
NETWORK STATEMENT

NETWORK STATEMENT

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1. GENERAL CONTEXT

1.1. EU requirements to the Reference Document for the Network

Directive 2001/14/EO of the European Parliament and of the Council of 26 February 2001 requires that every private or public Railway Infrastructure Manager (IM) shall issue Network Statement (article 3)

“Network statement” means the statement, which sets out in details the general rules, deadlines, procedures and criteria concerning the charging and capacity allocation schemes. It shall also contain such other information as is required to enable application for infrastructure capacity (art. 2, letter “j”)

“The Network Statement shall set out the nature of the infrastructure, which is available to railway undertakings. It shall contain information setting out the conditions for access to the relevant railway infrastructure” (art. 3, pg. 2).

1.2. Purpose of the Network Statement

Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 describes the principles and the procedures, which shall be applied as regards to determination and payments of charges for railway infrastructure and capacity allocation of the railway infrastructure.

Member States (MS) shall ensure that charging and capacity allocation schemes for railway infrastructure follow the principles set down in this Directive and thus allow the IM to sell and make optimum use of the available infrastructure capacity.

This Directive applies to the use of railway infrastructure for domestic and international rail services.

Member States may exclude from the scope of this Directive (art. 1, pg. 3):

- Stand-alone local and regional networks for passenger services on railway infrastructure;
- Networks intended only for the operation of urban or suburban passenger services;
- Regional networks, which are used for regional freight services solely by a railway undertaking that is not covered by the scope of Directive 91/440 until capacity on that network is requested by another applicant.
- Privately owned railway infrastructure that exists solely for use by the infrastructure owner for its own freight operations.

1.3. Content of the Network Statement

According to Annex 1 of Directive 2001/14EC, the Network Statement shall contain some indicative information.

The network statement referred to in Article 2, letter “j” and Article 3 shall contain the following information:

1. A section setting out the nature of the infrastructure which is available to railway undertakings and the conditions of access to it (refer to Annex 2 for details).

2. A section on charging principles and tariffs. This shall contain appropriate details of the charging scheme as well as sufficient information on charges that apply to the services listed in Annex II which are provided by only one supplier. It shall detail the methodology, rules and, where applicable, scales used for the application of Article 7(4) and (5) and

Articles 8 and 9. It shall contain information on changes in charges already decided upon or foreseen.

3. A section on the principles and criteria for capacity allocation. This shall set out the general capacity characteristics of the infrastructure which is available to railway undertakings and any restrictions relating to its use, including likely capacity requirements for maintenance. It shall also specify the procedures and deadlines which relate to the capacity allocation process. It shall contain specific criteria which are employed during that process, in particular:

a) the procedures according to which applicants may request capacity from the infrastructure manager;

b) the requirements governing applicants;

c) the schedule for the application and allocation processes;

d) the principles governing the coordination process;

e) the procedures which shall be followed and criteria used where infrastructure is congested;

f) details of restrictions on the use of infrastructure;

g) any conditions by which account is taken of previous levels of utilisation of capacity in determining priorities for the allocation process.

It shall detail the measures taken to ensure the adequate treatment of freight services, international services and requests subject to the ad hoc procedure.

2. NETWORK STATEMENT OF THE NATIONAL COMPANY OF RAILWAY INFRASTRUCTURE

2.1. General

The National Company Railway Infrastructure (NRIC), a state-owned company (having the status of a state undertaking pursuant to art. 62, pg. 3 of the Commerce Act) incorporated on the basis of the provisions of the Railway Transport Act (RTA), promulgated SG, No. 97 of 28.11.2000, effective from 01.01.2002, item 9, section 4, No. 592, is obligated:

- to manage and own the property at its disposal – public and private state-owned property;
- to build, maintain, develop, optimize and operate the railway infrastructure of the national railway network;
- to manage the systems of traffic safety and control;
- to provide to the rail carriers equal access (art. 3, pg. 1 of Regulation 41).

In compliance with the policy of transparency and non-discrimination, which is compulsory to achieve that purpose for development, NRIC has elaborated this document, connected with the use of the railway infrastructure consistent with the requirements of Directive 2001/14/EC (Art. 3 and Annex 1), the Railway Transport Act, Regulation 41 (art. 8), Regulation 57 and Regulation 59.

2.2. Purpose

This Network Statement includes all the information needed by the potential carriers and railway undertakings, which wish to use the national railway network to offer transport services of passengers and cargo.

2.3. Legal Framework

The General legal framework applicable for the access and use of the national railway network until now includes the following acts and rules:

- Directive 91/440/EC of 29 July 1991, Directive 2001/12/EC, updated by Directive 2004/51/EC;
- Directive 95/18/EC of 19 June 1991, Directive 2001/13/EC and Directive 2004/49/EC;
- Directive 2001/14/EC of 26 February 2001;
- Directive 96/48/EC, Directive 2001/16/EC and Directive 2004/50/EC concerning participation in another stock company;
- Directive 2004/51/EC concerning the International cargo transport.

All these Directives are available on the European website: www.europa.eu.int and on the website of the Executive Agency of Railway Administration.

Additionally the existing National law, codes, regulations, etc shall be also specified.

