



Review of the current situation of TSI TAP implementation in Poland

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ABSTRACT

This Technical Specification of Interoperability refers to the passenger carriage subsystem of the trans-European conventional railway system. This TSI relates to different aspects of passenger carriage, including providing passengers with information before and during their travel. This paper shows the proposed range of TSI TAP use, as well as the state of adaptation to the requirements of TSI TAP of the currently operating computer systems.

KEYWORDS: European railway legislation, interoperability, TAP – Telematic Applications for Passenger Services

1. The genesis and the legislation basis of TSI TAP

First steps to create a unified European railway system were taken in 1989 on the whole European Union scale. The most important legislation regulations regarding interoperability are the following:

- Directive 96/48/EC on the interoperability of the trans-European high-speed rail system
- Directive 2001/16/EC on the interoperability of the trans-European conventional rail system

Directive 2001/16/EC specifies subsystems for which basic requirements are defined; the requirements refer to security and safety, reliability, technical compatibility and health and environment protection. The rules of achieving unified standards and methods of implementing them are described in the Directive, in documents called the Technical Specifications of Interoperability (TSI). Within the TSI for Conventional Railways the following Subsystems have been specified:

- INF – infrastructure (railroads, engineering structures)
- ENE – energy (vehicle powering, traction hanging, power receivers)
- CCS – command and control systems (signalling)
- RST – rolling stock (passenger and freight)
- OPE – traffic operation (regulations, organisation, operation)
- TAP & TAF – telematic applications (TAP CR for passenger traffic and TAF CR for freight traffic)

2. The essence of TSI TAP

Creating a reliable infrastructure for data gathering, transmitting and changing is a significant issue in modern transport systems. The infrastructure will allow railway carriers a quick access to the railroad and following the vehicle on the railroad network.

The specification relating to the telematic application subsystem will define data bases and interfaces necessary

for information exchange. The information exchange is necessary to provide unified means of passenger and cargo carriage service. It will be necessary to develop applications for the Polish railways in order for them to be able to use these interoperable data bases.

Many parameters have been defined for which the format of the necessary data has been specified in the telematic application subsystem. From the passenger's needs point of view the most important parameters are:

The train's location – this parameter describes information passed on to the carrier by the railway infrastructure manager, or passed on between particular infrastructure managers involved in the transport process, at agreed report points. This information contains the train's last location according to the travel schedule and includes information about delays along the route with the delay's reasons.

The estimated travel time – this parameter describes information passed on to the carrier by the railway infrastructure manager, or passed on between particular

infrastructure managers involved in the transport process, at agreed report points. The information contains the estimated time of arrival to specific points, for example the point of exchange of particular railway carriers.

Service information (about traffic disturbances)

– this parameter describes information sent by the railway infrastructure to all concerned regarding the reasons for delays on the entire route for a particular train.

The technical specification of interoperability TSI TAP CR refers to the passenger carriages of the trans-European conventional rail system. In particular it refers to the following issues:

- providing information before and during the passenger's travel;
- reservation and payment systems;
- luggage management;
- managing communication between trains and other means of transport;
- purchasing tickets in ticket offices, ticket machines, via phone, internet and other data transmission systems;

Types of activities		State of realisation
Before the travel the following information should be available:		
General conditions for carriages provided by the railway industry, the responsibility of the industry for timetables and tariffs		The carriage law is available but it isn't displayed enough.
Conditions of availability for persons with reduced mobility, bikers, car carriage		There is limited infrastructure availability for persons with reduced mobility and bikers (a small number of trains and station is already equipped). There is a limited availability to information in this range.
Luggage carriage conditions		The information is not properly displayed
Timetables and journey planning, including the fastest connection, the one with the least switches and the cheapest.		The information is available via phone and internet. It is also shown on some stations and stops.
Timetables including availability for smokers, non-smokers, first and second class, couchette and sleeping spaces and on-board services.		It is partially available in places, where the carrier shows the train composition.
Modernisation activities on the railway network which can disturb the train traffic (for example track closings, works, detours)		Lack of complex information based on the interface between the railway infrastructure manager and the carriers.
During the travel the following information should be available:		
About stations and stops on the route.		Information is provided in: PKP Intercity, SKM Warszawa and in some PKP Przewozy Regionalne and Koleje Mazowieckie trains
About the delays and disturbances in traffic		Due to the lack of communication, there is not a system solution. The main obstacle is the current train numeration rules (the possibility of different trains with same numbers occurring)
About communication with other means of transport		It is available only in some PKP Intercity trains (international trains), in the form of a leaflet.
About reservation and payment system and the possibility of transactions between different ticket distributors		Partially available in PKP Intercity (credit card payment system and in the Internet). On the train stations, it is possible to purchase tickets for trains for the whole journey, independently from the carrier. In the internet, it is possible to purchase a ticket only from one carrier.
Luggage management		None
Management of communication between trans and other means of transport		Lack of a formal system,

