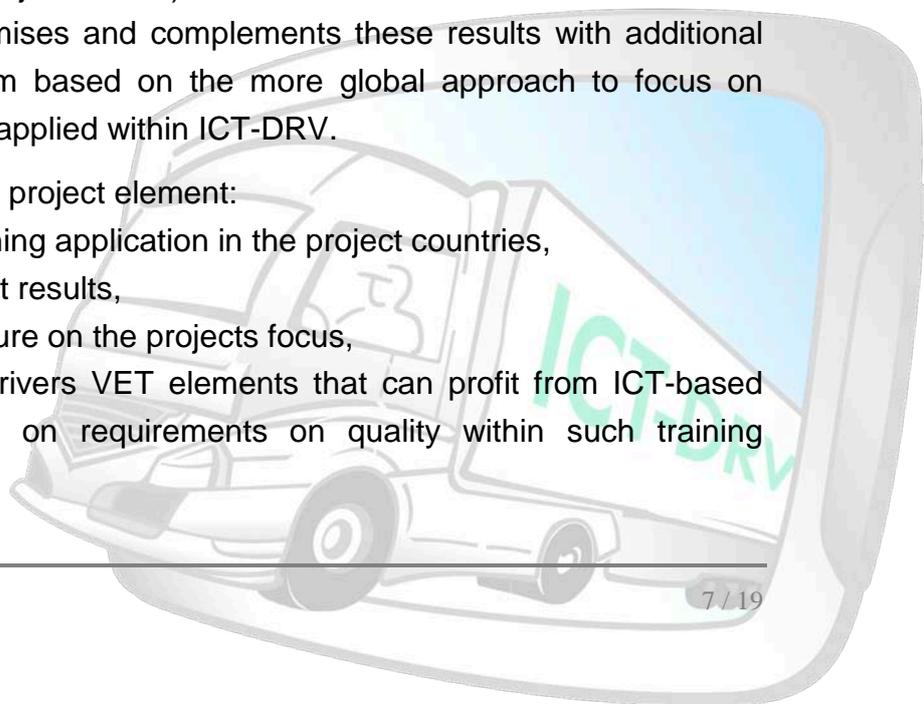
The methodological approach applied leads through three elements that interrelate with each other:

Research and analysis

It is the major goal of this element to identify quality indicators for the learning oriented integration and implementation of multimedia-based learning elements into professional driver training (WP5). The majority of relevant information is available already through scientific research and project results as well as practical experiences in the countries examined investigated in WP 1 and 2. This information has already been reviewed and analysed in terms of the projects focus. Cost-benefit-considerations have not justify the implementation of an own study in order to determine elements that might not be covered in this way especially because other projects results (see related project above) can and will be used as basis for this analysis work. ICT-DRV systemises and complements these results with additional information and evaluates them based on the more global approach to focus on overall professional driver VET applied within ICT-DRV.

Milestones to be reached in this project element:

- review of ICT-based training application in the project countries,
- review of previous project results,
- review of scientific literature on the projects focus,
- report on professional drivers VET elements that can profit from ICT-based training application and on requirements on quality within such training settings.



Development and testing

This project element aims to dive deeper into high-quality application of computer- and simulator-based training. Pilot training demonstrators are developed based on instructional design principles (WP3) and requirements on trainers working with such tools are identified and addressed with a pilot training scheme (WP4). The results of these development and testing activities further enrich the development of conclusions for computer- and simulator-based training in professional driver training (WP5).

Milestones to be reached in this project element:

- development of 3-4 pilot training element demonstrators and their evaluation,
- identification of requirements on trainers working with CBT and simulators,
- conclusions on opportunities, limitations and requirements to further enhance professional driver training to labour market and target groups needs with means of driving simulators and CBT.

