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DG TREN

SIXTH FRAMEWORK PROGRAMME

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SUSTAINABLE DEVELOPMENT, GLOBAL CHANGE & ECOSYSTEMS

SUB-PRIORITY 1.6.2: SUSTAINABLE SURFACE TRANSPORT

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Retrack

REorganization of Transport networks by advanced RAil freight Concepts

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SIXTH FRAMEWORK PROGRAMME

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1 Introduction and executive summary

Work package 2 identifies the opportunities in practice and technique for the RETRACK rail freight service. Task 2.6 addresses human resources issues along the RETRACK service area with regard to all train driver personnel that needs to be certified for cross-border operations. This report addresses the human resources issues with regard to staff requirements and working time conditions for railway staff in cross-border operations that are of interest, both at present and with regard to the RETRACK pilot.

1.1 Working method

This report was based on desktop study and consultation (interviews) of operators. The following sources have served as a guideline.

1.1.1 Staff requirements:

- the DG TREN study: "Training and staff requirements for railway staff in cross-border operations1. This study has served as the model backbone for- and understanding of all legal and operational developments;
- the Hearing on the certification of train drivers in the cross border operation. This hearing gave way for the development of a TSI on cross border services and gives insight in the specific operational barriers between nations that need to be overcome;
- the COMMISSION DECISION of 11 August 2006 concerning the technical specification of interoperability relating to the subsystem 'Traffic Operation and Management' of the trans-European conventional rail system. The Annex (TSI) concerns in sections 4.2.1 specifications relating to staff;
- the DIRECTIVE 2007/59/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2007 on the certification of train drivers operating locomotives and trains on the railway system in the Community.

1.1.2 Working conditions:

- The COUNCIL DIRECTIVE 2005/47/EC of 18 July 2005 on the Agreement between the Community of European Railways (CER) and the European Transport Workers' Federation (ETF) on certain aspects of the working conditions of mobile workers engaged in interoperable cross-border services in the railway sector;
- The AGREEMENT concluded by the European Transport Workers' Federation (ETF) and the Community of European Railways (CER) on certain aspects of the working conditions of mobile workers engaged in interoperable cross-border services.

1.1.3 Consultation of operators

The consultation was carried out to see if the results of the Study by the Commission have since changed and to add information on the Dutch and Romanian situation which was not part of the Study by the Commission. This consultation of operators on staff requirements was carried out by European Bulls.

[1] D G T R E N S T U D Y B 2 7 0 2 B / E 2 / S I 2 . 3 2 7 3 8 8

1.2 Conclusion

International procedures with concern to cross border railway operations are governed by national and bilateral agreements. These agreements ultimately result in two major barriers for the cross border railway operation:

- the lack of a uniform language to carry out the train operations
    - each country requires proficiency of the national language to be able to follow training, to be able to communicate safety procedures and to take examinations
    - a certain proficiency of the local language is necessary to be able to communicate in case of an emergency and to at least contain situations
- the lack of an international driving license for train drivers
    - each country requires a valid national train driving license

In terms of working conditions, the Council directives and the sub-ordinate ETF-CER agreement can be held applicable for the RETRACK service. In most cases the general eight hours working day, 40 hours working week, rest breaks, exceptions on overtime, night shift regulations and weekly rest periods are comparable in terms of how they are applied to staff long distance trains and how is dealt with disruptions (delays). The same applies to health and safety requirements.

1.3 Recommendations

The ERTMS/ETCS system is capable of solving most of problems associated with the two major barriers on language and driver licensing mentioned before. ERTMS/ETCS is the new European standard for operability with regards to seamless cross border train control, train protection and train safety. The system has become the new European standard for railway signalling. The implementation of the system is mandatory for new lines in the Community and the implementation is rapidly picking up momentum also in the countries that are part of the RETRACK corridor. The Betuweroute running from the Rotterdam (NL) harbour to the German border has already been taken into commission with ERTMS/ETCS Level 2. This route is part of the RETRACK corridor.

It is recommended that:

the RETRACK consortium prepares, proposes and provides a certification for train drivers operating locomotives and trains on the railway systems on the RETRACK service in the Community by:

- assembling a RETRACK train driver certificate based on the EU legal framework, the ERTMS/ETCS system, the RETRACK safety system and RETRACK logistical requirements;
- asking all nations along the RETRACK corridor to ratify the RETRACK train driver certificate for the ERTMS/ETCS equipped lines, to be seen as a bilateral agreement between the nations involved on the one hand and the RETRACK consortium seen as a representative of the EC on the other. It should be noted that the certificate only holds the minimum of requirements and it is therefore necessary to decide per country what other requirements must be added.

2 Staff requirements and working conditions framework

This chapter describes and defines the legislative framework of staff requirements. The framework consists of various practical documents that provide content and legal documents that provide regulation. The following subsections will describe the documents together shaping the staff requirements framework.

2.1 Technical Specification of Interoperability (TSI)

TSI's replace former UIC rules and regulations. At this time TSI's frequently refer to UIC rules but in the future the TSI´s will become independent law. The TSI's are guidelines relating to several (sub)systems like the TSI "Traffic Operation and Management' of the trans-European conventional rail system".