- Railway Transport Act (RTA), promulgated SG, No. 97 of 28.11.2000, effective from 01.01.2002, item 9, section 4, No. 592.
- The Commerce Act;
- The Concessions Act;
- The Code on Administrative Proceedings;

- Regulation 41 of 27.06.2001 concerning the access to and the use of the railway infrastructure, issued by the Minister of Transport and Communications, promulgated SG No. 64 of 20.07.2001, effective from 01.01.2002.
- Regulation No. 46 of 30 November 2001 on railway transportation of dangerous cargo;
 - Regulation on categorization of railway lines in the Republic of Bulgaria, included in the railway infrastructure and closing individual lines and sections of lines.
 - Regulation No. 57 of 9 June 2004 on the conditions and the essential requirements to railway infrastructure and rolling stock to achieve interoperability of the national rail system with the trans-European rail system (title amended - SG No. 88/ 2007), effective from 26.06.2005, issued by the Ministry of Transport and Communications (promulgated, SG No. 55 of 25 June 2004, amended SG No. 60 of 9 July 2004, amended SG No. 91 of 15 November 2005, amended SG, No. 55 of 7 July 2006, amended SG No. 59 of 21 July 2006, amended SG No. 88 of 2 November 2007);
 - Regulation № 59 of 5 December 2006 concerning railway transport safety, issued by the Ministry of Transport (promulgated SG, No. 102/ 19 December 2006, amended SG No. 88 of 2 November 2007);
 - Tariff on infrastructure charges, collected by the infrastructure manager (effective from 01.04.2007), approved by Government Decree № 302 of 21.12.2001.

2.4. Status of this document and complaint procedures

The Network Statement is elaborated for the potential and existing carriers and railway undertakings and for any other parties interested in cargo and passenger railway transport services.

Any contracts or agreements, contracted between NRIC and any railway undertaking using the national railway network, are based on the rules contained herein.

In case of contestation or disagreement of any party with any provision contained herein, a complaint may be lodged before the Railway Regulatory Body (RRB) as provided in the Railway Transport Act (effective from 01.01.2002) and art. 29, pg. 1, item 1 of Regulation No. 41. The Executive Director of IARA shall deliver motivated decision on the complaint within two months after it is lodged and shall give instructions to eliminate any irregularities (art. 30, pg. 1 of Regulation No. 41). Further the decisions of IARA concerning the complaint under art. 29, pg. 1 may be appealed against as provided in the Code on Administrative Proceedings (art. 30, pg. 2 of Regulation No. 41).

The decisions made by the regulatory body shall be sent to all stakeholders.

2.5. Structure of the Network Statement

NRIC, based on consultations with stakeholders, issues the Network Statement, which includes as a must (art. 8 of Regulation 41):

- General information
- Parameters of railway infrastructure, intended for use by railway carriers and the conditions to access it.
 - Principles and criteria for capacity allocation, including the parameters of the infrastructure capacity, intended for use by the railway carriers, as well as the restrictions concerning its use, including requirements for expected losses and capacity for maintenance.
 - Procedures about the deadlines in connection with the process of capacity allocation.

- Charging principles and tariffs, including information about charges and tariffs applied for the provided access services, including service and maintenance, additional and concomitant services.
- Applied procedures for infrastructure charging, including additional pays, compensations and discounts, as well as information about expected changes in charges.

2.6 Period of validity of this document

NRIC, based on consultations with stakeholders, shall prepared **report on the actual condition of railway infrastructure on an annual basis** (art. 8 of Regulation 41).

The report on the actual condition of infrastructure shall be issued 4 months before the deadline for the submission of requests for infrastructure capacity (art. 9, pg. 1 of Regulation 41). Requests for capacity shall be submitted at least **6 months** prior to the change in the Working Timetable (WT) (art. 13, pg. 1 of Regulation 41), which shall take place at midnight on the second Saturday of December or on a date agreed with the European Railway Administrations (art. 11, pg. 2 of Regulation 41 and art. 14, pg. 1 of Regulation 42).

The final date for receipt of requests for capacity to be incorporated into the working timetable shall be no more than 12 months in advance of the entry into force of the working timetable (Annex 3, item 3 of Directive 2001/14/EC). No later than 11 months before the working timetable comes into force, the infrastructure managers shall ensure that provisional international train paths have been established in cooperation with other relevant allocation bodies as set out in Article 15. Infrastructure managers shall ensure that as far as possible these are adhered to during the subsequent processes (Annex 3, item 4 of Directive 2001/14/EC).

Prior to issuing the Network Statement shall be updated in order to take into account and incorporate any changes in the railway infrastructure and the capacity allocation rules and the models and tariffs for determination of infrastructure charges.

The Network Statement is published Y-16 months, where Y stands for the year for which Working Timetable is developed, and 16 stands for the number of months.

This Network Statement is valid from the date of change of WT until the date the next WT comes to force (12 months) and is consistent with the validity of the timetable applicable for the same period of time.

If necessary the document is subject to updating (art. 9, pg. 2 of Regulation 41).

In the event of significant change due to law amendment or important investment, this document may be updated if NRIC considers it necessary. Law and other legal texts are applied regardless of the updated status of the Network Statement.

2.7. Conditions for issuing and sale of the Network Statement

This Network Statement is elaborated by NRIC in Bulgarian and in English and is available on the website www.rail-infra.bg. In the event of discrepancies or difficulties in the interpretation of the different versions, **the version in Bulgarian will have priority**.

