INTERNATIONAL UNION
OF RAILWAYS

UIC SECURITY PLATFORM

SECURITY BIRC WORKING GROUP

Security of railway border crossing
within the East-West railway corridor

CONTENTS

○ Introduction

Ensuring public security is a particularly important issue in rail transport. One of the major problems in this area is public security at railway border crossings.

Ensuring both physical and public security is an important factor for competitiveness of transport of goods and people. It therefore seems appropriate to develop railway transport security systems, especially at railway border crossings, which are important elements in the transport process within the Eurasian corridor.

Given the uncertain international situation, global terrorism threats, conflicts, organised crime, failures and natural disasters, appropriate preventive measures must be taken and high standards set for security systems in the railway corridor connecting Europe with Asia in order to ensure efficient, safe and reliable transport services.

System complexity

Transport development depends on many factors, one of which should be a sense of security in the transport of goods and people that involves crossing borders between countries with different political and economic systems. Security systems at border crossings should ensure regular monitoring of security for the occurrence of various types of threats. Social and cultural aspects should be taken into account, bearing technical and physical security in mind when constructing and organising border crossings. This kind of approach to security will contribute to efficient transport and ensure that railway border crossings are adequately prepared for safe handling of people and goods in spite of the barriers and differences involved.

The UIC leaflet focusses on analysis of the factors that influence security at border crossings, taking into account issues such as competitiveness affected by transport times, security and effectiveness of procedures at railway border crossings.

The analysis of security at railway border crossings takes into account indicators based on the information available on border crossings, as well as identification and monitoring of threats. Broad and multi-faceted treatment of security is a current global trend. Satisfaction amongst those involved in transport is vitally important; the indicators that may be measured in this regard include effectiveness, time and costs.

In addition to technical security measures, attention should be paid to the role of services ensuring public order and security. A well-organised security system should be created in conditions that ensure protection of goods and people and should be able to respond appropriately if a crisis situation occurs.

The UIC leaflet proposes hypotheses that set out: effective security at border crossings, proper functioning of border crossings, use of applicable legal and security systems, and dependencies between the socio-economic factors affecting security.

The aim of this study is to present the issues affecting security in transport of goods and people at railway border crossings on the Eurasian transport corridor on the route: France – Belgium – Germany – Czech Republic – Poland – Ukraine – Belarus – Russia – Kazakhstan – China.

⭘ Factors that affect the general security of railway border crossings in individual countries within the Eurasian railway corridor

In the context of the challenges of the 21st century and extensive globalisation, a crucial issue for global economies is to eliminate barriers to rail transport by building bridges for the safe transport of people and goods by rail, especially at key locations as border crossings.

Rail transport security depends on a number of factors. In particular, it is affected by the technical condition of the railway infrastructure, rolling stock and facilities, organisation of railway traffic and transport, geographic location, and national territorial defence systems. When evaluating rail transport security and security at railway border crossings, one of the main indicators is the number of events that have occurred and number of existing threats, with an analysis of their causes and effects.

Organisation of international railway transport requires use of the latest techniques and knowledge of modern systems to support implementation and evaluation of processes for training staff directly involved in railway transport.

Political and economic factors

The main railway lines in the Eurasian transport corridor are expected to meet the standards specified in the European Agreement on Main International Railway Lines (AGC) and the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC).

The Eurasian transport corridor is a series of railway transport infrastructure elements, including transport hubs and lines of international significance with optimised technical parameters. The corridor includes railway lines running from east to west.

The Eurasian transport corridor facilitates the geopolitical and economic interests of many countries in Europe and Asia. Having analysed the flow of goods between European and Asian countries, all of the railway organisations involved in the corridor defined the main directions (corridors) for rail transport in the countries concerned.

In respect of the European part of the Eurasian transport corridor, the Schengen Agreement was concluded in 1985, abolishing controls at the internal borders of a number of member states.

Schengen

The Schengen area is a territory in which checks at internal borders have been abolished and where strictly defined uniform rules are applied. These rules relate to checks at external borders, visas issued to foreign nationals mutual cooperation between the services of the signatory Schengen states, particularly with regard to police and judicial cooperation in criminal cases, and the operation of the Schengen Information System.

The Schengen Agreement is a basic legal act on gradual abolition of checks at common borders, signed outside the institutional system of the European Communities by its five member states: Belgium, France, the Netherlands, Luxembourg and Germany. Its initial purpose was to facilitate border crossing by persons travelling between the signatory states. Crossing internal borders without checks became possible only after the convention implementing the Schengen Agreement was signed in 1990.

The Convention implementing the Schengen Agreement establishes uniform rules concerning checks at external borders and introduces the so-called compensatory measures, which were aimed at levelling the "deficit of security" resulting from the abolition of checks at internal borders. The most important of these include:

- unification of standards relating to checks at external borders, including visa requirements and conduct towards foreigners;
- harmonisation of legislation in the field of asylum policy;
- closer cooperation between national police services, particularly within the scope of hot pursuit and cross-border observation;
- judicial and administrative cooperation concerning, inter alia, extradition and execution of criminal sentences;
- uniform policy with regard to trafficking of drugs and other intoxicants as well as possession and trafficking of firearms and ammunition;
- creation of the electronic Schengen Information System (SIS), providing access to data enabling identification of persons and property.

The Schengen Convention entered into force in 1995 and was incorporated into the legal framework of the European Union by the Amsterdam Treaty of 1997, which integrated the Schengen acquis into Community law. The Amsterdam Treaty entered into force in May 1999, and since then the regulations of the Schengen acquis, which is still being developed within the legal and institutional framework of the European Union, have been applied within the Community order.

Apart from the Schengen Agreement and the Convention implementing the Schengen Agreement, the Schengen acquis also includes:

- the Accession Protocols and Agreements to the Schengen Agreement of 1985;
- the Implementing Agreement of 1990 with Italy (signed in Paris on 27 November 1990), Spain and Portugal (signed in Bonn on 25 June 1991), Greece (signed in Madrid on 6 November 1992), Austria (signed in Brussels on 28 April 1995) and with Denmark, Finland and Sweden (signed in Luxembourg on 19 December 1996), together with the Final Act and the Joint Declarations;
- the decisions and declarations adopted by the Executive Committee established on the basis of the provisions of the Schengen Implementing Agreement of 1990;
- acts adopted by the bodies granted decision-making competences by the Executive Committee to enforce the Schengen Implementing Agreement (approximately three thousand pages).

The United Kingdom and Ireland decided to maintain checks at the borders with other EU member states, but they may apply certain provisions concerning police and judicial cooperation in criminal cases.

Schengen area countries

Countries associated states applying the Schengen regime

The membership states of the European Union (EU) that are outside the Schengen area

Abolition of checks at internal borders

The abolition of checks at internal borders means that there are no border checks at the borders between EU member states in the Schengen area. The border crossings at the internal borders of the Schengen area have been eliminated and it is possible to cross them at any time in any place.

Consequences

No border checks are carried out at the borders between the Schengen states, the so-called internal borders of the Schengen area. Neither EU citizens nor third-country nationals are subjected to checks at internal borders in the Schengen area. Non-EU citizens require a passport to cross external borders. Visas are also required for some third countries.

Abolition of border checks does not mean that administrative borders have been abolished. Administrative procedures in individual member states, e.g. registration of citizens, remain in force. Due to immigration and visa regulations, it is advisable to carry an ID confirming citizenship of a European Union member state (a valid passport or ID card in the case of Polish citizens). Though not conducted at borders, identity checks may be conducted at random across the whole Schengen area.