2.2 Study of the Commission on cross border operations

Prior to the development of the TSI the European Commission commissioned a study[2] and a hearing[3] on the training and staff requirements for railway staff in cross-border operations. The study set the standard for addressing all relevant aspects such as qualifications, knowledge, language, health and safety requirements.

2.3 Hearing on the certification of train drivers in the cross border operation

In the Hearing document the conditions and procedures for the certification of train drivers for the carriage of passengers and goods were laid down in order to facilitate the certification of railway undertakings while maintaining a high level safety in the Community railway system. The document specified the tasks for which the competent authorities of the Member States, the train drivers and other stakeholders in the sector, in particular the railway undertakings, infrastructure managers and training bodies are responsible.

2.4 TSI Traffic Operation and Management

The TSI "Traffic Operation and Management' of the trans-European conventional rail system" resulting from this serves as a starting point for the deliverable of WP 2.6: Human resources and operations report.

2.4.1 TSI Open points

In its current version this TSI does not fully deal with all aspects of interoperability; the items which are not dealt with are classified as 'Open Points' in Annex U of the TSI. In addition to this, developments in technology, operational, safety or social requirements may make it necessary to amend or supplement this TSI. Using this TSI as a starting point does not exclude other TSI's that may be applicable to the RETRACK operation. Rail traffic currently operates under the following existing agreements:

- National
- Bilateral
- Multinational

It is important that those agreements do not hinder current and future progress towards interoperability. Specifically with regards to this Annex U the RETRACK

[2] ATKINS: Training and staff requirements for railway staff in cross-border operations; Final Report, 28 November 2002

[3] Hearing of 16 July 2003 on train drivers' certification working document EC-DG TREN-E2

project can help to clear open points and to improve the TSI as a standard and help to eradicate hindering existing international agreements.

2.5 Railway Packages

The establishment of a single market for railway transport services made it necessary to create a framework of requirements for implementing the opening up of the market and regulating it at EU level. This process has at the same time made it necessary to remove "technical" barriers to the development of trans-European transport while maintaining an optimum safety level. The Railway Packages present the Community's legislative framework for railway safety in accordance with the requirements imposed by the definition of an interoperable network, both from a technical viewpoint and that of the personnel running interoperable services. The directives on railway interoperability have made it possible to initiate the technical work necessary for defining Technical Specifications for Interoperability (TSI's), which are essential for providing pan-European railway services.

2.5.1 The First Railway Package

The First Railway Package (Railway Infrastructure Package) was aimed solely at improving the effectiveness of the existing legislation. A political agreement was reached in November 2000. The Council adopted the three directives on 26 February 2001. All Member States have implemented the provisions of the Directives in national legislation.

2.5.2 The Second Railway Package

The Second Railway Package contained a Communication and a series of proposals to further open the railway markets in the European Union. These proposals were adopted by the European Parliament and the Council of Ministers in April 2004, and have now come into force. Most of the Member States have notified their implementation measures.

2.5.3 The Third Railway Package

The Third Railway Package was adopted on 23 October 2007 by the European Parliament and the Council of Transport Ministers. The Third Railway Package concerns market opening for international rail passenger services, rail passenger rights and obligations as well as the certification of train drivers.

The Directive on certification 2007/59/EC introduces a European driver licence which will make it easier for train drivers to circulate on the entire European network (and not just on their home network as is the case now). The directive entered into force on the day following their publication. The Regulation will enter into force two years after its publication on 23 October 2009.

2.6 Working conditions

The Council Directive 2005/47/EC of 18 July 2005 on the Agreement between the Community of European Railways (CER) and the European Transport Workers' Federation (ETF) lays down certain aspects of the working conditions of train drivers engaged in cross-border services in the railway sector.

Following this Council Directive an agreement was concluded between the European Transport Workers' Federation (ETF) on the one hand and the European Railways (CER) on the other hand on certain aspects of the working conditions of train drivers in cross-border services.

3 The Commissions' Study (2002)

In 2002, the Commission commissioned a study[4] on training and staff requirements for railway staff in cross-border operations. The conclusions of the study were presented in November 2002. They highlighted the wide diversity of national legislation on certification conditions for train drivers, administrative complications resulting from this for the granting of various safety certificates to railway undertakings wishing to operate on the networks of the Member States, and associated operational difficulties in organizing cross-border services.

3.1 Additional knowledge and training

The study confirms that train crews involved in cross-border operations and personnel responsible for inspecting rolling stock from other Member States or from outside the EU and for dispatching trains with foreign train crews need additional knowledge and training. The skills required vary substantially from one country to another because of the language used, the rules governing operations and signals, knowledge of infrastructure, use of different types of rolling stock and emergency procedures.

3.2 Recommendations

Three general recommendations are made in the study:

- The need to specify and implement common minimum requirements for train drivers at European Union (or Member State) level, in particular to replace certification systems based on the practices of former railway operators.
- The need for extending interoperability to a "multi-border" approach going beyond the traditional bilateral approach.
- A recommendation to take advantage of the implementation of harmonised systems such as ERTMS/ETCS in order to simplify the training of train drivers and despatching and control-command staff.