Exploitation and sustainability

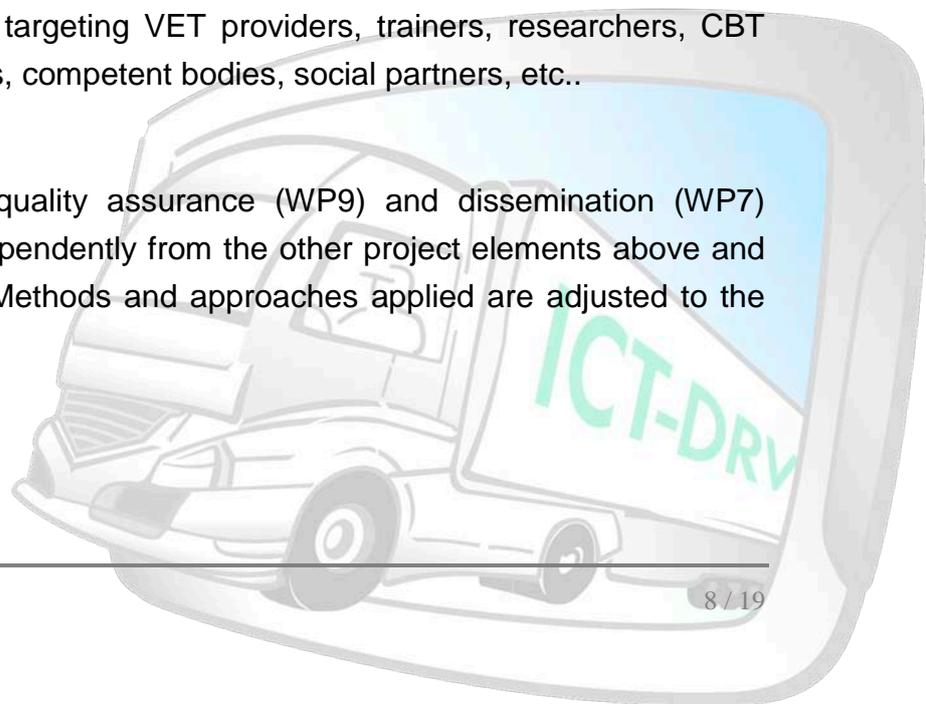
Exploitation and sustainability of project results is the major aim of this project element. This is implemented by drafting and disseminating recommendations on adequate integration of ICT specifically for the implementation of directive 2003/59/EC (WP5) and the facilitation of sustainable dialogue among key players in the field (WP6).

Milestones to be reached in this element:

- recommendation on simulator and CBT application within directive 2003/59/EC on professional driver qualification in Europe,
- 1-2 national workshops per country for different groups of stakeholders,
- a European workshop and a corresponding virtual forum on ICT use in professional driver VET targeting VET providers, trainers, researchers, CBT and simulator developers, competent bodies, social partners, etc..

Cross-cutting elements

Project management (WP8), quality assurance (WP9) and dissemination (WP7) activities are implemented independently from the other project elements above and throughout the whole project. Methods and approaches applied are adjusted to the needs of each project element.



3. Project Outcomes & Results

Major outcomes and results, so far, are:

[Report on e-learning and simulator-based learning in professional driver training in selected countries incl. a collection of emerging practices in the field](#)

Moncef Semichi, AFT (FR), February 2014

This report contains the results of stakeholder interviews and consultations as well as desk research on the topic of computer- and simulator-based training in selected European countries. The conducted study addressed the situation in France, Germany, the UK, Spain, Finland, Hungary, Austria and Poland and has been enriched by information from Canada. It analysis the scope, the frequency as well as the acceptance of CBT and SBT application within professional driver qualification in the selected countries and investigates the strength, weaknesses, opportunities and threats associated by different groups of stakeholders with such technology-supported training methods.

Furthermore the report contains a summary of emerging practices in Europe related to the integration of technology-supported training methods within professional driver training across Europe.

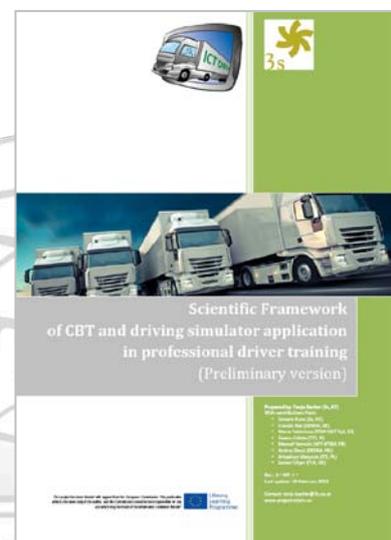


[Report on the scientific framework of e-learning and driving simulator application in professional driver training](#)

Tanja Bacher, 3s research laboratory (AT), February 2014

(preliminary version only, final revised version expected for end of 2014)

This report describes and discusses existing research results related to technology-based learning in the context of professional driver training. It especially describes instructional design considerations to be undertaken in order to ensure a high-quality implementation of e-learning and



simulator-based learning with a special focus on the facilitation of learning. The paper intentionally does not focus on technical parameters of technology-supported training but only focusses on the learning perspective.