In the event of a serious threat to public order or public security, a safeguard clause authorises each member state, subject to relevant decision by the EU Council, to temporarily restore checks at its borders with other Schengen countries.

Reintroduction of the EU border controls

- Schengen Membership States of the European Union
- Borders of Schengen zone
- Reintroduced of border controls
- France has reintroduced the border controls due to entered of emergency state
- Controls in the ferry ports
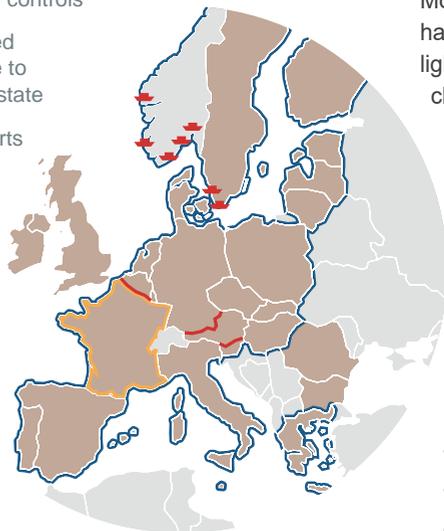
Schengen Information System

Countries joining the Schengen area were required to modernise their railway border crossings. These efforts improved not only "tightness" at border crossings, but also enhanced passenger security and created a clearer distinction between local and international traffic. Existing border crossings were modernised. Modernisation work covered, among other things, platforms for handling international traffic, tunnel passages, and fencing and lighting in station areas. The time taken to conduct passenger checks and the time required for train stopovers at border stations was reduced. The Eurasian transport corridor was created as one of the elements of a coherent transport infrastructure.

The Schengen Information System (SIS) is a common electronic database of wanted persons and objects. Consisting of country modules, its central unit is located in Strasbourg. Data entered into the system by one member state is available for services and authorities in other countries to the extent required. This system ensures exchange of information between the services responsible for:

- border protection;
- visa issuance;
- public security.

When crossing external borders or during standard police checks using the SIS, checks may be carried out to determine whether an object (e.g. a car) or a person appears in the common database. If an individual is wanted by the services of a country that is a party to the Agreement, an appropriate procedure is applied which may result, for example, in police action or in denying a given person who is a citizen of the third country the right to enter the territory of the Schengen area. At present, work is underway with the aim of developing a new version of the Schengen Information System, the SIS II.

RUSSIA

BELARUS

KAZAKHSTAN

KYRGYZSTAN

ARMENIA

Eurasian Union

The Eurasian Customs Union, known until 1 January 2015 as the Customs Union of the Republic of Belarus, the Republic of Kazakhstan and the Russian Federation (in Russian: *"Таможенный союз Беларуси, Казахстана и России"*) is an international agreement on establishment of a single customs area, signed by Russia, Belarus and Kazakhstan. The Customs Code between the signatory states was signed on 27 November 2009. The Union has formally existed since 1 January 2010, while the Customs Code has been used in trade relations between Russia and Kazakhstan since 1 July 2010 and with Belarus since 6 July 2010. On 1 January 2015, Armenia and Kyrgyzstan joined the alliance, which caused its name to be changed to the Eurasian Customs Union.

The Eurasian Economic Union began its function on 1 January 2015 on the basis of the Customs Union and the Single Economic Area.

The treaty, in its essence, should function on a principle similar to that of the European Union, ensuring free movement of goods, services, capital and labour. The Parties have also committed to implementing the agreed policy in the key sectors of the economy – the power, industrial, agricultural and transport sectors.

The treaty obliges its signatories, inter alia, to ensure free movement of goods, services, capitals and labour. Russia, Belarus and Kazakhstan will also apply uniform macroeconomic, antitrust, monetary and financial policies. The document does not mention the introduction of a common currency. However, it assumes that a common financial mega-regulator will have been created by 2025. Furthermore, common markets for natural gas and crude oil are to be created in 2025.

A certificate from the Customs Union is obligatory for importation of goods into the customs area. The aim of this measure is to eliminate technical barriers, such as compulsory certification in trade between the three countries, as well as a reduction in the number of mandatory technical procedures in the import/export of goods into/from the territory of the Customs Union. The Customs Union's certificate of conformity can be used for the export of goods to each of the countries – Russia, Belarus or Kazakhstan.

The certificate is also valid in each country. As a result, all companies can export their goods to each country on the basis of a single certificate of conformity. The Customs Union's certificate replaces the international certificates of conformity of Russia, Belarus and Kazakhstan.

Agreement between Russia and Finland

Finland and Russia have agreed to intensify cooperation. Although the Finnish eastern border is the external border of the Schengen area, both Finland and Russia want to deal with the programme mostly on a bilateral basis.

Due to illegal migration, Russia and Finland have decided to introduce temporary restrictions for citizens of third countries at two border crossing points.

Finland has maintained contact with the Soviet Union (and later Russia) since the 1960s on the basis of the cross-border cooperation agreement, with Finnish and Russian border guards cooperating with each other to control the border.

12 million tonnes of goods were transported between Russia and Finland from January to October 2014. This is almost 9.5 per cent more than in the same period of the previous year. Both countries also continue to cooperate within the scope of railway passenger transport.

Transport of goods is facilitated, *inter alia*, by electronic clearance introduced in May 2016, which reduced the time required for the process from 60 to only seven minutes. These countries intend to extend the catalogue of goods with electronic clearance.

VR Sr2 electric locomotive
Photo by Jarkko Voutilainen

Effective border control would not be possible without close Finnish-Russian cooperation. This cooperation is based on the Agreement on Border Cooperation signed in 1960, which was updated in 1997 by way of an additional protocol. The Agreement describes in detail the procedures for mutual cooperation and the rules of conduct in emergency situations. Both countries work together on a system of efficient information exchange, using the latest technologies for this purpose. Direct phone and fax lines between the regions have been installed. Crucially, representatives of both parties meet several times a year. Frequent meetings at various levels are conducive to building mutual trust and facilitate practical, day-to-day cooperation.

The France – Belgium – Germany – Poland – Belarus – Russia – Kazakhstan – China railway corridor is of fundamental importance for transport of people and goods in Eurasia. Countries which, under the Schengen Agreement, have abolished checks for people crossing the borders are located along the railway corridor. The other countries have implemented a number of other legislative initiatives that enable easier and unhindered crossing of borders.

Finland has a broad-gauge railway network with a track gauge of 1,524 mm, which is connected via a single border-crossing station to Sweden's standard-gauge (1,435 mm) railway network.
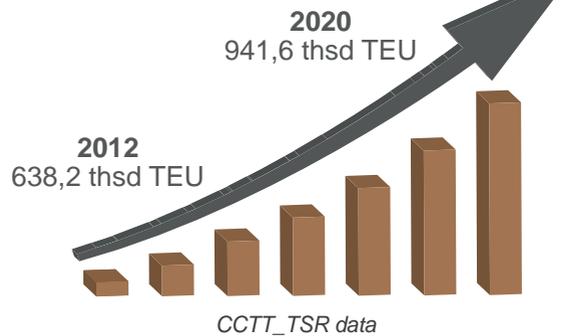
Finland is connected at four border-crossing stations to the Russian network, which already has the "new" track gauge of 1,520 mm. In spite of this, the difference in track gauge of only 4 mm enables reciprocal exchange of the rolling stock. Out of four border crossings, only one in Vainikkala/Буслосвская (Busloswskaja) is electrified with a voltage of 25 kV 50 Hz AC on the Finnish side and 3 kV DC on the Russian side. Due to its location, only international passenger trains connect Finland with Russia. The overhead catenary line power supply system is modified at the border station.