The following more specific recommendations were made:

- specification of minimum requirements as regards medical examinations and regular check-ups;
- common specification of psychological profiles common specification of skills for personnel in cross-border operations;
- adopting a new approach to ensure follow-up of the level of competence of certified drivers;
- considering the use of a simplified communication system combined with basic knowledge of a common language; granting full operating rights to foreign train drivers when ERTMS/ECTS is active, but more restrictive operating rights in operational situations where an incident or damage has occurred;
- developing and implementing operational rules harmonised at European level.

3.3 Need for EU rules

The need to adopt EU rules on the certification of train drivers becomes obvious on reading the study's conclusions and recommendations. On the basis of the two reports from the social dialogue and the study which the Commission commissioned, and in line with its commitments, the Commission has therefore launched the consultation procedure to evaluate the feasibility of a legislative proposal in this field.

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[4] ATKINS: Training and staff requirements for railway staff in cross-border operations; Final Report, 28 November 2002.

4 Hearing of 16 July 2003 on train drivers' certification

The adoption of Community rules for the certification of train drivers would allow overcoming the difficulties stated in the study while maintaining the present high level of safety of the Community railway system. Here is the objective of this consultation document. Besides the Commission committed itself in the context of the Council political agreement on the 28th of March 2003, to present by end of 2003 to the European Parliament and the Council a proposal relating to the introduction of a European driving license for train drivers.

The Hearing document lays down the conditions and procedures for the certification of train drivers for the carriage of passengers and goods in order to facilitate the certification of railway undertakings while maintaining a high level safety in the Community railway system. It specified the tasks for which the competent authorities of the Member States, the train drivers and other stakeholders in the sector, in particular the railway undertakings, infrastructure managers and training bodies are responsible.

Following the Hearing document applicable TSI's were to be developed and a proposal on the certification of train crews operating locomotives and trains on the Community's rail network was to be presented.

5 Proposal on the certification of train crews operating locomotives and trains on the Community's rail network

5.1.1 Scope

The Commission has chosen initially to limit the implementation of this proposal for a directive to train drivers in cross-border services who effectively work in the framework of interoperability.

5.1.2 Single model for the certification of train drivers

In order to ensure that the documents certifying a person's ability to drive trains are standardised in terms of form and content, the Community, in this proposal for a Directive, defines a Community model for certification, in which the validity of the various component parts will be recognised by each of the Member States. Ideally, drivers should hold a single document in the form of a smart card (containing a chip). The card would be issued by the competent authority, while the information relating specifically to infrastructure, rolling stock and periodic checks would be stored on the chip by the competent authority or, by delegation of powers, by the railway undertaking or any other body authorised for this purpose.

During the pre-legislative consultation, however, railway undertakings resolutely opposed introducing this system immediately for the following reasons:

- the specifications for a smart card of this kind are not yet available;
- considering the number of operations required to update the card, the competent authority would be obliged to delegate these operations to railway undertakings, which would have to procure the costly equipment needed;
- it is not clear that this kind of system affords any added value, given the limited number of train drivers working on cross-border services.

The Commission is therefore proposing that the measure be implemented in two phases:

- in the short term, certification will produce two sections:
    - (a) the licence itself, a card in the same format as the European driving licence, issued by the competent authority on the basis of Community-wide criteria and recognised reciprocally;
    - (b) a harmonised certificate, issued by the railway undertaking which employs the driver, confirming that the driver has the specific knowledge required (rolling stock, infrastructure, periodic checks);
- in the longer term, the two component parts will be incorporated into a smart card, which meets operational and technical specifications to be defined through the comitology procedure.

In order to ensure that the Community legislative framework on rail safety is as consistent as possible, the authority responsible for issuing the licence will be the national safety authority which is to be established in accordance with Article 15 of the draft rail safety directive [COM(2002)21]. This authority will also be responsible

for setting up a national register of licences, which must make it possible to find the key data relating to a driver's actions to gain and upgrade skills.

If Member States apply the principle of reciprocal recognition to the licences and harmonised complementary certificates drawn up in accordance with the Community model, this should facilitate drivers' ability to move both from one Member State to another and from one railway undertaking to another. This level of mobility is essential, given the prospect of increased opening up of the rail market, and consistent with the various freedoms enshrined in the Treaty in connection with the establishment of a single market in the sector.

5.1.3 Definition of minimum requirements to obtain a driver's certificate

In accordance with what emerged from the consultation procedure and the preparatory work, the requirements include the minimum age for train drivers, criteria related to the medical and psychological fitness of candidates, their professional experience and knowledge in a number of fields related to train driving, as well as their knowledge of the infrastructure on which they will have to operate.

It should be stressed that these are minimum requirements. A Member State may, if it wishes, impose additional requirements for the issue of drivers' certificates on its territory. If, however, a train driver holding a certificate which complies with the provisions of this draft Directive needs certification in order to gain access to the territory of such a Member State, the State concerned must recognise those sections of the certificate which are equivalent to the minimum requirements defined in the Directive and can therefore impose only additional training in respect of specific infrastructure (line knowledge, signalling, operating rules, etc.).