Initial outlines of four pilot prototypes on instructional design improved e-learning and simulator-based training tools/ approaches

(not publicly available)

The ICT-DRV partners develop, test and evaluate the following four pilot learning prototypes based on instructional design principles and considerations in order to draw further conclusions on quality considerations within SBT and CBT implementation within professional driver training:

CBT prototypes:

- Pilot I testing a tutor facilitated distance learning course on load security implemented by DEKRA, DE and TCM-UGT-CyL, ES
- Pilot II testing a self-paced distance learning course incl. assessment elements on eco-driving combined with defensive driving implemented by FTA, UK and DEKRA, HU

SBT prototypes:

- Pilot I testing a group-based learning approach integrating different kinds of simulators on defensive driving implemented by DEKRA, DE and TTS, FI
- Pilot II testing a coaching approach within simulator based learning on security and comfort assurance for bus drivers implemented by AFT, FR and ITS, PL

So far the initial outlines partially including results of the initial evaluation are available. Those outlines are currently realised by the partner teams. The testing of the pilots is foreseen for April – June 2014. Further information can be requested from the project coordinator (EU-project.akademie@dekra.com) or from the implementing partners.

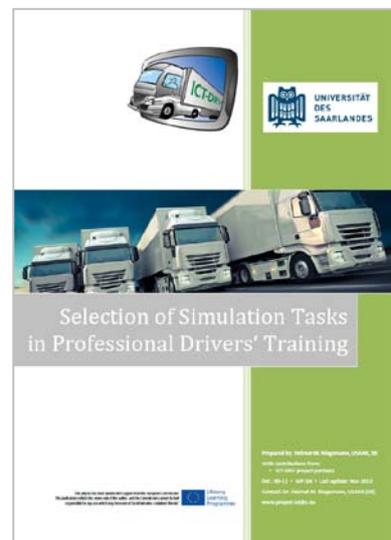
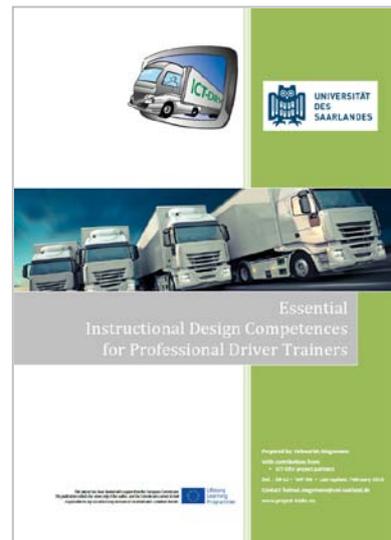


Papers on “Essential Instructional Design Competencies for Trainers in VET (Professional Driving)” and on “Selection of Simulator tasks in Professional Driver’s Training”

*Helmut M. Niegemann, Saarland University (DE),
February 2014/ November 2013
(not publicly available yet)*

Both papers relate to the abilities trainers who work with technology-based tools within professional driver training need in order to ensure a high-quality of the training. They build the basis for a draft training concept to be developed during the next months in order to educate trainers in working with e-learning and simulator-based learning solutions.

The papers are both available on request from the author or from the project coordinator. They will be published as soon as they are finalised.



A virtual environment for experts working in the field of professional driver training

available at: <http://project-ictdrv.eu/index.php?id=109>

The experts' area is a separate part on the project website containing features such as:

- Basic information on CBT and SBT application in Europe (as collected within WP1 and 2 and to be further extended)
- Emerging practices of CBT and SBT application (as collected within WP 1 and 2 and to be further extended)
- Ressources on CBT and SBT application in Europe in terms of a bibliography of relevant publications
- A forum in order to enable exchange among experts



- Further elements to be added throughout the course of the project

The experts area is about to be launched in May 2014.

[Input to public EC consultation on Directive 2003/59/EC](#)

*Claudia Ball, DEKRA Akademie GmbH (DE),
October 2013*

The ICT-DRV project coordinator DEKRA (DE) provided a first input from the ICT-DRV project to the [public EC consultation on Directive 2003/59/EC](#). The project input covers the overall approach and findings of the European projects ICT-DRV and [ProfDRV](#). The consultation contribution resulted into an introduction speech into the learning outcomes approach and the related European tools EQF and ECVET at the [Stakeholder conference on the Review of Directive 2003/59/EC](#) on 6 March 2014 in Brussels. Please find further information on this input [here](#).



All final products are available on the ICT-DRV project website (www.project-ictdrv.eu) within the results section. Summaries of the project products above are also translated into the project languages.