Dual-system train sets are used on the Helsinki-St. Petersburg service and do not require a locomotive change at border stations. The trains are driven by the local railway operator in each country – VR in Finland, and RZD in Russia. The main considerations include the need to adapt to operation under two power supply systems and the need of install two railway traffic protection systems used in the individual railway networks. The trains are manufactured in accordance with western standards, which means that cars without compartments are used, a smoking ban is applied in the entire train set, and carriages are adapted to meet the needs of people with disabilities. Due to the international character of the train, it is equipped with a passenger information system providing information in Finnish, Russian and English. A company was set up in order to run the service between the two countries; both VR and RŻD railways are shareholders. Travel time has been reduced by modernising the existing railway line and by eliminating the long stopover associated with border clearance. Activities related to clearance have been transferred to the train itself, which has been equipped with special facilities for uniformed services.

Forecast of cargo transportation volumes via the TSR by 2020

TRANSSIB: Europe - Asia

2020
941,6 thsd TEU

2012
638,2 thsd TEU

CCTT_TSR data

Social and economic factors

In recent years, a slight upward trend has been observed in railway transport. The railway transport market is opening up gradually and an upward trend can be expected until 2030. This is due to structural changes associated with an increase in demand for transport of highly processed goods, which in turn results in an increase in combined and container transport. It should also be noted that demand for transport is closely linked with economic development.

The Eurasian railway transport corridor is an important driver of social and economic development. It contributes to:

- reduction of disparities between levels of economic development in different regions (by increasing attractiveness and creating favourable conditions for prospective investors, attracting supporting investments e.g. in service infrastructure, etc.);
- industrial development;
- mitigation of certain social and economic problems such as unemployment;
- improving transport availability;
- increasing mobility of people;
- reducing costs, increasing travel security and comfort and ensuring smooth traffic;
- stimulating cooperation in border regions;
- stimulating international commodity exchange (particularly by developing international transport connections and eliminating obstacles at border crossings, facilitating free movement of goods and people), as well as development of international cooperation.

International railway corridors are created and developed with the objective of creating a transport network that will ensure rapid, safe transport of people and goods. Such networks will support the economic growth of countries and regions. The Eurasian corridor is just one example.

The importance of railway transport infrastructure in the Eurasian corridor for socio-economic development, balanced development of individual countries and regions and economic cooperation have prompted many countries to take initiatives aimed at the development of the East-West corridor. These initiatives support infrastructure development and help to align infrastructure development in different countries.
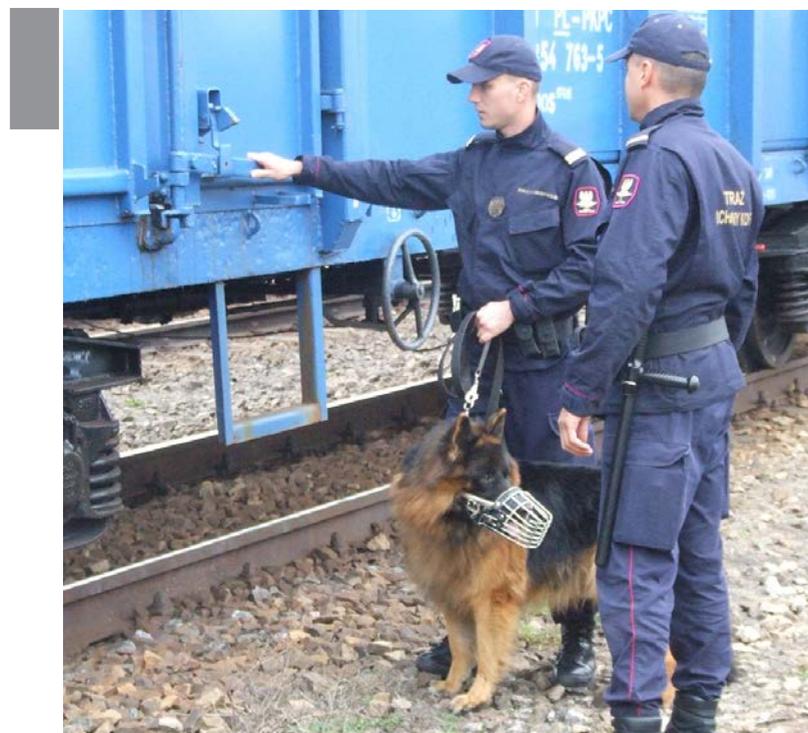
Another important element is the modernisation of border crossings which can be bottlenecks in the transport system.
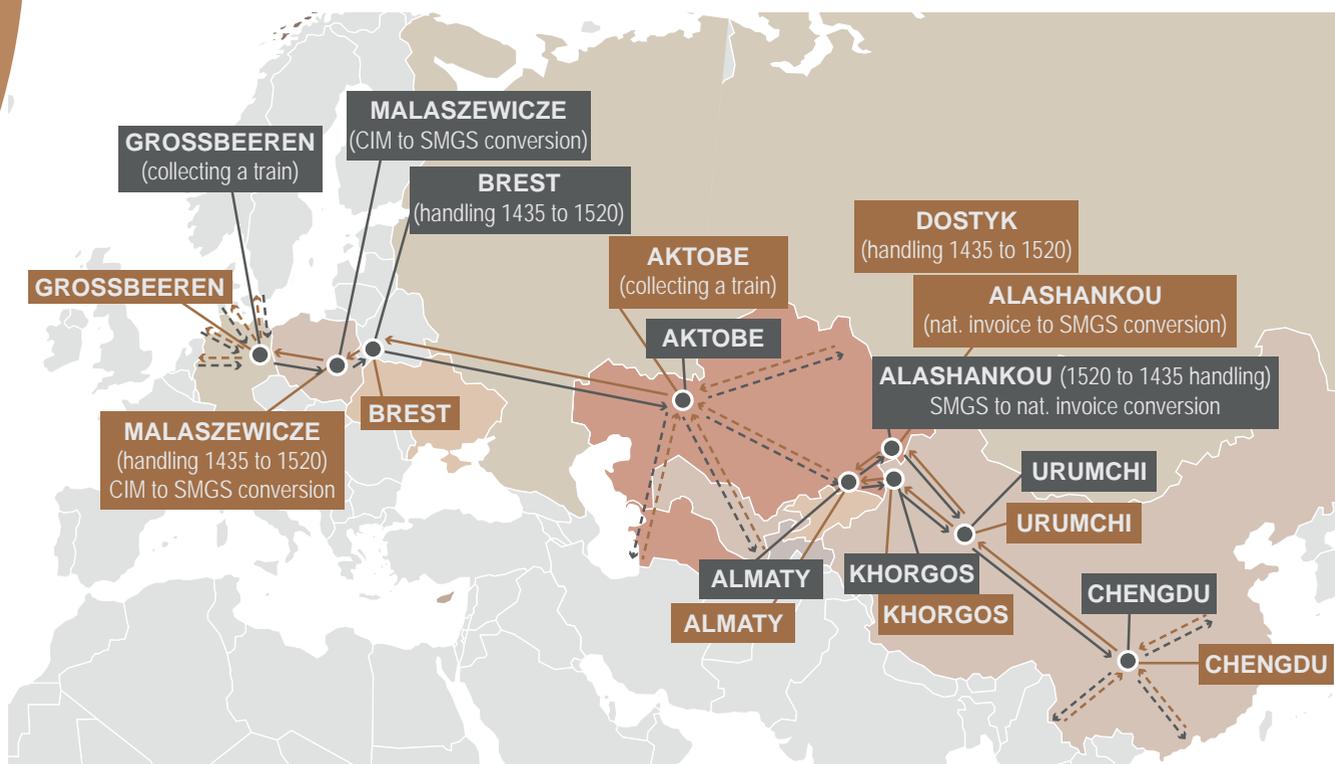
International cooperation is encouraged through the need to standardise transport infrastructure as the basis for an effective transport system. In practice, however, there are a number of difficulties inherent in the creation of a uniform Eurasian transport network that meets requirements from an economic perspective. In some cases, difficulties may be associated with diverging national interests in the countries that form the uniform transport network, i.e. the Eurasian corridor. Differences in the level of development of individual countries result from varying levels of infrastructural development in individual transport sectors and from different preferences regarding transport network layout and technical solutions.