In response to certain concerns and in order to maintain the European railway system's high level of safety, strict requirements are defined for candidates' language skills. Drivers must have a knowledge of the language(s) indicated by the relevant infrastructure manager(s) to enable them to communicate actively and effectively in routine, abnormal and emergency situations.

Retention of the certificate is subject to periodic checks of the minimum requirements necessary to ensure an optimum standard of service which meets clear safety requirements. Moreover, this draft Directive acknowledges the high standards of the training institutions and certification procedures which already exist in the Member States, but enables the authority normally competent to delegate some of its tasks. The authority continues to bear full responsibility, but may delegate or sub-contract certain tasks, provided that these tasks are carried out in a transparent and non-discriminatory fashion, without any conflict of interest.

5.1.4 Training and assessment of skills

Annex V to the proposal for a Directive defines a general training programme covering the professional knowledge required in order to obtain the licence. This programme is supplemented by training objectives relating more specifically to rolling stock and infrastructure; this is the knowledge required in order to obtain the

harmonised complementary certificate, as described in Annexes VI and VII of the proposal. Given that training opportunities are sometimes limited, Member States will have to publish the procedure for obtaining the licence and for the accreditation of the bodies responsible for training. Candidates must have access to training on a non-discriminatory basis. The Member States must also specify the procedure for checking the skills acquired by candidates. In order to ensure the utmost transparency and avoid any conflict of interest, boards of examiners must be made up of persons accredited by the national safety authority.

6 TSI Traffic "Operation and Management" of the trans-European conventional rail system[5]

Subsections 4.6 & 4.7 of this TSI apply to those staff undertaking the safety critical tasks of driving a train and accompanying a train, when this involves crossing a border(s) between states and working beyond any location(s) designated as the 'frontier' in the Network Statement of an Infrastructure Manager and included in his safety authorisation.

A staff member will not be considered as crossing a border if the activity only involves working as far as any 'frontier' locations as described above.

6.1 Staff and Trains crossing a border(s)

Subsection 4.6 concerns professional qualifications and subsection 4.7 concerns medical qualifications with concern to the safety critical tasks of driving a train in a cross border service

A train will not be considered to be a cross border service, if all the vehicles of the train crossing the state border cross it only to the 'frontier' location(s) as described above.

Minimum elements relevant to professional qualification for individual tasks can be found in annexes H, J and L.

6.1.1 Professional qualifications

In accordance with Subsection 2.2.1 of this TSI, this section deals with:

- professional competency;
- linguistic competency;
- the assessment process required for staff to attain this competency.

6.1.2 Professional knowledge

The knowledge required is the following:

- general railway operation with particular emphasis on safety-critical activity:
- principles of operation of their organisation's safety management system;
- the roles and responsibilities of the key players involved in interoperable operations;
- appreciation of hazards, especially in relation to the risks involving railway operation and electric traction supply;
- appropriate knowledge of safety-related tasks in respect to procedures and interfaces for:
  - lines and line side equipment;
  - rolling stock;
  - the environment.

[5] COMMISSION DECISION concerning the technical specification of interoperability relating to the subsystem 'Traffic Operation and Management' of the trans-European conventional rail system, *notified under document number C(2006) 3593,* (2006/920/EC), 11 August 2006

6.1.3 Professional competency

Staff (including contractors) must have professional knowledge and the ability to put this knowledge into practice safety-related duties in the following situations:

- Normal (routine);
- degraded
- emergency situations.

6.1.4 Ability to put this knowledge into practice

Railway Undertakings are required to establish a competence management system to ensure that the individual competency of their staff involved is assessed and maintained. Additionally, training must be provided, as necessary, to ensure that knowledge and skills are kept current, especially in relation to weaknesses or deficiencies in system or individual performance. This subsection also defines the requirements for the training package to be delivered in WP 5.

The ability to apply this knowledge in routine, degraded and emergency situations will require staff to be fully acquainted with:

- rules and procedures
- line side equipment
- rolling stock
- specific safety-related equipment
- safety management system
- a general ability to adapt to the different circumstances

6.2 Linguistic competency

Railway Undertaking staff whose duties require them to communicate with staff of the Infrastructure Manager in connection with safety critical matters, whether in routine, degraded or emergency situations, must have a sufficient level of knowledge in the 'operating' language of the Infrastructure Manager.

6.2.1 Level of knowledge

The level of knowledge in the Infrastructure Manager's language must be sufficient for safety purposes. As a minimum this must comprise of the driver being able to:

- send and understand messages;
- effectively communicate in the following situations:
  - routine
  - degraded
  - emergency
  - complete the forms associated with the use of the Book of Forms.

Guidance on the appropriate levels of competency is defined in Annex E.

The level of knowledge for drivers shall be at least level 3.

6.3 Initial and ongoing assessment of staff

Railway Undertakings are required to define the assessment process for their staff. It is recommended that account be taken of each of the following:

- Selection of personnel
  - evaluation of individual experience and competence;
  - evaluation of individual competence in the use of any required foreign language(s) or the aptitude to learn them.
- Initial professional training
  - analysis of training needs;
  - training resources;
  - training of the trainers.
- Initial assessment
  - basic conditions (minimum age for drivers,…);
  - assessment program, including practical demonstration;
  - qualification of the trainers;
  - deliver a certificate of competency.
- Competency retention
  - principles for retention of competency;
  - in particular, for those staff undertaking the task of driving a train, re-assessment of competence shall be undertaken at least on an annual basis
  - methods to be followed;
  - formalization of the competency retention process;
  - assessment process.
- Refresher training
  - principles for ongoing training (including language)

6.4 General health and safety conditions

Staff performing safety critical tasks must have appropriate fitness to ensure that overall operational and safety standards are met.