Additionally each country interested in the services related to railway transport, may obtain the document on CD-Rom by submitting a request, accompanied with payment of 100 EUR to:

NRIC, address: Sofia city, Bulgaria, 110, Knyaginya Maria Luiza Blvd.

The Report on the actual condition of infrastructure will be provided against payment of the costs made for its issuance (art. 9, pg. 3 of Regulation 41), 100 EUR in this case.

2.8. Contact details

2.8.1 On government level

Any requests for clarification or additional information connected with the general provisions included in the Network Statement shall be addressed to the Railway Regulatory Body (EARA):

- By mail:
- By fax:
- By e-mail:
- By phone

2.8.2 Neighbouring European railway networks and One-Stop-Shop (OSS) sales network.

The members of the established association of infrastructure managers from the European Union Rail Net Europe (RNE) have made an agreement for organization of common sales and marketing of the international infrastructure capacity called European Railway Network. That association of Infrastructure Managers (RNE) maintains One-stop-Shops, operating as a network of individual contact points with customers within RNE. Concerning requests for international train paths, the railway undertaking shall contact any of these OSS, which will coordinate the whole process of allocation of the international train paths.

The representatives for relations with clients are published on the RNE website – www.railneteurope.com. Every infrastructure manager shall have client relations representative.

2.8.3 Vocabulary of terms

Vocabulary of the terms used in this document is enclosed in Annex 1 to the Network Statement.

3. CONDITIONS FOR ACCESS TO THE RAILWAY NETWORK

3.1. Legal Framework

The legal framework for access to the infrastructure is described in the Bulgarian Railway Transport Act, Regulation 41 on access and use of the railway infrastructure, Regulation 42 on licensing the railway undertakings for transportation of passengers and/ or cargo and the persons issuing safety certificates and Regulation 59 on railway transport safety management.

3.2. GENERAL ACCESS CONDITIONS

3.2.1. Applicants that may have access to the network or part of the network under the management of NRIC

The railway network is equally accessible to:

1. National Company Railway infrastructure for carrying out transportation for its own needs (technological transportation).

2. Licensed railway carriers, which hold Safety Certificate (art. 31, pg. 1 of RTA and art. 4 of Regulation 41) and Safety Certificate (art. 26 and art. 34 of Regulation 59 on railway transport safety management).

License may be issued for transportation of passengers and/ or cargo in individual parts of the territory of the country (art. 4, pg. 4, and item 2 of Regulation 42).

The requirements and the method of licensing and obtaining safety certificates are described in details in Regulation 42 on licensing the railway undertakings for transportation of passengers and/ or cargo and the persons issuing safety certificates.

The availability of safety certificate guarantees that the railway carrier has implemented Safety Management System consistent with the requirements of Regulation 59 and meets the interoperability requirements (Regulation No. 57 of 2004 on the essential requirements to the railway infrastructure and the rolling stock to ensure the required parameters of interaction, operability and compatibility with the trans-European rail system - promulgated, SG, No. 55/2004; amended No. 60/2004; amended No. 91/2005) and is capable of operating the network in a safe manner (art. 34, pg. 1 of Regulation 59). The Safety Certificate is issued by the Executive Director of the Executive Agency of Railway Administration and it is nominal and not subject to reassignment and is issued for a period of 5 years (art. 28 of Regulation 59).

The Safety Certificate indicates the type and the size of activities, carried out by the railway carrier. It includes two parts (Annex No. 4 of Regulation 59):

- part A certifies that the railway carrier has Safety Management System consistent with the requirements of art. 22, pg. 2 of Regulation 59, and that part is valid for the EU territory;

- part B certifies that the railway carrier meets the specific requirements for safe operation of the relevant railway infrastructure in Bulgaria (art. 35 of Regulation 59).

Carriers holding safety certificate issued in EU Member State shall file application before the National Safety Body on issuing safety certificate part B (art. 37 of Regulation 59).

Safety certificates of railway carriers issued in countries, which are not EU Member States shall be considered valid if this is agreed in bilateral or multilateral contract to which Republic of Bulgaria is a signatory (art. 38 of Regulation 59).

The Safety certificate is issued for the whole railway network of the Republic of Bulgaria or a part thereof and provides equal access to it (art. 36 of Regulation 59).

3. Carriers licensed by foreign railway administrations may perform transport services within the railway infrastructure if this is agreed in the bilateral and multilateral agreements to which Republic of Bulgaria is a signatory (art. 43 of RTA and art. 4, pg. 3 of Regulation 41).

Licenses of foreign railway carriers, issued by foreign railway administrations, are considered valid if thus agreed in unilateral or multilateral agreements to which Republic of Bulgaria is a signatory and the conditions for access to railway infrastructure and transportation is carried out subject to availability of technical compatibility and appropriate qualification of the personnel involved in the operation of vehicles, consistent with the territory of Republic of Bulgaria (art. 2 of Regulation 42 on licensing the railway undertakings for transportation of passengers and/ or cargo and persons issuing safety certificate).

4. Vehicles without Safety Certificate may pass a single time through the railway infrastructure along a specified route (locomotives of foreign administrations, special carriages, over-dimensioned vehicles, etc.) Movement of such vehicles is allowed only subject to order of the Head of NRIC, which shall indicate all restrictions (art. 30, pg. 8 of Regulation 42).