Differing preferences in terms of transport network structure may also pose problems. Due to divergent interests and other obstacles, the process of standardisation of the transport network is liable to take place rather slowly. It is apparent that the transport structure currently in place in the countries involved in the corridor does not constitute a uniform network, with a diverse range of parameters and design solutions in use.
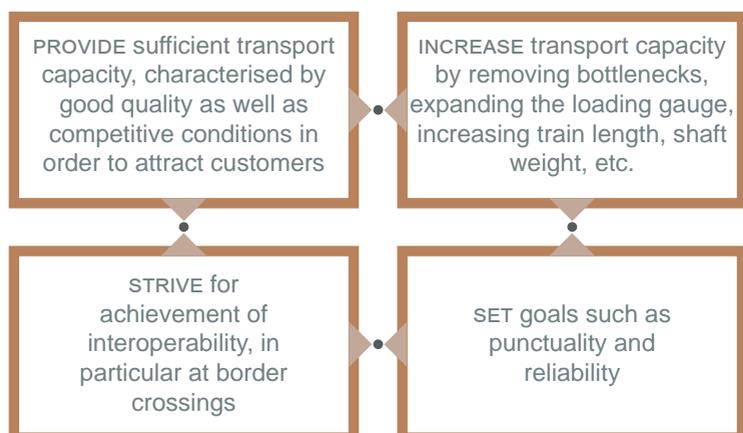
⃝ Interoperability

"**Interoperability**", in the context of the trans-European railway system, refers to the ability of the system to ensure safe, uninterrupted train travel and is characterised by a required level of performance. Interoperability depends on the legal, technical and operating conditions which must be met in order to enable efficient movement along the trans-European railway network.

In practice, this means that interoperable rolling stock can travel using interoperable railway infrastructure and move between the railway networks of individual countries (administrators of the infrastructure) without the need to stop at borders, change locomotives or replace drivers and without drivers having to take any actions specific to a given element of the infrastructure.

GROSSBEEREN
(collecting a train)

MALASZEWICZE
(CIM to SMGS conversion)

BREST
(handling 1435 to 1520)

DOSTYK
(handling 1435 to 1520)

AKTOBE
(collecting a train)

ALASHANKOU
(nat. invoice to SMGS conversion)

GROSSBEEREN

AKTOBE

ALASHANKOU (1520 to 1435 handling)
SMGS to nat. invoice conversion

MALASZEWICZE
(handling 1435 to 1520)
CIM to SMGS conversion

BREST

URUMCHI

URUMCHI

ALMATY

KHORGOS

CHENGDU

ALMATY

KHORGOS

CHENGDU

Main challenges for interoperable rail freight corridors

PROVIDE sufficient transport capacity, characterised by good quality as well as competitive conditions in order to attract customers

INCREASE transport capacity by removing bottlenecks, expanding the loading gauge, increasing train length, shaft weight, etc.

STRIVE for achievement of interoperability, in particular at border crossings

SET goals such as punctuality and reliability

A "transport corridor" may be defined as a bundle of technical connections characterised by high capacity, which enable transport and transfer in a specified direction. Due to the ability of transport connections to create functional and spatial structures affecting, inter alia, the shape of the networks of urban centres or the arrangement of green spaces, their functioning has become a subject of intense cooperation between European and Asian countries.
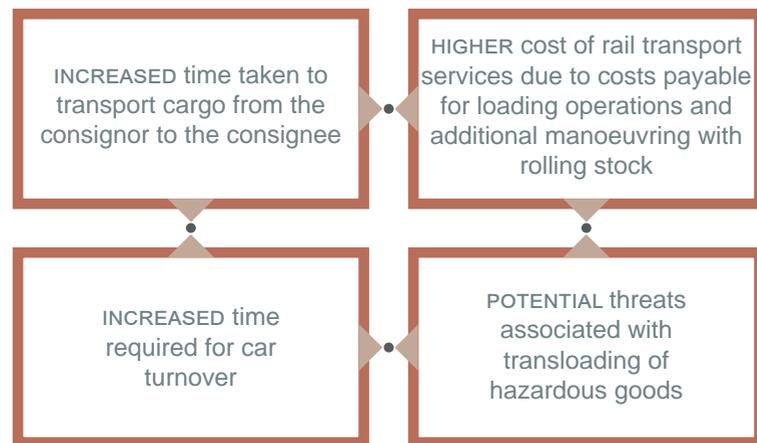
Many different passenger and freight carriers operate in the corridor. They expect an increase in passenger numbers and cargo volume in international traffic.

The existing technologies used in rail cargo transport generally involve transloading of goods from broad-gauge to standard-gauge rolling stock and vice versa, with transloading performed at specialised loading points.

Transloading results in:

If a technology based on bogie exchange is used, the time required for cars to wait at border crossings will also be increased and bogies will need to be kept ready and stored at storage facilities prior to use.

INCREASED time taken to transport cargo from the consignor to the consignee

HIGHER cost of rail transport services due to costs payable for loading operations and additional manoeuvring with rolling stock

INCREASED time required for car turnover

POTENTIAL threats associated with transloading of hazardous goods

Małaszewicze railway station

Małaszewicze railway station is situated in the province of Lubelskie in Poland. One of the largest transloading terminals in Poland and Europe (a so-called "dry" terminal) is located here, owned by Polish State Railways (PKP). This terminal is of international importance. Goods are transloaded here from broad-gauge rolling stock (1,520 mm) to standard-gauge rolling stock (1,435 mm).

The Małaszewicze terminal is located in the pan-European transport corridor II on the E-20 Paris-Berlin-Warsaw-Moscow railway line. Together with the Kobylany broad-gauge railway station and the Małaszewicze standard-gauge railway station, it forms the Małaszewicze transloading border region. Goods from China are increasingly transported to Europe via the dry transloading terminal at Małaszewicze. The railway operator is planning to expand the terminal. In January 2015, 600 containers reached Poland via the Eastern border through Małaszewicze. Around 350,000 containers are handled at the terminal each month.
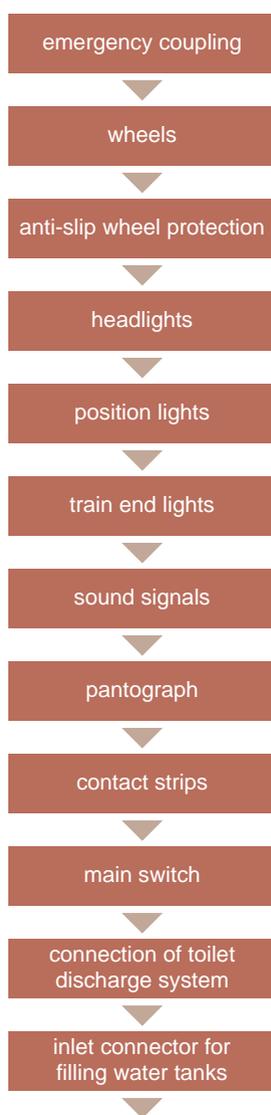
Description of Olechów project

The freight train to China from Łódź Olechów consists of 41 cars, is 600 m long and weighs 1,000 tonnes. The trains cover the distance from Łódź to Chengdu in two weeks, travelling through Russia for nine days.