Railway Undertakings must set up and document the process they put in place to meet the medical, psychological and health requirements for their staff within their Safety Management System.

Examinations and assessments are undertaken as appropriate.

In respect to staff undertaking the task of driving a train, Subsection 4.7.4.2.1 of this TSI is modified as follows:

At least one systematic medical examination must be performed:

- Every 3 years for staff aged up to 60;
- Every year for staff aged over 60.

6.4.1 Medical requirements

Staff must not suffer from medical conditions or take medical treatment likely to cause:

- Sudden loss of consciousness;
- Impairment of awareness or concentration;
- Sudden incapacity;
- Impairment of balance or co-ordination;

- Significant limitation of mobility.

6.4.2 Vision requirements

The following vision and hearing requirements must be met:

- Aided or unaided distance visual acuity: 0,8 (right eye + left eye — measured separately); Minimum of 0,3 for the worse eye;
- Maximum corrective lenses: hypermetropia + 5/myopia — 8. The recognised occupational doctor may allow values outside this range in exceptional cases and after having sought the opinion of an eye specialist;
- Intermediate and near vision: sufficient whether aided or unaided;
- Contact lenses are allowed;
- Normal colour vision: using a recognised test, such as the Ishihara, completed by another recognised test if required;
- Vision field: normal (absence of any abnormality affecting the task to be performed);
- Vision for both eyes: present;
- Binocular vision: present;
- Contrast sensitivity: good;
- Absence of progressive eye disease;
- Lens implants, keratotomy's and keratectomy's are allowed only on condition that they are checked on a yearly basis or according to a periodicity set by the occupational doctor.

6.4.3 Hearing requirements

Sufficient hearing confirmed with tone audiogram, that is:

- Hearing good enough to keep a phone conversation going and be able to hear alert tones and radio messages;
- The following values given for information should be taken as guidelines;
- The hearing deficiency must not be higher than 40 dB at 500 and 1 000 Hz;
- The hearing deficiency must not be higher than 45 dB at 2 000 Hz for the ear with the worst air conduction of sound;

6.4.4 Pregnancy

Pregnancy must be considered a temporary cause for exclusion as regards of drivers in the event of poor tolerance or pathological condition.

The employer must ensure that the legal provisions protecting pregnant workers are applied.

6.5 Specific requirements regarding the task of driving a train

Regarding the task of train driving the medical examination before appointment as well as each periodic medical examination concerning staff aged 40 and older must additionally involve monitoring by ECG at rest.

6.5.1 Additional vision requirements

- Aided or unaided distance visual acuity 1,0 (binocularly); at least 0,5 for the worse eye;
- Coloured contact lenses and photo chromatic lenses are not allowed. UV filter lenses are allowed.

6.5.2 Additional hearing and speaking requirements

- No anomaly of the vestibular system;
- No chronic speech disorder (given the necessity to exchange messages loudly and clearly);
- Hearing requirements as set out in Subsection 4.7.5.3 must be achieved without the use of hearing aids. Subject to medical opinion, the use of hearing aids is allowed in special cases;

6.5.3 Anthropometrics

The anthropometric measures of staff must be suitable for the safe use of the rolling stock. Drivers must not be required or allowed to operate particular types of rolling stock if their height, weight or other physical characteristics would make this unsafe.

6.5.4 Trauma Counselling

Staff who, while performing the task of driving a train, are affected by traumatising accidents causing death or serious injuries of persons, shall be subject to appropriate care by the employer.

7 WP 2.6 inventory

The drivers that will perform duties in the RETRACK service will be selected from the labour resources of the operators involved. These drivers have all been assessed, trained and certified for national operations and will have driven trains for an extensive period of years, hence generally qualifying for the minimum ("entry") requirements for long distance or cross border operations.

Most countries that have been investigated for this report show an overall similarity in terms of training and assessment both intellectually, medically and in terms of their psychological profiles.

Drivers for the RETRACK operation will be selected from the labour resources of the operators involved. In both the present situation and in the future a general qualification is required before a driver can be entitled for any cross border operation. It is assumed that all driver training and working times on the national level will in the near future become homologated to a single European standard.

The information presented in this inventory is a collection of information that is relevant for the cross border operation only. The inventory therefore does not take into account the general hiring and assessment of staff nor general medical and psychological qualifications *at hiring*. The inventory did take into account the *monitoring* and periodical assessments of professional, medical and psychological qualifications.