Types of activities	State of realisation
Ticket purchasing in ticket offices, ticket machines, via phone, internet or data transmission systems	Purchasing tickets on all railway stations and some stops in ticket offices, on large stations it is possible to buy tickets in ticket machines for regional trains (PKP Przewozy Regionalne, Koleje Mazowieckie), and available internet ticket purchasing for PKP InterCity
TSI TAP defines the structure of provided data regarding the following issues:	
Timetable (the railway industry provides other industries and authorised third parties with its' timetable)	Currently it is provided by a company from the PKP Group (TK TELEKOM)
Tariffs (the railway industry provides other industries and ticket office agents with its' international tariff)	The tariffs are shown on every carrier's website, and the price of the tickets is shown in the Internet timetable.
Product (the railway industry provides data regarding the operator's name, code and website)	Available on PKP SA website.
Carriage conditions (the railway industry publishes the general carriage conditions)	Available on carriers' websites.
Luggage packages carriage	Available on carriers' websites.
Lodge complaints (including ones via phone, Internet, e-mail, fax, post)	The information about complaints is available on every carrier's website.
Persons with reduced mobility carriage conditions	Information is available in the internet timetable, but the information is not displayed enough.
Bicycle carriage conditions	Information is available through information on train stations, the carriers' websites, in the internet timetable, but it is not displayed enough.
Car carriage conditions	No such offers
Reservation availability	Available for trains with seat reservation on railway stations and in the internet.
Product electronic distribution security and safety state	The level of security and safety is on the same level as other internet payments.
Station information	Is provided on large stations, in large towns and cities and on junction stations
Train composition	PKP InterCity publishes the information in a very limited range on its websites, PKP Przewozy Regionalne publishes in supplements, which are not available on a large scale.
Train traffic flow prognosis	No information from the controller (lack of proper communication), the information is available only for the train crew on the base of the timetable analysis.
Short-term changes in the timetable (including dynamic route reservation)	None
Reference data (infrastructure limitation database, rolling stock database, timetable data base, tariff database)	Absolutely unavailable for the passengers.

3. Detailed requirements included in TSI TAP

TSI TAP should be considered in the context of the Regulation (EC) No 1371/2007 of the European Parliament and of the Council of 23 October 2007 on rail passengers' rights and obligations. The obligation to provide passengers' information resulting from the Regulation covers the ergonomics contained in TSI TAP.

This Regulation comes into effect 24 months after publication, that is on 3rd December 2009, however it allows applying up to three five-year transitional periods with reference to internal railway passenger carriages.

The information provided before the travel should include the following issues:

- general conditions of carriages provided by railway companies, the companies' responsibility for timetables and tariffs

- conditions of availability for persons with reduced mobility, for bickers and car carriages
- luggage carriage conditions
- timetables and journey planning, including the fastest connection, the one with the least switches and the cheapest
- timetables including availability for smokers, non-smokers, first and second class, couchette and sleeping spaces and on-board services,
- activities which can delay or disturb the travel (for example track closings, works, detours) – interface between TSI TAP and TSI TAF,

The information provided during the travel:

- stops and stations along the route
- delays and traffic disturbances
- communication with trains and other means of transport

The reservation and payment system should allow transactions between different ticket distributors as well as reservation and payment for the travel chosen by the passenger.

Luggage management will provide the passengers information about the conditions of luggage packages sending and receiving.

Managing communication between trains and other means of transport should provide communication and provide information about the connections while planning and during the travel.

The ticket purchasing information service will allow exchanging data between the ticket distributors and railway industries, it will also allow ticket purchasing in ticket offices, ticket machines, via phone, internet or other data transition systems, on-board and with electronic tickets.

TSI TAP defines the structure of accessed data regarding:

- timetable (the railway industry provides other industries and authorised third parties with its' timetable)
- tariffs (the railway industry provides other industries and ticket office agents with its' international tariff)
- product (the railway industry provides data regarding the operator's name, code and web site)
- carriage conditions (the railway industry publishes the general carriage conditions)
- luggage packages carriage
- lodging complaints
- persons with reduced mobility carriage conditions
- bicycle carriage conditions
- car carriage conditions
- reservation availability
- electronic distribution security and safety state of products
- station information
- train composition
- train traffic flow prognosis
- short-term changes in the timetable (including dynamic route reservation)
- reference data (infrastructure limitation database, rolling stock database, timetable database, tariff database)

4. Current state of requirements realisation included in TSI TAP in Poland

A great importance and progress in increasing the level and the availability of information in Poland will happen when a new information system is implemented. This system is developed by TK Telekom and its working name is SITKOl (railway transport service information system)

The aim of SITKOl is to facilitate information flow between companies, institutions, offices and railway customers. It will be possible through start of a wide range channel media dialogue platform, which will be destined for different functions depending on the user's needs.

The first stage of SITKOl project realization will be to implement a pilot test program in the Warsaw agglomeration area. The first elements of telematic applications will be introduced within this project. These elements will allow the passenger to plan the travel and gain information regarding train communication before, after and during its duration. Mobile reservation and travel payment systems, and creating passenger service systems on railway stations will also be implemented within this project

A detailed up-to-date activities realisation plan in the TSI TAP functionality is show in the table presented below.

Bibliography

- [1] The technical specification for interoperability relating to the subsystem Telematic Applications for Passenger Transport of the Trans-European Conventional Rail System
- [2] Regulation (EC) No 1371/2007 of the European parliament and of the council of 23 October 2007 on rail passengers' rights and obligations

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