In 2016, 400 freight trains came to Łódź from China. The Chinese declared that one thousand trains will make the journey this year, of which 800 have already been contracted. The trains are currently handled by a terminal in Olechów operated by Spedcont, which handled almost 1,200 trains last year.

The Lisbon Treaty, which provides a basis for the functioning of the European Union, indicates the need to make the necessary changes to European transport in order to harmonise the railway system. This is clearly indicated in the following quote from the treaty: "To help achieve the objectives referred to in Articles 26 and 174 and to enable citizens of the Union, economic operators and regional and local communities to derive full benefit from the setting-up of an area without internal frontiers, the Union shall contribute to the establishment and development of trans-European networks in the areas of transport, telecommunications and energy infrastructures".

In accordance with Directive 2008/57/EC, components of interoperability include:

- emergency coupling
- wheels
- anti-slip wheel protection
- headlights
- position lights
- train end lights
- sound signals
- pantograph
- contact strips
- main switch
- connection of toilet discharge system
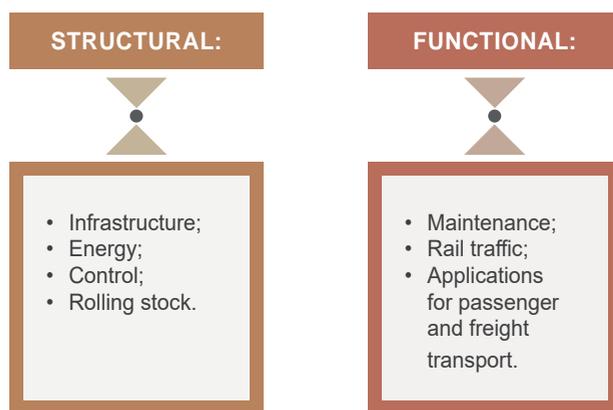- inlet connector for filling water tanks

The basic normative act relating to the implementation, application and monitoring of the use of interoperability principles at national level is Directive 2008/57/EC of the European Parliament and of the Council on the interoperability of the rail system within the Community.

Security systems

In order to determine the technical and organisational conditions that must be met in order to ensure interoperability, the railway system has been divided into subsystems, for which the requirements are defined and presented in TSI specifications (**Technical Specifications for Interoperability**). Division into subsystems should facilitate harmonisation of the trans-European rail system, considering its extent and complexity.

The trans-European rail system is divided into the following subsystems:

STRUCTURAL:

- Infrastructure;
- Energy;
- Control;
- Rolling stock.

FUNCTIONAL:

- Maintenance;
- Rail traffic;
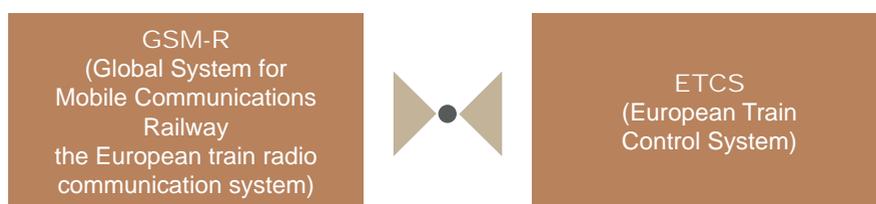- Applications for passenger and freight transport.

In addition, distinction is made in the structure of the railway system between the following:

- components of interoperability;
- interfaces constituting connections between individual subsystems.

For each of these subsystems, a relevant TSI specification defines primarily the basic parameters and technical specifications that apply to the components of interoperability and to the interfaces. TSI specifications are integral components of the regulations, which means that they are obligatory. For many of the parameters, the required values are defined by making reference to relevant standardisation documents, in particular to European standards.

Implementation of interoperability is a long-term activity with a strictly defined course. The implementation strategy for interoperability emphasises, first of all, the need to introduce the European Rail Traffic Management System (ERTMS), which consists of the following systems:

GSM-R
(Global System for Mobile Communications – Railway the European train radio communication system)

Both systems constitute important components in the process of eliminating barriers in transport, both technical barriers in railway networks within EU borders and barriers in the scope of building a common market for goods and services for the railway.

Functioning and operation of border crossings

When considering the specific nature of railway infrastructure facilities associated with transloading of goods, rail traffic and transport of people and goods in the Eurasian railway corridor, cooperation between the state administration, military and railway services may be observed. Such cooperation aims to ensure that the controls employed raise the level of security and are are fast, reliable and not burdensome, both for passengers and employees involved in servicing the railway border crossing. The procedures also take into account other threats associated with acts of God and failures of individual systems – fire, burglary, robbery, disasters, accidents, failures, contamination of the environment, etc.

When creating a railway protection system at border crossings, account is taken of the fact that each border crossing is different, has its own specific nature and varies in terms of size and range of services rendered.

Given the expected increase in transport volume from east to west, there is a need for a system that will reduce the costs currently incurred in connection with cargo and passenger transport technology at the point of contact between railway networks with different track gauges. Such a system must be friendly to the environment; thus, the solution should meet the following requirements:

- quality requirements: help ensure movement of cargo without damage and guarantee unhindered passenger travel;
- economic requirements: ensure short travel times for passengers and cargo across the border, at low cost and with low levels of labour consumption;
- technological requirements: guarantee simple and failure-free movement of railway vehicles between tracks with different track gauges;
- infrastructure requirements: enable use of much smaller spaces for performing all of the necessary activities in border crossing areas, such as customs clearance, phytosanitary control, etc.;
- ecological requirements: eliminate all activities whose performance may be harmful to the natural environment.

Terespol/Małaszewicze – Brest border crossing between Poland and Belarus

The Terespol/Małaszewicze – Brest border crossing is an international border crossing for passenger and cargo traffic. It uses the dry loading terminal at Małaszewicze, with a daily cargo transloading capacity of 24 thousand tonnes. The cargo transfer point is located at Kobylany station in the immediate vicinity of the Małaszewicze station, 5.1 km west of Terespol station. The border crossing operates around the clock. The border railway station is located approximately 2,600 metres from the national border, and an important European railway line (Berlin-Warsaw-Minsk-Moscow) runs through it. Border clearance for passenger traffic is performed on tracks 3 and 5 within platform 2, track 4 within platform 3 and, in exceptional cases, on track 7 within platform 1. Clearance for freight traffic is performed on tracks 101 and 102 for track gauge of 1,520 mm and on tracks 1 and 2 for track gauge of 1,435 mm. The track system comprises two multi-track lines, two with track gauge of 1,435 and two with 1,520 mm. Wheel set changes are performed on the Belarus side at Brest central station. The Terespol railway station has a track with a track gauge of 1,435 mm, electrified with 3 kV DC, a track with track gauge of 1,435 mm (not electrified) and two tracks with track gauge of 1,520 mm (not electrified).