The results of the inventory are presented in one table per country indicating the following:

Country	Entry qualifications for the cross border operation		reference
	qualification	procedure	standard
minimum age			
physical health			
vision			
hearing			
mental health			
language			
train driver license			
route knowledge			
rolling stock knowledge			
working time definitions			
max shift length day			
max shift length night			
minimum rest breaks			
minimum rest between shifts			
minimum weekly rest			

8 Conclusion and recommendations

8.1 Conclusion

International procedures with concern to cross border railway operations are governed by national and bilateral agreements. These agreements ultimately result in two major barriers for the cross border railway operation:

- the lack of a uniform language to carry out the train operations
    - each country requires proficiency of the national language to be able to follow training, to be able to communicate safety procedures and to take examinations
    - a certain proficiency of the local language is necessary to be able to communicate in case of an emergency and to at least contain situations
- the lack of an international driving license for train drivers
    - each country requires a valid national train driving license

In terms of working conditions, the Council directives and the sub-ordinate ETF-CER agreement can be held applicable for the RETRACK service. In most cases the general eight hours working day, 40 hours working week, rest breaks, exceptions on overtime, night shift regulations and weekly rest periods are comparable in terms of how they are applied to staff long distance trains and how is dealt with disruptions (delays). The same applies to health and safety requirements.

From a business reliability perspective, union agreements are subject to periodical review and negotiation in terms of working conditions and/or pay levels. By nature this poses the risk of labour unrest or strikes in the negotiation phase. As such it poses a risk to business reliability. Cross-border services will inadvertently bring about a discussion on comparison of working conditions between adjacent nations and could complicate or elaborate the (international) negotiation process. The agreement between the ETF and CER is in that sense an important step to mitigate the risks involved by providing a framework encompassing the specific working conditions on cross-border services in the railway sector.

ERTMS/ETCS Level 1 is an add on system to existing signalling systems with line side signals. Under ERTMS/ETCS Level 2 there is no longer use of line side signals. Although system variables may (or may not) differ between regions of the track these variables are few and comprehensible to the system. The barrier for language in the operation will be greatly reduced. As the ERTMS/ETCS Level 2 system uses numbers, colours, pictograms, sounds and a standardized terminology for components, modes and system transitions. The system can be taught in any language.

Over the course of the years that the ERTMS/ETCS system will be implemented the forthcoming changes in regulations as well as expected increase in demand for drivers may put pressure on the supply side for the training of the drivers. Although it could be argued that the training of different signalling systems will be traded equally for the ERTMS/ETCS training, the migration phase may temporarily double the demand for capacity to educate drivers for the ERTMS/ETCS system.

8.2 Technical barriers to be resolved by ERTMS

ERTMS is the new train management and control system being implemented in Europe. Parts of the RETRACK corridor are being (or will soon be) equipped with ERTMS. The system is able to solve the following technical barriers:

- national signalling **systems**: the ERTMS/ETCS system works the same in every country. The ERTMS system is capable of backward compatibility with existing legacy signalling and train protection systems by means of specific transition modules (STM).
- national organization and content of operational ***values***: the ERTMS/ETCS allows for system parameters to accommodate local operational prerequisites, e.g. seasonal, environmental or infrastructural conditions.
- national organization and content of operational ***procedures***: the ERTMS/ETCS operational procedures are largely contained within the functional specifications in combination with the operational values.
- minimising the need for linguistic competencies: the ERTMS/ETCS system is a uniform system using numbers, colours, pictograms, sounds and a standardized terminology for components, modes and system transitions. The system speaks its own language. The ERTMS/ETCS language can be taught in any spoken language.

Recommendation: ERTMS/ETCS Level 2 is capable to accommodate cross border operations dissolving the barrier of different signalling systems and circumventing to a large extent the barriers of language in the operation as well as in training. As the ERTMS/ETCS system is presently rolled out over Europe and lines equipped with ERTMS/ETCS are taken into commercial operation it is recommended that a uniform training for ERTMS/ETCS follows this roll out to ensure adequate, reliable and most efficient interoperable use of the system.

8.3 On certification

the RETRACK consortium prepares, proposes and provides a certification for train drivers operating locomotives and trains on the railway systems on the RETRACK service in the Community by:

- assembling a RETRACK train driver certificate based on the EU legal framework, the ERTMS/ETCS system, the RETRACK safety system and RETRACK logistical requirements;
- asking all nations along the RETRACK corridor to ratify the RETRACK train driver certificate for the ERTMS/ETCS equipped lines, to be seen as a bilateral agreement between the nations involved on the one hand and the RETRACK consortium seen as a representative of the EC on the other. It should be noted that the certificate only holds the minimum of requirements and it is therefore necessary to decide per country what requirements must be added.

Recommendation: to develop a training for ERTMS/ETCS Level 2 underlying a validated European ERTMS/ETCS Level 2 certification module

8.4 On route knowledge and catenaries (electrical traction power supply)

Route knowledge and catenaries are not to be considered true barriers. At least not in the sense that route knowledge and catenaries can be made obsolete. Route knowledge concerns knowledge of the characteristics of the track in terms of for example procedures for tunnels or craftsmanship with regards to train behaviour at the track's inclinations/declinations. Catenary systems are designed to fit the purpose of the track or the trains (loads) that they have to support.

Recommendation: Both route knowledge and the electrical power supply systems are to be considered standard elements of the professional training and are part of the inherent competency of the driver function.