The following outcomes/ results have been produced/ developed for dissemination purposes:

- A **project website** at www.project-ictdrv.eu
- **Project facebook sites** primarily targeting drivers and their trainers:
_EN - www.facebook.com/pages/ProfDRV_EN/352963398053819?sk=wall
_DE - www.facebook.com/ProfDRV
- A **twitter account** (https://twitter.com/ICT_DRV)
- A **project flyer**, a **project business card** and a **project poster**
- A **project newsletter** (1st issue has been published)
- **Project press releases and news messages**

Most of the dissemination tools are intended to be published in all project languages.

4. Partnerships

The project is implemented by a trans-disciplinary partnership representing different areas of expertise for the implementation of the overall ProfDRV workplan and major key players with regard to professional driver qualification in Europe.

The ProfDRV partnership is therefore composed of vocational education and training providers, competent bodies, associations, research institutes and a publishing company based in eleven European countries (incl. those represented by associated partners) and Canada:

- [DEKRA Akademie GmbH](#), DE

DEKRA is the project coordinator in charge of overseeing and leading the overall project implementation. As coordinator they are in charge of supporting all WP leaders in their work, ensuring interfaces between the WPs as well as of the overall project monitoring. They are in addition contributing the German perspective to the project and lead the major development WP on piloting innovative training tools and approaches.

- [3s research laboratory](#), AT

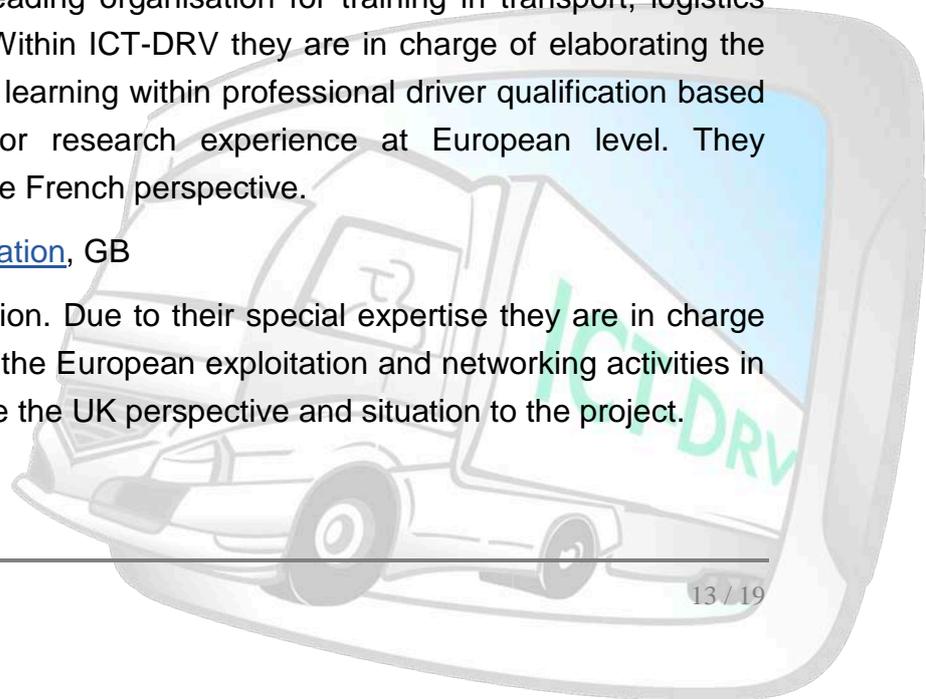
A research institute specialised in European education research incl. EQF and ECVET. They are in charge of providing the Austrian perspective on the project topics, research the scientific framework of technology-based training for professional drivers and provide overall support and guidance to the other partners throughout the implementation of the project.

- [AFT-IFTIM](#), FR

The AFT-IFTIM is the leading organisation for training in transport, logistics and tourism in France. Within ICT-DRV they are in charge of elaborating the status quo of ICT-based learning within professional driver qualification based on the outstanding prior research experience at European level. They furthermore contribute the French perspective.

- [Freight Transport Association](#), GB

FTA is a trade organisation. Due to their special expertise they are in charge of the implementation of the European exploitation and networking activities in the project and contribute the UK perspective and situation to the project.



- [TCM-UGT CyL](#), ES

TCM-UGT CyL is one of the most representative trade unions at national level in transport sector with great experience in the field of European training project within transport. They contribute the Spanish situation and perspective to the project.

