

*interoperability,
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TSI CR TA to the directive 2001/16/EC*

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TELEMATIC APPLICATIONS FOR RAILWAYS IN LIGHT OF EUROPEAN DIRECTIVE ON INTEROPERABILITY

In spite of many international initiatives till now no unification was reached in telematic applications for use in the railways at the European scale. Presently intense work is going on to establish a Technical Specification for Interoperability in Telematic Applications for Conventional Railways. As a result of approval of this specification, legal situation in the EU scale will change.

7 APLIKACJE TELEMATYCZNE DLA KOLEI W ŚWIETLE DYREKTYW UNII EUROPEJSKIEJ O INTEROPERACYJNOŚCI

Referat na wstępie przedstawia europejskie tło legislacyjne związane z wdrażaniem interoperacyjności transeuropejskiego systemu kolejowego. Następnie zaprezentowana została metodologia prac grupy opracowującej Techniczną Specyfikację dla interoperacyjności w zakresie Aplikacji Telematycznych dla potrzeb Kolei Konwencjonalnych (TSI CR TA). Przedstawione zostały przyjęte założenia oraz spodziewane terminy opracowania TSI CR TA dla przewozów towarowych i dla przewozów pasażerskich. Na zakończenie krótko omówione zostały konsekwencje dla kolei w Polsce wynikające z wprowadzenia zapisów dotyczących aplikacji telematycznych dla kolei do prawa europejskiego.

1. INTRODUCTION

Policy of European Union in railway transport is aimed at creation of one European Railway System, where owners of interoperable railway infrastructure using interoperable rolling stock will make available the railway line to the competing forwarders organizing transport of passengers and goods

For this purpose European Union first issued a Directive 91/440/EC of 29 June 1991 „On development of Union's railways” introducing division of national railways into the owners of infrastructure and railway forwarders for the purpose of establishing a “railway road market”. Because of technical and organizational complexity of railways the European Committee, in order to realize the assumed transport policy, has issued also a directive 96/48/EC of 23 July 1996 „On interoperability of trans-European system of high speed railways”, directive 2001/16/EC of 19 March 2001 „On interoperability of trans-European system of conventional railways, and the following documents supplementing the Directive 96/48: decision 2001/260/EC of 21 March 2001 „On basic parameters of a control system”,

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recommendation 2001/290/EC of 21 March 2001 „On basic parameters of trans-European system of high speed railways” and decisions from 2002/731/EC to 2002/736/EC of 30 May 2002 constituting „Technical Specifications of interoperability of trans-European system of high speed railways” for the following subsystems: infrastructure, energy, control, rolling stock, traffic and maintenance.

In June 2001 countries members of European Union (EU) have entrusted the European Association for Interoperability of Railways (AEIF) with preparation of Technical Specifications of interoperability of trans-European system of conventional railways (TSI CR) to the directive 2001/16/EC. In accordance with the decisions of the directive, TSI CR specifications have to be developed for the following systems: infrastructure, energy, control, telematics, and traffic. Work has started in October 2001.

PKP S.A. representatives are also participating in the work of AEIF groups developing specifications of TSI CR. For coordination of works of Polish party within PKP Group a Group for Interoperability has been appointed in May.

One of AEIF groups is group AEIF CR TA preparing Technical Specifications for Interoperability of Telematic Applications for Conventional Railways (TSI CR TA). In spite of many earlier international initiatives it was not possible to achieve an uniform telematic solution either in the case of electronic consignment note, or rolling stock follow up for following up of locomotives, cars and parcels and rolling stock management. Work performed by AEIF group differs from the earlier efforts in the fact that the Technical Specifications TSI CR TA, once completed, will be issued as a Decision of European Union Committee supplementing the Directive 2001/16/EC. As a result, a change in the formal and legal situation in European Union will take place.

We have to emphasize that the TSI specification for the Telematic Application Subsystem was developed for the first time for Directive 2001/16/EC concerning conventional railways but will also apply to the railway lines covered by the Directive 96/48/EC concerning high speed railways.