8.5 Non technical barriers

Next to the technical barriers the following non-conformities should be resolved by a European standard for the competency of train drivers on:

- language
- medical requirements

8.5.1 Language

Language is discussed in relation to safety only. A standard language for the trans-Europan conventional rail system does not exist. Where truck drivers need only to have one passport, certificate and a driver license for the cross border operation, the train driver needs these documents for every single country.

Qualification for cross border operations consist first and foremost of proficiency in the languages of the nations concerned with focus on safety procedures.

Language constitutes the major barrier.

So far, all nations involved in the RETRACK service area have *not made any provisions* to overcome the issue of language other than to express the condition of proficiency in the national language as a prerequisite for operations on the national rail network.

This can be seen as the most profound hindering difference in comparison to aviation and short- and deep sea shipping.

The situation for the modality rail is with this regard equal to road and river transport. However for these modes of transportation much less technical obstacles and technical differences seem to be at hand.

Although it is preferred that train divers for the RETRACK service will communicate in one language, preferably English, the language also used in shipping and aviation, introducing English as a common language for train drivers implies that also the signallers (dispatchers) and traffic controllers need to switch to English. This will take a long time to realise. A start should be made with the introduction of English as the language for common procedures in case of emergencies that will allow adequate communication to at least contain situations in case of an emergency

Recommendation: to implement the ERTMS/ETCS system as a technical solution to resolve to a large extent the language barrier in the operation and to fully eradicate the language barrier on training. To apply the English language to ensure sufficient communication to contain situations in case of emergency

8.5.2 Medical requirements

In general the medical requirements and (periodical) assessments of the nations that are involved on the RETRACK corridor are not very different.

Train divers for the RETRACK service must be examined according to the top level requirements of the countries involved in the RETRACK service.

9 Tables

9.1.1 The Netherlands

The Netherlands	Entry qualifications for the cross border operation			reference
	qualification	procedure	standard	
minimum age	21			*interview Rail4Chem*
physical health		medical examination	foreign certificates valid	*IVW*
vision		medical examination	foreign certificates valid	*IVW*
hearing		medical examination	foreign certificates valid	*IVW*
mental health		psychological examination	foreign certificates valid	*IVW*
language	understand railway regulation and infrastructure	in Dutch	state examination in Dutch	*IVW*
	understand instructions			*IVW*
	understand service communications			*IVW*
	ability to write short communications			*IVW*
train driver license	valid for the service	Dutch	Dutch state examination	*Railway Act*
route knowledge	valid for the service		Train Operating Company	*IVW*
rolling stock knowledge	valid for the service		Train Operating Company	*IVW*

The Netherlands	Working time qualification	procedure	standard	reference
working time definitions				*Labour working times act*
max shift length day	10 hours			*Labour working times act*
max shift length night	9 hours			*Labour working times act*
minimum rest breaks	0,5 hours (shift <8 hours)			*Labour working times act*
	0,75 hours (shift >8 and <10 hours)			*Labour working times act*
	1 hour (shift > 10 hours)			*Labour working times act*
minimum rest between shifts	11 hours			*Labour working times act*
	14 hours (night shift)			*Labour working times act*
	48 hours (multiple night shifts)			*Labour working times act*
minimum weekly rest	36 hours (7 work days)			*Labour working times act*
	60 hours (9 work days)			*Labour working times act*

9.1.2 Germany

Germany		Professional qualifications for the cross border operation			reference
		qualification	procedure	standard	
minimum age		21			*VDV 753 07/06*
physical health			medical examination		*VDV 753 07/06*
	vision		medical examination		*VDV 753 07/06*
	hearing		medical examination		*VDV 753 07/06*
mental health			psychological examination		*VDV 753 07/06*
Language		understand railway regulation and infrastructure	in German	Train Operating Company	*VDV 753 07/06*
		understand instructions			*VDV 753 07/06*
		understand service communications			*VDV 753 07/06*
		ability to write short communications			*VDV 753 07/06*
train driver license		valid for the service	German	Train Operating Company	*VDV 753 07/06*
route knowledge		valid for the service		Train Operating Company	*VDV 753 07/06*
rolling stock knowledge		valid for the service		Train Operating Company	*VDV 753 07/06*

Germany	Working time qualification	procedure	standard	reference
working time definitions				
max shift length	10 hours planned, 12 hours actual	Law		Arbeitszeitgesetz
max shift length extended	14 hours, if a lot of idle time is included	Tariff contract	Tolerated exeption by law	Per company
minimum rest breaks	0,5 hours (shift 6 – 9 hours)			Arbeitszeitgesetz
	0,75 hours (shift >9 hours)			Arbeitszeitgesetz
minimum rest between shifts	11 hours, may be 9 hours, if compensated	Law		Arbeitszeitgesetz
minimum weekly rest	No regulation			