3.2.2. Access procedures

Interrelations between NRIC and the carriers in connection with the access to and for the use of the infrastructure are settled by contract (art. 6 of Regulation 41).

The railway undertakings shall send official letter – request for the conclusion of contract for access to the network of NRIC to NRIC on the following address: Sofia city, Bulgaria, 110, Knyaginya Maria Luiza Blvd.

This letter, written in Bulgarian, shall be accompanied by the following translated, legalized and certified copies of documents:

- License for carrying out railway transport services, issued in Bulgaria or in EU Member State (see RTA and Annex No. 1 to art. 4, pg. 4, item 1 of Regulation 42 in the event of transportation of passengers and/ or cargo on the whole territory of the country and Annex 2 to art. 4, pg. 4, item 2 of Regulation 42 in the event of transportation of passengers and/ or cargo in individual parts of the territory of the country - regional lines). This document guarantees that the requirements relating to compliance, professional and financial capacity have been fulfilled and that clients and third parties are protected from risk at any time.

- Safety Certificate attesting the fitness of the vehicles and the personnel for safe operation of the railway infrastructure (see RTA and Annex No. 6 to art. 30, pg. 4, item 1 of Regulation 42 concerning movement on the railway network without limitation). Safety Certificate has been also provided for movement along the railway network under restricted conditions – dimension, track-gauge, no automatic locomotive signalling, special conditions of movement, etc. (see RTA and Annex No. 7 to art. 30, pg. 4, item 2 of Regulation 42). The list of the staff directly involved in the operation of the vehicles, for which the certificate is issued, is an integral part thereof. This document guarantees that all safety requirements referring to the requested services have been fulfilled.

- The list of the vehicles, which RI wishes to use, with the relevant safety certificate.
- The list of the main sectors of the railway network, to which the Railway undertaking wishes to have access upon issuing the license for regional carrier (see List of main sectors accessible to railway undertakings (RIs) in Annex 2 of the Network Statement).
- Types of transport services, which the railway undertaking wishes to provide.
- Safety Certificate.
- Insurance document or an equivalent document indicating the total insurance amount in the event of accident affecting network, railway staff and clients. If NRIC considers the insurance amount insufficient, it shall notify the Railway regulatory body.
- If all conditions and procedures have been fulfilled, RI may have access to the network for a period not exceeding the period of validity of the different presented documents.

RI shall renew its requests for access in the relevant terms.

3.3. General commercial conditions

The efficient operation of the network of NRIC is achieved based on concluded contract in writing for the use of train paths, signed by the Railway undertaking and NRIC (art. 33, pg. 1 of RTA). The contract takes into account the fact that NRIC and RI work together by taking into consideration the specificities and the requirements relating to the use of the infrastructure. Each party shall provide to the other party the whole information required to ensure high level of efficiency of transportation and traffic safety (art.26 of Regulation 41).

In the event that the carrier fails to start the business of transportation of passengers and/or cargo within 3 month after contract conclusion, NRIC may terminate it unilaterally without notice (art. 27 of Regulation 41).

The contract, which settles the relations between NRIC and the carriers is made for a period of 5 years and is renewed after review of the license of the carrier as provided by art. 41 of RTA and art. 13 of Regulation on licensing the railway undertakings for transportation

of passengers and/ or cargo and the persons issuing safety certificate (art. 33, pg. 2 of RTA and art. 28 of Regulation 41). It is made within 3 months after issuing the license of the carrier (art. 33, pg. 3 of RTA).

NRIC may also conclude frame contract with any Railway undertaking. Such contract stipulates the rights and the obligations of the railway undertaking and NRIC concerning capacity allocation and applying the tariff for a period longer than a single service. This contract may be made for a period of 5 years. The clauses of this contract, according to the confidentiality condition, connected with the commercial issues, may be communicated to all interested parties (art.18, pg. 1 of Regulation 41). The framework agreement is not a hindrance for the use of infrastructure by other carriers (art. 18, pg. 2 of Regulation 41).

4. INFRASTRUCTURE

4.1. Definition

The railway infrastructure includes (additional provisions of RTA, &1, item 1):

- All rail tracks and stationary facilities, without those mentioned in art. 2 of RTA, required for the movement of the rail vehicles and for the traffic safety, including the tracks and the terrains belonging to them and the fire safety zones;
- Artificial facilities – bridges, tunnels, overpasses, underpasses and facilities protecting from avalanches and falling stones;
- The top building of the railroad – rails, sleepers, rail joints, shunts and ballast prism;
- Railway crossings and their facilities;
- The track development of the interim stations, sectoral stations, shunting yards, passenger stations and freight stations, the railway platforms and the relevant loading platforms;
- Security, signalling and communicating facilities and plants and facilities for manufacture, transformation and transmission of electric power to ensure power supply to them;
- Lighting facilities and systems to ensure safe movement in the region of the stations;
- Facilities for transformation and transfer of electric power for traction needs, including traction substations, power supply lines and overhead network, poles and other facilities of the power system for traction needs;
- Terrains and buildings ensuring the control on the maintenance of the railway infrastructure;
- Railway ferry-boat complexes;
- Terrains and buildings within the railway stations, where the activities of train traffic control are carried out and the other technological operations connected with the operation of the railway infrastructure and the traffic safety, the terrains on which the facilities ensuring traffic safety have been accommodated.