The diagram depicting development of European legislation for interoperability of railways is shown on Fig.1.

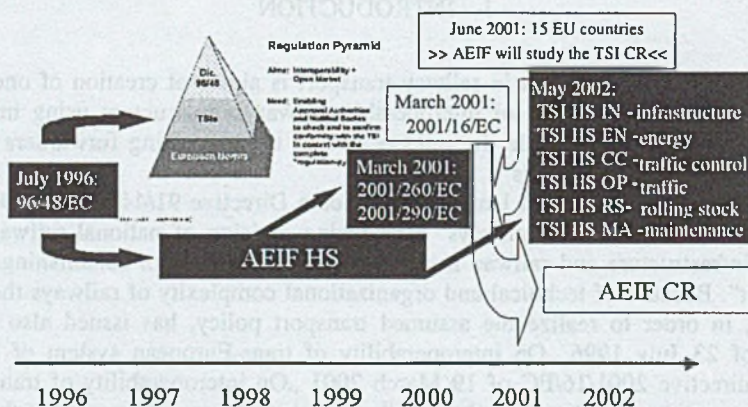


Fig.1. European legislation for interoperability of railways

2. METHODOLOGY OF WORK OVER TSI CR TA

A review of international telematics projects has been performed on the group's forum, including such projects as:

- ISR (**I**nternational **S**ervice **R**eliability for the customers,
- CroBIT (**C**ross-**B**order **I**nformation **T**echnology),
- Letto Data exchange (infrastructure management),
- RAILSERVE.

Two ways of realization of future telematic system have been taken into consideration:

1. Construction of a single system, defined from scratch for all European railways, with applications performing various functions. This system would be implemented in various language versions.
2. Taking the domestic telematic applications as a basis. For the purposes of data exchange an European data exchange platform shall be defined and realized (defined will be bases and communication interfaces).

Variant 2 was assumed for realization – a common base and definition of interfaces.

For development of TSI specifications concerning telematic applications, the following methodology was assumed:

- Identification of processes necessary for realization of railway transport,
- Determination of information flow diagram taking into account infrastructure managers (**I**nfrastructure **M**anagers – **IM**), railway undertakers (**R**ailway **U**ndertakings – **RU**) and logistic service providers (**L**ogistic **P**roviders – **LP**),
- Definition of data as required for assurance of interoperability of telematic applications,
- Development of TSI specifications concerning telematic applications.

The following assumptions have been made:

- Consideration refers to the trans-European conventional railway system i.e. lines as defined by the Committee Decision 1692/96/EC of 23 VII 1996. It means assumption that these standards in Poland will apply to the lines connected to TEN network (see Fig.3),
- Relations with the client are domains of undertakers and logistic providers. Infrastructure managers do not perform transport and have no direct contact with the clients,
- TSI in the area of telematic applications include combined trains, wagons (loaded and empty), intermodal units,
- For realization of their tasks for clients, undertakers and logistic providers sign contracts with the infrastructure managers, as well as with other undertakers and other suppliers of logistic services,
- The Infrastructure Managers will be obliged to make available information concerning available slots to the licensed operators,
- Boundaries of operating area for IM do not have to agree with the boundaries of RU or LP,
- Electronic data exchange is a must,
- TSI may refer only to the European standards in official use (CEN, ETSI and CENELEC) and specifications acknowledged by decision of European Committee (ETCS, GSM-R). TSI Specification may not refer to the documents that do not have legal validity, including

UIC sheets. It is however acceptable to copy the UIC sheets and other sheets and specifications to TSI,

- An indispensable condition for beginning the transport process is handing over of consignment note by the client.

Based on these assumptions, on the basis of dependency diagrams developed for the railways in United Kingdom, the group has prepared diagrams covering processes and information flow between the infrastructure managers, undertakers and logistic providers. The general diagram of dependencies is shown of Fig.2. Now identification of data necessary for ensuring interoperability in telematic applications is going on, using diagrams as basis.