9.1.3 Austria

Austria		Professional qualifications for the cross border operation			reference
		qualification	procedure	standard	
minimum age		21			*interview LTE*
physical health			medical examination		*interview LTE*
	vision		medical examination		*interview LTE*
	hearing		medical examination		*interview LTE*
mental health			psychological examination		*interview LTE*
language		understand railway regulation and infrastructure	in German	state examination in German	*interview LTE*
		understand instructions			*interview LTE*
		understand service communications			*interview LTE*
		ability to write short communications			*interview LTE*
train driver license		valid for the service	Austrian	Austrian state examination	*interview LTE*
route knowledge		valid for the service		Train Operating Company	*interview LTE*
rolling stock knowledge		valid for the service		Train Operating Company	*interview LTE*

Austria	Working time qualification	procedure	standard	reference
working time definitions				
max shift length	12 hours	Tariff contract	ÖBB Contract	DBO – valid for all companies
max shift length extended	15 hours, if a lot of idle time is included	Tariff contract	ÖBB Contract	DBO – valid for all companies
minimum rest breaks	No regulation	Tariff contract	ÖBB Contract	DBO – valid for all companies
minimum rest between shifts	10 hours, may be 8 hours, if compensated	Tariff contract	ÖBB Contract	DBO – valid for all companies
minimum weekly rest	36 hours	Tariff contract	ÖBB Contract	DBO – valid for all companies

9.1.4 Slovakia

Slovakia	Professional qualifications for the cross border operation			reference
	qualification	procedure	standard	*interview LTE Slovakia*
minimum age	21			*interview LTE Slovakia*
physical health		medical examination		*interview LTE Slovakia*
vision		medical examination		*interview LTE Slovakia*
hearing		medical examination		*interview LTE Slovakia*
mental health		psychological examination		*interview LTE Slovakia*
language	understand railway regulation and infrastructure	in Slovak	state examination in Slovak	*interview LTE Slovakia*
	understand instructions			*interview LTE Slovakia*
	understand service communications			*interview LTE Slovakia*
	ability to write short communications			*interview LTE Slovakia*
train driver license	valid for the service	Slovak	Slovak state examination	*interview LTE Slovakia*
route knowledge	valid for the service		Train Operating Company	*interview LTE Slovakia*
rolling stock knowledge	valid for the service		Train Operating Company	*interview LTE Slovakia*

Slovakia	Working time qualification	procedure	standard	Reference
working time definitions				*interview LTE Slovakia*
max shift length	12 hours			*interview LTE Slovakia*
max shift length double maned	15 hours			*interview LTE Slovakia*
minimum rest breaks	No regulation			*interview LTE Slovakia*
minimum rest between shifts	12 hours			*interview LTE Slovakia*
max night shifts	No consecutive night shifts allowed			*interview LTE Slovakia*
minimum weekly rest	No regulation			*interview LTE Slovakia*

9.1.5 Hungary

Hungary	Entry qualifications for the cross border operation			reference
	qualification	procedure	standard	
minimum age	20			*interview CER Hungary*
physical health		medical examination		*interview CER Hungary*
vision		medical examination		*interview CER Hungary*
hearing		medical examination		*interview CER Hungary*
mental health		psychological examination		*interview CER Hungary*
language	understand railway regulation and infrastructure	in Hungarian	state examination in Hungarian	*interview CER Hungary*
	understand instructions			*interview CER Hungary*
	understand service communications			*interview CER Hungary*
	ability to write short communications			*interview CER Hungary*
train driver license	valid for the service	Hungarian	Hungarian state examination	*interview CER Hungary*
route knowledge	valid for the service		Train Operating Company	*interview CER Hungary*
rolling stock knowledge	valid for the service		Train Operating Company	*interview CER Hungary*

Hungary	Working time qualification	procedure	standard	reference
working time definitions				*interview CER Hungary*
max shift length	12 hours			*interview CER Hungary*
max night shifts	2			*interview CER Hungary*
minimum rest breaks	No regulation			*interview CER Hungary*
minimum rest between shifts	8 hours			*interview CER Hungary*
minimum weekly rest	No regulation			*interview CER Hungary*

9.1.6 Romania

Romania	Professional qualifications for the cross border operation			reference
	qualification	procedure	standard	
minimum age	21			*interview Servtrans*
physical health			18 – 45 years once per 2 years	*interview Servtrans*
			> 45 years once per year	*interview Servtrans*
vision				*interview Servtrans*
hearing		medical examination		*interview Servtrans*
mental health		psychological examination	18 – 45 years once per 5 years	*interview Servtrans*
			> 45 years once per 3 years	*interview Servtrans*
language	understand railway regulation and infrastructure in Romanian		state examination in Romanian	*interview Servtrans*
	understand instructions			*interview Servtrans*
	understand service communications			*interview Servtrans*
	ability to write short communications			*interview Servtrans*
train driver license	valid for the service	Romanian	Romanian state examination	*interview Servtrans*
route knowledge	valid for the service		Train Operating Company	*interview Servtrans*
rolling stock knowledge	valid for the service		Train Operating Company	*interview Servtrans*

Romania	Working time qualification	procedure	standard	reference
working time definitions				*interview Servtrans*
max shift length day	9 hours – block freight trains			*interview Servtrans*
	12 hours – other freight trains and shunting			*interview Servtrans*
max shift length night				*interview Servtrans*
minimum rest breaks				*interview Servtrans*
minimum rest between shifts	10 hours			*interview Servtrans*
minimum weekly rest				*interview Servtrans*

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