Rzepin–Frankfurt/Oder border crossing between Poland and Germany

The Rzepin–Frankfurt an der Oder border crossing is a former Polish-German railway border crossing located in the Słupsk district of Lubuskie province, in the Rzepin and Słubice communes. This border crossing was previously named Kunowice–Frankfurt/Oder, but the border station was relocated to Rzepin following the modernisation of the line and closure of the station at Kunowice.

On 21 December 2007, the border crossing was closed pursuant to the Schengen Agreement.

The station contains waiting rooms for passengers, sanitary facilities (toilets, showers, etc.), luggage storage rooms, retail, service and catering outlets (grocery store, currency exchange office, parcel collection point for products purchased online). The border crossing has access roads, car parks, and a railway information service. Baggage scanners operated by the border guard have been installed; there are premises for strip searches, and a room for the service responsible for public order. Terespol railway station has service rooms for the border guard, customs service and railway guard. In the border crossing area, information is provided on the prohibitions and restrictions in force by means of pictograms, information boards and announcements. The border crossing area is adapted to the needs of people with reduced mobility (lifts and stairs with ramps). Free Wi-Fi is offered.

Border Crossing Terespol/Małaszewicze – Brześć
Scheme of track connections

Map key symbols

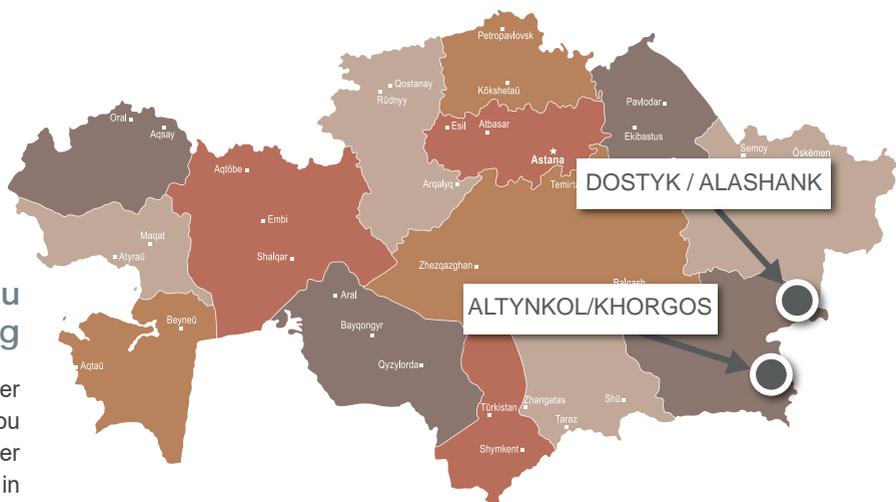*Source: Investment office of the PKP S.A.*
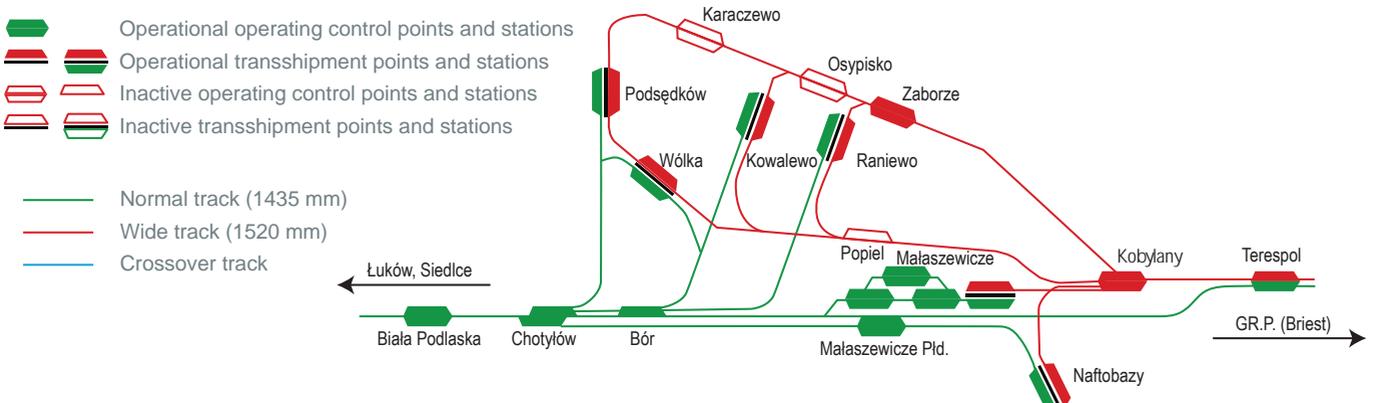
Dostyk/Alashankou border crossing

There are two rail connections across the border between Kazakhstan and China: Dostyk/Alashankou and Altynkol/Horgos. The locations of these border crossings are shown on the map below, both in eastern Kazakhstan.

Both countries have developed "visa-free zones" allowing citizens of each country free travel over the border for shopping within the zone. Travel to the border area is typically via overnight passenger train from Almaty to Altynkol station. Buses meet the train to take Kazakhs to the border area for a day of shopping, after which they are taken back to Altynkol for the return trip to Almaty.

Rail Tonnage through Dostyk/Alashankou

Source: BCP data sheets; International Logistics Centers Nodes/Network Central Asia; TRACECA; Task A Report, Kazakhstan, TRACECA (2009)

Zhaisan/Aktobe

Zhaisan is a border crossing between Kazakhstan and Russia. It is located in the Aktobe region, south-east of Lake Zaysan. Operation of the border crossing is affected by actions taken by the Russian customs service, Russian border control and other Russian offices in Sagarchin.
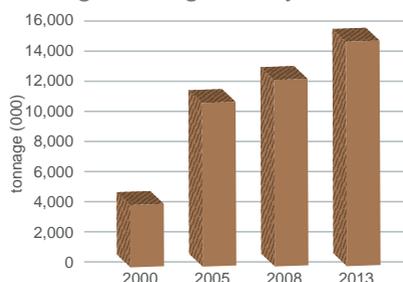
Rail cargo moving through Dostyk/Alashankou amounted to only 191,000 tonnes during its inaugural year of 1991; since then, traffic has increased to more than 15 million tonnes (2013). The following graph highlights historic cargo growth through this strategic gateway.

The Dostyk/Alashankou border is the more northerly of the two and links with the main rail routes across Northern Kazakhstan and into Russia. This is the primary route used by most of the block container trains operating between China and Europe.

One factor that explains why block container trains have such short transit times (about 15 days between China and Europe) is the common customs zone comprising Kazakhstan, Russia and Belarus, minimising documentation issues at border crossings. As much of China's trade with Russia passes through Kazakhstan, Russia has recently lobbied Kazakhstan to tighten controls over goods moving from China to Kazakhstan in order to prevent cheap Chinese goods from being smuggled to Russia through the Russia-Kazakhstan-Belarus Customs Union.

Positive Results

Good cross–border cooperation has been achieved. More than 15 million tonnes of cargo flow through the Dostyk/Alashankou border crossing, an important gateway for Kazakhstan/China trade as well as increasing container movements between China and Europe. For container train movement in particular, cooperation between railway staff in Kazakhstan and China is one of the reasons for continued traffic growth.