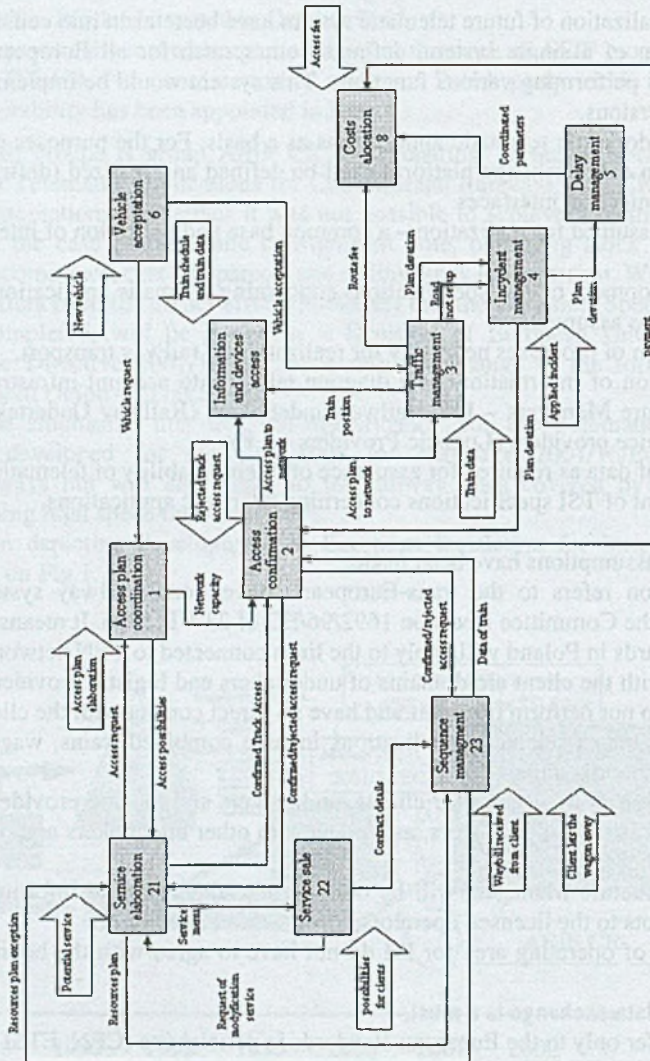


Fig.2. General dependency diagram of infrastructure managers, operators and logistic service providers assumed by AEIF CR TA group

3. CONSEQUENCES FOR RAILWAYS IN POLAND

The European Union's strife to establish a single European railway system based on the principle of making available the interoperable way to perform transport using interoperable rolling stock with application of market principles is today a fact. A question arises: what are the consequences of access to the European Union for Polish railways?

The basic issue is a scale of adaptation of railways in Poland to the requirements of European Union. In EU, Specifications TSI CR apply to the trans-European network of conventional railways (Trans-European Network – TEN) as defined in the Committee Decision 1692/96/EC of 23 VII 1996. Within access negotiations between Poland and European Union, Polish railways have been established to be included into the European network till 2010. This network is shown on Fig.3.



Fig.3. Polish TEN network

Where telematic applications are concerned, the following shall be ensured: follow up of trains and loads as well as full handling of electronic consignment note in accordance with the TSI specifications for Telematic Applications. Development of this specification is divided into two stages. First stage applies to the transport of goods and in accordance with the mandate of European Committee for AEIF it is due before the end of first quarter 2003, Second stage concerns Telematic Applications for passenger transport and it should be due before end of third quarter 2003

Simultaneously with AEIF works also work is going in the Interoperability Team, whose main purpose is a current analysis of European studies over the technical specifications

for interoperability of Trans-European system of conventional railways and coordination of work of PKP SA representatives within AEIF. Next year the work concerning specifications of TSI CR TA will enable development of strategy of interoperable solutions concerning telematic applications complying with prepared European legislation also in Poland.

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