In the Regulation for categorization of railway lines in the Republic of Bulgaria, included in the railway infrastructure and the closing of individual lines or sections of lines, art. 8, pg. 1, 2 and 3 and the related Annex 1, 2 and 3 are given the lines, which are part of the railway infrastructure.

The railway network of NRIC provides access to the neighbouring railway networks, to ports and to industrial branches of private companies and enterprises.

4.2. Description of the railway network

Find below description of the key elements of the Network of the NRIC.

Considering the volume of information and the difficulties relating to data updating some discrepancies may be found between the description given below and the actual status under actual conditions. Therefore the railway companies are recommended to consult NRIC on any clarifications, which may be necessary.

4.2.1. Geographical identification

4.2.1.1. Lines

Basic parameters of railway network

a) Technical data

- **Overall track length (OTL) 6 938 km, including:**
 - single tracks – 3 048 km (43,9% of OTL);
 - double tracks – 1 941 km (28% of OTL);
 - narrow-gauge lines (track-gauge 760 mm) – 125 km (1,8% of OTL);
 - station tracks - 1824 km (26, 3 % of OTL), including:
- Shunts – 7816 nos.;
- Tunnels – total length 47,6 km.
- Railway bridges – 1018 nos, overall length 26,4 km;
- Crossings – 843 nos;
- Average density of railway network – 68 km/1000 km² territory.

b) Specificities

- Curves with radius up to 500 m – 1 694 nos., overall length - 618 km (8,9% of OTL);
- Total length of sectors along the main rail tracks with:
 - disturbed cycle between repairs – 2 435 km (35% of OTL);
 - speed limits – 182,1 km (4,9% of OTL of the main railway tracks).

Tables and maps containing information about the railway network are presented in Annex 2, table 1.1 -:- 1.3, table 2, table 3 and table 4.1 -:- 4.10.

4.2.1.2. Stations

The network has 349 railway stations, 6 of which served by BDZ EAD. Stations by types are as follows:

Detailed information about stations is presented in Annex 2 – table 3.

4.2.1.3. Boundary transitions:

- with Turkey through the boundary transition Svilengrad – Kapakule;
Border station – Svilengrad, exchange with Turkey Kapakule.
- with Greece through Svilengrad – Dikea with border station Svilengrad and Kulata – Promahon with border station Kulata. Steps are undertaken to make Kulata common border station with Greece;
- with Serbia through Dragoman – Dimitrovgrad with border station Dragoman (Dimitrovgrad railway station is common border station with Serbia);
- with Romania through the bridge of the Danube river at Ruse - Giurgiu North with border station Ruse for passenger trains and Ruse razpredelitelna for freight trains (Ruse and Ruse razpredelitelna are common border stations with Romania) and through the land transition Kardam - Negru voda with border station Kardam.

The ferry boat complex Varna provides opportunity for transportation of wagons via the Black Sea. There is no railway connection with Macedonia.

4.2.1.4. Ports:

The Black Sea ports, which are connected with the railway network of the Republic of Bulgaria are Varna and Burgas.

The Ports on the Danube River, which are connected with the railway network of the Republic of Bulgaria are: Vidin, Lom, Svishtov, Ruse North and Ruse West.

4.2.1.5. Facilities:

List of tunnels and bridges in the railway network by distance in km are presented in Annex 2 (table 2). Part of the crossings are given in the table with the stations (table 3).

4.2.1.6. Condition of security equipment and telecommunications

The systems and devices of the security equipment and telecommunications (security equipment and telecommunications) are components of the railway infrastructure, which ensure the management, control and safety of the train movement.

The key functions of **security systems** in NRIC include: Tracing the train position on the railway track via rail chains and axis counters; control and operation of the elements of the railway infrastructure (traffic lights, points, crossings) via the station interlocking and inter-station systems (automatic locking, automatic crossing devices, etc.); control and management of the speed of train movement through the ETCS systems; centralized supervision of train movement.

The telecommunication systems provide all types of communication connections in the system of NRIC – within the station, between stations, traffic control, train traffic control radio connections, etc.

Operational readiness and repair of the systems are ensured by excellent specialists in the relevant fields organized in three operational units, on territorial principle in hierarchic structure of control and management.

Detailed information about the security equipment is given in Annex 2 (table 3).

4.2.1.6.1. Security equipment

The condition of this system is directly dependant on safety, quality and efficiency of the railway service. Any malfunctions of the security equipment are precondition for accident and increase the risk for the user of railway transport.

Signaling

The safe movement of trains along the railway network is signalled (allowed) by giving light signals – from traffic lights. Traffic lights give signals relating to speed signalling or ordinary signalling. Signalling indications correspond to the applicable normative base (Regulation No. 58 of 2006 of the Ministry of Transport).

Currently the following security devices and systems are in operation in the stations and between the stations within the railway network of NRIC.

Station interlocking systems

Currently **364 stations and operation points** are in operation. They have the following security systems:

- Computerized interlocking system – 2 nos.;
- Relay interlocking with microcomputer visualization ETS-M-MKB- 4 nos.
- MRTS – ETSM – 198 nos.;

- Electromechanical interlocking system – 47 nos.;
- Relay system for key dependencies – 89 nos.;
- Without security system (panels for temporary control) - 24 nos.