Border stations such as Altynkol (Kazakhstan), Horgos (China), Dostyk (Kazakhstan) and Alashankou (China) have opened up the southern part of Kazakhstan and Central Asia for operation of trains to and from China.

The area is a possible site for a future high–speed passenger corridor. While most cross-border transport over these border crossing points has involved freight traffic, there are plans for an ambitious China–Europe high-speed rail project that would pass through Kazakhstan.

○ Security

In addition to the implementation of intelligent scenarios to support the services concerned, security systems at railway border crossings should be used to record events, along with descriptions and time attributes.

Such systems should consist of:

- systems for monitoring specific facilities and the area of the railway border crossing;
- systems for monitoring the infrastructure located in the area of the border crossing;
- systems for monitoring the state of the environment at the border crossing and in the surrounding area;
- systems for monitoring the behaviour of passengers and people staying in the vicinity of the railway border crossing;
- an intelligent platform for information processing and analysis and monitoring and management centres of individual administrative and industry authorities operating in the area of the railway border crossing;
- data collection and information distribution systems.

Systems for monitoring certain facilities and the area of the railway border crossing generally include fixed terminals, e.g. various kinds of IP video cameras, sensors, information boards and loudspeakers (megaphones).

Legal security systems

The adoption of legal solutions has obliged the countries involved to develop a concept for railway corridor development. Statutory provisions defining the entities responsible for security have been created and tools for appropriate activities provided. Security systems and legal powers may vary in individual countries.

Nevertheless, when pursuing the goals set for the railway corridors, actions based on regulations to protect security, especially at points of contact (i.e. at border crossings) have been implemented in a professional way. Despite different legal baselines, the procedures developed ensure implementation of the objectives in safe passenger and goods transport conditions. Spatial development connecting Europe and Asia is of fundamental importance for the Eurasian transport corridor. Security during transport of people and goods is essential for the entities participating in the transport process because it affects effectiveness, time and costs.

The laws and algorithms for conduct that exist in relation to security at railway border crossings have been developed by individual countries and adapted for the current assessment of threats. In addition, services performing their tasks at border crossings have the right to perform strip searches and look through the contents of baggage, check cargo at railway stations and in railway transport vehicles in order to exclude the possibility of crimes or offences being committed. In recent years, regulations have been introduced within the scope of radiometric control.

Individual countries are involved in projects conducted by international bodies. One of the main purposes of such bodies is to develop principles of cooperation in the scope of secure exchange of information, prevention, protection, the fight against terrorism, as well as improvements in the collection, processing and analysis of intelligence data. The aim of such cooperation is to develop common procedures in the fight against terrorism together with domestic and international entities, using the capabilities of bodies such as Europol, Interpol and Frontex.

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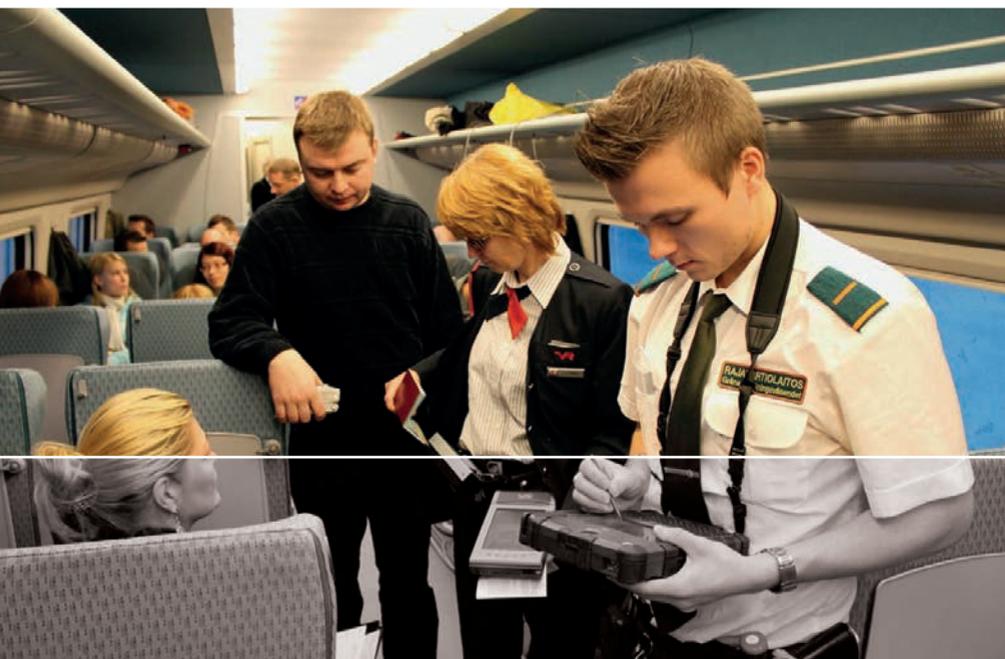
Technical and physical security systems

Ensuring security is a particularly important consideration in the Eurasian railway corridor. One of the major problems in this area is public security at railway border crossings. An important security component is the identification of threats to public security in railway transport, including the railway border crossings that link the countries in the Eurasian corridor.

In addition to physical security, technical security measures are a further key consideration. Nevertheless, attention should be paid to the role of the services established for the purpose of ensuring the required level of security and public order.

Video monitoring systems are currently standard equipment in public locations. Numerous kinds of monitoring systems have been developed to prevent increasingly common cases of threats to human life, personal belongings and property.

Monitoring systems are adapted to the specific features of the facilities being monitored. Such systems should monitor certain elements of the railway infrastructure such as bridges, turnout tracks, switches, etc. Railways present many potential risks for passengers and people working in certain facilities, e.g. at railway stations, on railway lines or at border crossings.

When creating a monitoring concept for railway border crossings, account is taken of the fact that each border crossing is different, has its own specific nature, and varies in terms of size and range of services performed. System adjustments are made depending on whether the border crossings are for passenger, cargo or combined passenger and cargo traffic.

Each border crossing differs in terms of types of passenger and cargo traffic and quantity of goods transported. Therefore, monitoring system solutions must, on the one hand, ensure the security of a given border crossing and, on the other hand, must be justifiable economically. The main function of security systems at railway border crossings is to assist the relevant entities in implementation of security-related processes by means of intelligent scenarios.

Monitoring systems support operation of security and administration services i.e. border guard, customs and phytosanitary services, railway services such as operation of the railway infrastructure associated with rail transport, as well as passenger and cargo carriers. In addition, video monitoring systems support the security of other entities operating in the area of the railway border crossing e.g. storage facilities, warehouses, etc., damage to which could result, for example, in contamination of the environment.

In general, monitoring systems strengthen processes relating to security of:

- people (citizens of the European Union) by preventing infiltration of terrorists and terrorist materials into EU territory, as well as passengers and staff in the vicinity of border crossings;
- infrastructure (railway tracks, stations, traction substations, transloading yards, warehouses, etc.);
- rolling stock (passenger and freight cars, locomotives, industrial transport vehicles and equipment, e.g. cranes, forklifts, etc.);
- the environment (e.g. prevention of pollution or contamination of soil or air); these processes affect the smooth flow of people and goods between the countries located in the corridor area.

Systems for monitoring facilities and the area surrounding the railway border crossing include fixed terminals e.g. various kinds of video cameras, movement sensors, heat sensors, information boards and loudspeakers (megaphones).

Portable terminals provided as part of the system concept, intended primarily for border guards and customs services, are worthy of further discussion. These terminals are used for multimodal biometric verification of individuals, as well as for monitoring the behaviour of passengers crossing the border by train.