- [TTS](#), FI

TTS is a research, development and training institute in Finland implementing among others training for professional drives. They are in charge of the exploitation workpackage dealing with the ICT-DRV quality indicators and recommendations for policy and praxis. TTS furthermore contributes the Finnish perspective.

- [DEKRA Akademie Kft.](#), HU

An organisation implementing training for professional drivers in Hungary. They contribute the Hungarian situation and perspective to the project and lead the project quality assurance measures.

- [Saarland University](#), DE

Saarland University contributes its special expertise with regard to instructional design by leading the trainer competences workpackage and by providing support and guidance to all other WPs related to instructional design and didactical considerations being the projects focus.

- [ITS](#), PL

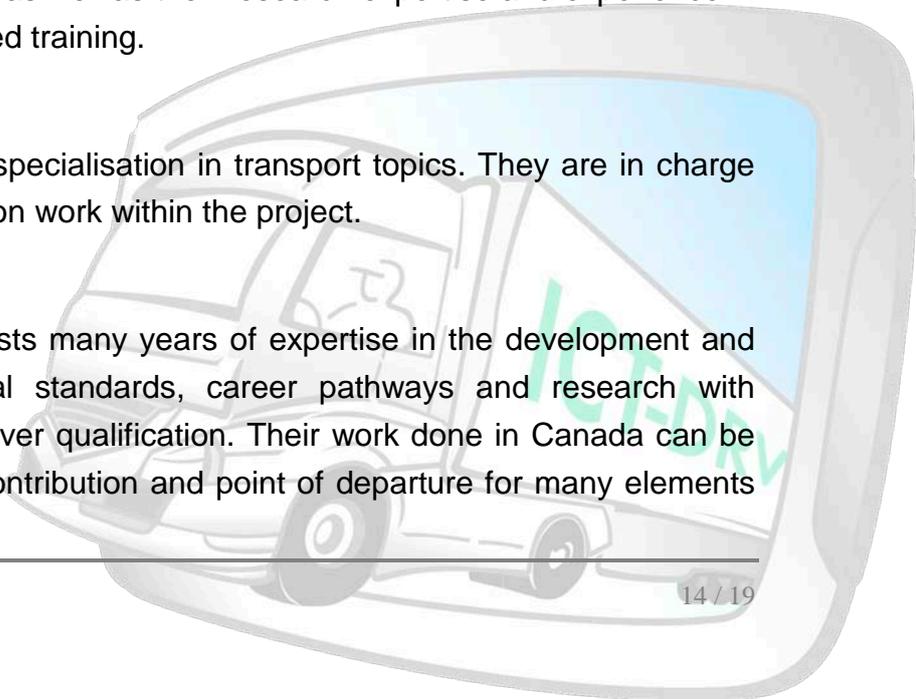
ITS is a research institute dealing with road transport and traffic issues among others also with simulator-based training questions. They contribute the Polish perspective to the project as well as their research expertise and experience in the field of simulator-based training.

- [EuroTransportMedia](#), DE

ETM is a publisher with specialisation in transport topics. They are in charge of the overall dissemination work within the project.

- [TruckingHR Canada](#), CA

TruckingHR Canada boasts many years of expertise in the development and promotion of educational standards, career pathways and research with regard to professional driver qualification. Their work done in Canada can be considered as a major contribution and point of departure for many elements



of the ICT-DRV project approach. They are providing their experiences and expertise gained in Canada to the project.

Furthermore the project is supported by a number of associated partners, who contribute their support in general and their specific expertise when need arises:

- EuroTra
- Ver.di, DE
- TYA, SE
- sfs, DE
- IAG, DE
- VTL, NL
- VTI, SE
- KMW, DE
- Remondis, DE



5. Plans for the Future

Plans for the second project half

While the first project half primarily focused on the exploration of the current situation and on investigating the status quo of praxis and research with regard to quality in technology-supported training, the second project part will be devoted to the testing and further developing of these findings in prototype technology-based learning applications in the field of professional driving as well as with regard to the training of trainers in this field. The findings will lead to quality indicators and praxis and policy related recommendations to be applied in the context of e-learning and simulator-based learning.

The following steps will be primarily implemented during the second project half:

- Implementation, testing and evaluation of the instructional design enhanced prototypes.

The currently implemented prototype outlines of innovative and instructional design improved CBT and SBT applications will be finalised and tested during the next six months in order to feed into the development of the recommendations and the quality indicators (WP5) with their results.