Station interlocking systems control the turning of points, their locking in routes or individually, giving permission signal in case of locked route for the train, control of the train movement along a route and controlling of all conditions for safety along the routes, determined in the normative documents.

Centralized traffic control systems

There are **2 centres for remote control and control of the train movement** along the railway tracks Sofia - Plovdiv and Sofia - Karlovo. The computerized traffic control system Sofia – Plovdiv is in operation for over 20 years and covers a section with length 156 km double line and 17 railway stations. The traffic control system Sofia - Karlovo is in operation for more than 36 years and includes 22 stations and a sector with length 150 km single track.

Automatic crossing devices

Of all railway crossings, **483 nos. have been equipped with elements and devices ensuring the safe passing of the train through the crossing**, as follows:

- Electrical barriers – 140 nos.
- Automatic crossing devices with barriers – 74 nos.
- Automatic crossing signalling – 269 nos.
- Manually controlled barriers – 74 nos.

ERTMS/ETCS system

Along the railway line Sofia – Plovdiv - Burgas (440 km) has been installed **automatic locomotive signalling – ETCS - L1**, which does not allow exceeding the maximum permitted speed for train movement and does not allow passing in case of red signal. The system is from the initial versions and is subject to updating in order to meet the requirements of the EU directives.

Security systems between stations

To ensure safety of train movement between stations, the following systems are used:

- **SAL – relay semi-automatic block system**, which is available for about 2000 km of the railway network;
- Automatic block system with line signals – 548 km (track length) from the railway network
- **Automatic block system without line signals with axle counter** – modern system, which does not require making isolated fish joints, which is available for 1149 km of the railway network (track length).

The particular sections are given in an annex – **map System securing the train movement**.

4.2.1.6.2. Telecommunications

Telephone exchanges

The telephone exchanges of NRIC have hierarchic structure on three planes:

1st plane – Main stations, covering the main railway junctions - Sofia, Plovdiv, Stara Zagora, Varna, Gorna Oryahovitsa and Mezdra with total capacity of 14 200 piles.

2nd plane - Junction stations – covering the big railway stations and railway junctions – Pernik, Dupnitsa, Semptemvri, Dimitrograd, Karlovo, Tulovo, Karnobat, Burgas, Shumen, Kaspichan, Sindel, Samuil, Ruse, Levski, Pleven, Cherven bryag, Brusartsi and Vidin, with total capacity 9000 piles.

3rd plane – Terminal stations – about 50 small digital and coordinate stations, located at the smaller stations along the railway lines, each with capacity from 50 to 200 piles, with total capacity 3000 piles.

All stations from 1st and 2nd plane are digital, without ISDN and VoIP capabilities, with ordinary analogue terminals of subscribers. In this phase they are mainly with analogue connections between them and with the laying of optical cables, they will be replaced step by step with digital 2 Mb connections. In the bigger junctions (Sofia, Plovdiv, Varna, Gorna Oryahovitsa, Mezdra, Ruse, Pleven, Burgas and Shumen) there is automatic input/ output to the public network of BTC with R2DMFC signalling.

To these junctions have been built networks for remote monitoring, management, diagnostics and control (Network Management Systems), concentrated in the Main Stations of 1st plane.

Cables

In the expropriation zone along the railway track, NRIC has laid trunk copper cables MKKAEPBPzh 4x4x1.2+15x4x1.2. In the stations have been laid in-station cables for the telecommunication needs with different capacity, according to the needs. **The overall length of the laid copper cables is 3800 km.**

Along the secondary sectors of the railway tracks (500 km) there are still overhead **TT lines** with very limited capacity.

Along the 6th line Sofia – Radomir – Kyustendil – Gyueshevo optical cable has been laid with 30 single-mode optical fibres. Along the 5th railway line in the sector Blagoevgrad – Kulata an optical cable has been laid with 24 single-mode optical fibres. In the railway junction Sofia has been built and continues to be built now an optical city ring with an optical cable with 12 single-mode optical fibres. The optical city ring will cover all buildings of NRIC and BDZ in Sofia city. An optical cable is also in operation between Verinsko and Kostenets and from Ruse to the border with Romania on the Danube Bridge.

The overall length of the optical trunk cables is **300 km.**

Transfer systems

In the railway have been implemented and have been used 12-channel analogue HF systems K 12, GNK and Z 12. The HF systems have been 100% full, with small capabilities and limited number of channels; they do not meet the high network requirements for data transfer (the maximum speed is 19.6 kb/s).

STM 1 has been built and operates along the optical cable Sofia - Kyustendil. In the sector Blagoevgrad - Kulata STM 4 system has been built and is in operation.

Data transfer network

The data transfer network has been built on the basis of the existing telecommunication copper transfer system. There are four main switch centres, located in Sofia, Plovdiv, Gorna Oryahovitsa and Varna and 48 secondary centres connected with them.

Traffic control systems

The special traffic control systems are intended only for the needs of NRIC – they provide voice communication between traffic controllers and heads on duty carrying out the train movement. They are used by the units involved in the immediate operation and maintenance of railway lines and the security equipment. The special traffic control systems have been built independently from the general official telecommunication network according to the requirements of the normative documents.

Telex connections

NRIC maintains and operates for its own needs and for the needs of the railway operators intradepartmental telex network operating independently of the public one. The network consists of 4 telex stations and about 200 telex posts.