Biometric verification can be carried out using existing facial recognition systems. The main advantage of face recognition systems is the ability to identify images from surveillance devices without the need to involve the person directly. Facial recognition is limited to obtaining a facial image or sequence of images, after which the system automatically analyses the image(s) and determines whether or not the individual is in the facial image database.

Use of train scanners can reduce train clearance and train set formation times. Border control procedures, such as taking X-ray images in motion, enable more effective management of shipments and indirectly reduce the costs associated with railway car leasing. Devices for X-ray scanning can detect illegal and hazardous goods such as explosives, radioactive substances, firearms and cigarettes. In addition, they can detect hidden compartments or additional structural elements in freight cars and containers (double walls, floors, enclosures, etc.) without opening the car. After scanning the train set by moving it slowly through the scanner, the resulting image is electronically processed.

Europe's largest and most modern train scanning terminal is located at the Terespol-Brest border crossing between Poland and Belarus. A staff building, accelerator bunker and detector towers have been erected at the trackway near the border crossing. The range of the scanning device at the terminal covers three tracks. Images of scanned wagons are displayed on computers at the terminal and analysed by customs officers.
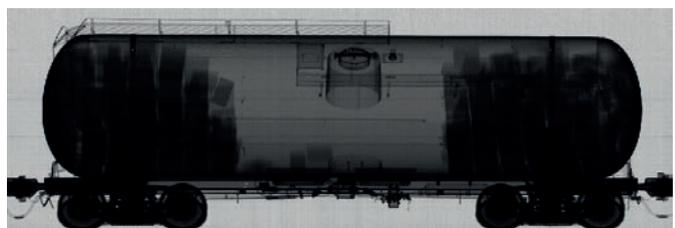
Technical security systems at railway border crossings should be highly reliable, with appropriate levels of hardware and software redundancy designed in accordance with good engineering practice.

Uninterruptible power supply must be provided for the entire system. The configuration and size of individual components should be adapted to each particular border crossing. The system should therefore have a modular structure (this should apply both to hardware and software) that allows new data sources to be added and enables monitoring of new facilities or creation of a new remote centre for monitoring and management.

Security systems at railway border crossings implement national procedures and regulations in order to support processes for ensuring security at border crossings and in the entire corridor.

Supported by formal legal protection, security systems can counteract increasingly common threats to human life and property. Such monitoring systems make a significant contribution to overall system protection.
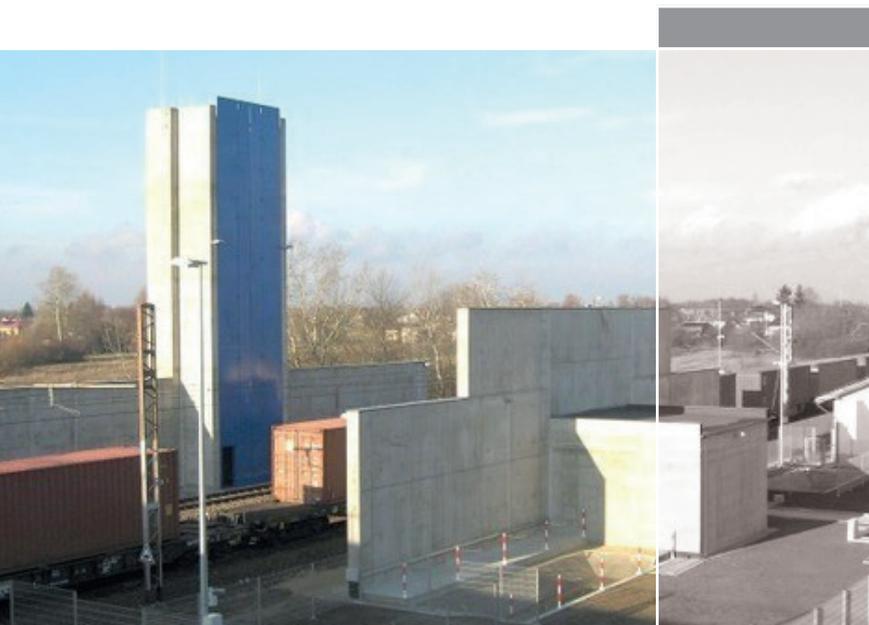
Physical security

Experience shows that passenger security is threatened not only by potential terrorist attacks but also by other actions involving a risk to life and property. Physical protection of individual services is provided in some cases at railway border crossings in order to counteract such threats.

Security support systems are implemented by means of physical protection. In addition to general elements of threat prevention, this also involves identifying potentially dangerous behaviours.

Prevention and response to phenomena posing a threat to security at railway border crossings is entrusted to the relevant authorities and institutions, often in specialised units. Physical security protection is provided by:

- border protection services, which perform border traffic control and security checks;
- customs services, which perform customs checks;
- police and security, which ensure compliance with regulations in the railways, on trains and other railway vehicles, and work to protect human life, health and property in the railways, on trains and other railway vehicles;
- veterinary inspection services, which perform veterinary border inspections;
- phytosanitary inspection services, which perform sanitary inspection of plants and plant products;
- trade inspection services and agricultural and food inspection services, which perform quality control of agricultural and food products;
- sanitary services, which perform sanitary border checks of food of non-animal origin, as well as materials or products intended for contact with food imported from third countries;
- railway security guards, which ensure compliance with regulations in the railways, on trains and other railway vehicles, and work to protect human life, health and property in the railways, on trains and other railway vehicles.

DATA COLLECTED FROM MONITORING DEVICES MAY BE USED TO:

IDENTIFY passengers who are unauthorised to cross the border	DETECT passengers with counterfeit travel documents	DETECT passengers carrying prohibited products	DETECT individuals posing as railway personnel	DETECT individuals who are unauthorised to enter specific areas e.g. tracks for wagons carrying hazardous goods

Data collection is integrated and information is exchanged between guards and services at railway border crossings, for example:

- **passport control passes information to the customs office**
  (on passengers showing signs of stress, for example);

- **customs passes information to the police**
  (on passengers carrying weapons or explosives, for example);

- **railway guards pass information to the police**
  (on the presence of individuals in critical infrastructure areas, for example).

○ Summary

The purpose of border crossings in railway corridors is to secure the movement of goods and people in an efficient way. Border crossings no longer serve as barriers or gateways for collection of customs duties and charges. They fulfil the function of bridges that efficiently and safely connect countries through a uniform corridor. In individual countries along the Eurasian corridor, systems and procedures have been developed and implemented to ensure security and counteract unfavourable phenomena. When developing elements of such systems, it is important to bear in mind the ultimate purpose of railway border crossings. An effective border crossing system will facilitate security, quality resulting from smooth, undisturbed travel, and will have a positive economic impact due to the efficient movement of people and goods.

**RAILWAYS MUST ALSO CONTENT
WITH MANY POTENTIAL RISKS AND THREATS
SUCH AS:**

Threats to people and railway infrastructure resulting from terrorist attacks

Theft, robbery, vandalism, etc.

Threats arising from poor maintenance of railway facilities and tracks

Risk of passenger accidents due to running to catch a departing train or falling when entering or leaving a train

Terrorist attacks have the most serious and costly consequences, with the potential to cause the greatest harm and suffering. When developing railway transport security systems for railway border crossings, the countries involved must ensure that the appropriate services are provided, bearing in mind the unique nature of each individual crossing, each with its own particular needs.

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More than 1 000 000 kilometres of lines

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