- Further elaboration and testing of a Training for Trainers working with technology-supported training in the context of professional driver training.

Also the already outlined Training for Trainers working with CBT and SBT will be partially implemented and tested based on the already identified ability requirements on such trainers. Also the results of this elaboration and testing work will feed into the quality indicators and into the recommendations to be developed within WP 5.

- Drawing conclusions in form of quality standards and recommendations from the overall project findings.

Quality indicators and praxis as well as policy recommendations will be developed based on the overall project findings. This will be done by an analysis of all project results and learnings to be conducted by the project partners. The draft quality indicators will be discussed in stakeholder consultations leading to praxis and policy recommendations as well as to national implementation scenarios of the quality indicators.

- Testing the quality indicators/ standards in national implementation scenarios.

Since real testing of such standards is not possible, the ICT-DRV project partners will be based on the finally proposed standards/indicators and together with input received from the stakeholders and experts develop national implementation scenarios outlining implementation possibilities within the national environment, the possible impact and effects of the standards at national level and the needs for change.

- The establishment of a dialogue among stakeholders about the topic of technology-based training within professional driver qualification.

The dialogue will be built upon a virtual platform serving as a common point of reference on the topic of technology based training within professional driver qualification, on national workshops, a European trans-disciplinary conference and continuous individual and project-based dialogue of the project partners with the different groups of stakeholders. Therefore also additional tools for dissemination will be applied during the second project half such as the regular project newsletter. However, grounds have already been laid for this dialogue during the interview rounds implemented so far by the project partners in the context of the WPs 1-3 and through dissemination activities implemented by the project partners. Those contacts will be used in order to lay grounds for a future network on the projects topic.

Plans beyond the project framework and duration

The work in WP 3 (piloting of innovative training solutions) and WP 4 (training for trainers) led to a very promising research and development idea with regard to the combination of simulator- and computer-based training based on *adaptive learning environments* that adapt to the learners performance and in this way lead to individualised learning environments. In the context of driving the combination of simulator- and computer-based learning provides an ideal combination of such an adaptive learning environment. It is planned to develop based on the project results a research and development project to be proposed for HORIZON funding in 2015.

Furthermore the project already led to a second idea for a joined European initiative with regard to the training of green skills within transport and logistics which focuses on the development of *open source design patterns for ICT-based green skill training* in the branch as a result of the pilot development work in WP 4. It is currently considered to submit this idea for the ERASMUS+ call in 2014 or 2015.

6. Contribution to EU policies

The ICT-DRV project builds upon the very successful work of the ProfDRV project with regard to its contribution to EU policies. Its overall approach builds on the implementation of the learning outcomes approach in the context of the *European Qualifications Framework* and its integration – as currently considered by DG MOVE – into the implementation of *Directive 2003/59/EC* on the qualification of professional drivers. The project therefore contributes to the implementation of both European initiatives. First very concrete results are already available in this regard. ICT-DRV submitted together with its predecessor project ProfDRV an input for the EC consultation on Directive 2003/59/EC proposing the learning outcomes approach as a possible way to overcome the weaknesses of the Directive identified within ProfDRV and ICT-DRV but also other projects and initiatives. DG MOVE took the project results strongly into consideration and invited the ICT-DRV and ProfDRV coordinator to talk about the learning outcomes approach and its implications with regard to the practical implementation of professional driver training at the EC stakeholder conference on the consultation in Brussels (BE) in March 2014.

Since the consultation and review process of Directive 2003/59/EC is currently under way and will also look into the *high-quality integration of e-learning and simulator-based learning within professional driver training*, ICT-DRV is able to provide valuable input for the sound integration of such approaches into the overall decision making process at European level and in the Member States by offering its results to decision makers and stakeholders. This has, of course, also a direct impact on the improvement of quality within VET related to professional driving.

Furthermore the ICT-DRV project strongly contributes to the “*New skills for New jobs*” initiative due to the overall characteristics of the occupation professional driving and especially the alarming shortage of qualified professional drivers in Europe. Also in this context a number of initiatives are currently implemented at European level such as a DG MOVE initiated study on skill shortages within transport and logistics that can strongly benefit from taking the ICT-DRV project results into consideration with regard to the implementation of *high-quality e-learning solutions* for logistics workers. This additionally directly targets *ET2020* with its aim to support professional driver’s employability in Europe by enriching their VET with computer- and simulator-based training that corresponds with labour market needs and by supporting lifelong learning of workers in an occupation that was long time considered being a job for low-skilled.