Selector connections

In the railway system have been used selector conference connections for the needs of coordinating the train movement between the Central Traffic Control Office, the main traffic control centres and the main railway junctions.

Radio connections (traffic controllers's radion connection and shunting)

NRIC has built specialized train radio traffic control and shunting connections. Traffic control radio connections are intended and made only to connect locomotive motormen with the relevant train traffic controllers and the traffic control officers on duty in the stations from the railway sectors.

The train traffic control connection operated in the frequency range 459 MHz (0.7 m). All main railway lines are covered with radio signal – 2400 km.

Shunting radio connections are intended to ensure shunting, wagon description and other activities in all train forming and shunting stations. The frequency resource in the range of 150 MHz (2 m) is used).

The transition to digitalization of radio connections and the application of GSM-R standards is now in process of preparation.

The particular application of the telecommunication systems is given in the annex – map Telecommunication systems.

4.2.1.7. Power supply

373 transformer stations, 1130 lighting pylons and 2290 heated points as well as 169 km power supply cable lines, including platform and regional lighting are now in operation.

In addition to the activities of maintenance of these facilities it is necessary to record the electric power consumption, however the equipment about that activity is obsolete and there is no equipment at all (electric meters) to read the costs for the different carriers.

4.2.1.8. Power facilities

As to extent of completed electrification Bulgaria occupies a leading place compared to countries from East Europe. From the total track length, the electrified railway lines are 4 882 km, which represents 67% of the total length of the railway network.

On the territory of Bulgaria are located 49 stationary and one mobile traction substations (TSS). There are problems with the switching facilities, the storage batteries, etc. with low level of reliability, which do not meet the requirements for remote control and the European standards and norms.

Parameters of overhead network (voltage, frequency, etc.)

According to EN BDS 50163 the parameters of the supply voltage for the electric traction system are the following:

- Nominal voltage – 25 kV;*
- Minimum voltage – 19 kV;*
- Maximum voltage – 27.5 kV;*
- Frequency 50 Hz;*

Annex 2 presents TSS – drawing by power sections (fig. 4) and Electric power distribution - drawing by power sections (fig. 5).

Payment for the traction electric power.

At present TREN EOOD sells electric power to carriers, which distribute it among themselves on the basis of the realized gross-ton-kilometres.

Restrictions by feeder zones.

According to Technical specification for interoperability for energy subsystem, adopted with decision of the European commission for the transport railway system, Annex 4 to art. 5, pg. 1 of Regulation No. 57, Annex “0”, item 0.2. the maximum permitted current for **the train is 500 A** for connecting lines – such are most of our electrical railway lines, and **for the modernized – 600 A**, such as the line in the electrified section Dupnitsa – Kulata/ Petrich.

4.2.2. Technical description and capabilities

Detailed technical characteristics of the railway network of NRIC are given in Annex 2 to the Network Statement. They include:

Railway track

- zones between stations, distances, total distances, reliable slopes and traction norms of locomotives in train movement (table 1.1. – 1.3, fig. 1);
- international railway corridors, passing through Republic of Bulgaria (fig. 6);
- permanent reductions (table 2)
- speed of train movement (table 3);
- tunnels and bridges (tables 4.1 - 4.10);
- map of the structure of railway sections (fig. 1);
- scheduled windows (table 6);
- list of stations and information about them (table 5);
- axle load (table 7);

Signaling and telecommunication systems

- signaling systems (fig. 2);
- telecommunication systems (fig. 3);

Power system

- parameters of power network;
- map of substations (fig. 4);
- map of sub-regions (fig. 5);
- restrictions by feeder zones;

Detailed technical specifications for each sector of the line are available at request to NRIC.

Railway carriers determine the traveling time between stations along the paths of movement of their trains through the traction calculations based on the information from table 1.1. - 1.3.

4.3. TRAFFIC RESTRICTIONS

4.3.1. Dangerous cargo

The conditions for transportation are stipulated in details in Regulation No. 46 of 30 November 2001 on railway transportation of dangerous cargo.

There are restrictions as to stations, as the dangerous cargo are accepted for transportation only as a separate wagon shipment from and to stations open for business and for operations with the particular cargo, determined by a carrier (art. 29, pg. 1 of Regulation 46). Exceptions are possible only with the permission in writing of IARA (art. 29, pg. 2 of Regulation 46).

4.3.2. Restrictions for tunnels and bridges

Detailed data about tunnels and bridges and their location in the railway infrastructure are given in table 4 of Annex 2.

4.3.3. Working hours.

Some stations are closed for a part of the day for traffic service, which leads to traffic restrictions. Information about the working hours of the stations is given in table 5 of Annex 2.

5. CAPACITY ALLOCATION

5.1. Legal Framework

The rules for railway capacity allocation settle the relations between the Infrastructure Manager (IM) i.e. NRIC and the Licenses Railway Carriers, shortly Railway Undertakings. Regulation No. 41 of 27.06.2001 of the Ministry of Transport concerning access and use of the railway infrastructure and Regulation No. 58 of 01.10.2006 of the Ministry of Transport concerning the rules on technical operation, train movement and signalling in railway transport refer to capacity allocation.

The allocation of train paths is consistent with qualitative and quantitative needs, expressed by the railway undertakings on one hand and the capabilities of the infrastructure and the used rolling stock on the other hand. With the exception of transportation connected with the realization of public services and in individual elements of the railway infrastructure for carrying out specific activities, priority is given to the international traffic: Passenger and freight and then to the domestic passenger and freight traffic.

Based on the above principle upon capacity allocation of the railway infrastructure, priority access is provided to:

1. Transportation, which is carried out in pursuance of obligations for carrying out public transportation services;
2. Services, which are provided in individual elements of the railway infrastructure, built or developed for carrying out specific activities (on specialized high speed segments, freight lines, etc.) (art. 32 of RTA);
3. Transit railway transportation and combined transit transportation through Republic of Bulgaria and international transportation.

The real-time management of allocated train routes is carried out as provided in art. 45 of Rules on train movement and shunting operations in Railway transport, and the trains have priority by categories, as follows:

1. Emergency and fire-fighting trains, tracked self-propelled specialized machines for repair and maintenance of the railway track and the overhead network, snow-ploughs, isolated locomotives, motor carriages and motor trolleys, when assigned to render aid in the event of breakdown or crash, for restoration of the railway track, railway facilities, communications and overhead network, as well as for fire-fighting and in case of heavy labour accidents;
2. Passenger trains with special designation;
3. Passenger express trains;
4. Passenger fast trains;
5. Passenger international trains;
6. Passenger suburban trains;
7. Ordinary passenger trains and business trains;
8. Mixed trains;

9. Emergency and fire-fighting trains and track self-propelled specialized machines upon return at the home stations, when they were assigned under the conditions of item 1, auxiliary locomotives for fast and passenger trains, track measurement car – laboratory, car – laboratory for the overhead network; these are assigned with the number of direct freight trains;

10. International freight trains for combined transportation;

11. express freight trains;

12. Direct freight trains and auxiliary locomotives for freight trains;

13. local freight trains;

14. Work trains;

15. Shunting trains, isolated locomotives and all other vehicles.

The category of military trains is specified upon their assignment. In the event of meeting of two trains, under equal other conditions, the trains are allowed to pass at the discretion of the train traffic controller.

When preparing the working timetable and in the cases when the infrastructure is declared full, when determining the priority upon capacity allocation will be taken into account also the importance of services, mainly those in international communication (art. 20, pg. 4 of Regulation 41).

NRIC shall, as far as possible, satisfy all requests for capacity of the infrastructure, which refer to routes crossing more than one network (art. 15, pg. 1 of Regulation 41)

Upon satisfying the requests, the manager shall comply with the following sequence: Express passenger trains, fast passenger trains, passenger trains, direct freight trains, section-group trains, freight trains, shunting trains. Work freight trains have priority only in the cases described in art. 14, pg. 4 (art. 15, pg. 2 of Regulation 41).

5.2. Process description

The following sequence shall be complied with upon allocation of the railway capacity:

1. Preparation of the standards for the working timetable.

2. Capacity assessment (passing-through capacity of railway infrastructure) by sectors.

3. Development of new working timetables in individual sections from the railway network or for the whole railway network imposed by:

- new strategy for transportation of RI and/ or

- Change in technical parameters of the railway infrastructure in individual sections:

4. Change in the standards underlying the working timetable during its validity period.

5. Implementing joint measures to reinforce capacity in sectors with exhausted (almost exhausted) passing-through capacity:

6. Operative changes in the working timetable caused by the occurrence of accidents, building and repair works or realization of additional volume of transportation:

7. Operative interaction upon planning and management of transportation and operation of the railway infrastructure:

5.3. Technical and economic study. Capacity assessment

The purpose of the technical and economic study is:

- To get better idea about the expected demand of routes;
- To carry out successive consultations with the Railway undertakings;
- To foresee the reply of NRIC when the request for a route is actually filed.

The technical and economic study may be requested not later than 12 months prior to the working timetable enters into force so that the above objectives are fulfilled.

Upon preparing the timetable the manager shall carry out consultations and coordination with the interested parties and for 30 calendar days it provides to them the opportunity to make notes and comments (art. 19 of Regulation 41).

The procedure of carrying out consultations relating to the infrastructure capacity is presented in details in Annex 4 hereto (Section IV). Consultations on infrastructure capacity).

5.4. Scheme for requesting a path and capacity allocation processes

In the normative working timetable, which is prepared annually, the path requested by the railway undertakings are allocated in compliance with the following basic rules:

- In one route only one train may be booked;
- Along international routes more than one train may be booked, and the assignment of one train excludes the assignment of the other number of trains on that route within the day;
- Railway undertakings may not reassign routes.

5.4.1. Application for train path

Carriers shall file applications in writing to obtain capacity and paths by the railway infrastructure manager:

- once annually for the main annual working timetable and within 10 working days before it comes into force they shall sign the list of the annually booked trains;
- once a month, by the 15th day of the previous month, for all paths for trains and individual locomotives with unspecified preliminary movement schedule, requested by the carrier and approved in the working timetable and extraordinary paths, requested by the carrier, developed and approved by the Manager with the relevant document.
- Once a day for not reserved paths.

Each application for international path shall be sent to NRIC by using the attached Path Form (Annex 6 to Network Statement).

Paths intended for container transport and dangerous goods shall be specified at the time of the request and their specific conditions for inclusion shall be given in the train diagram.

5.4.2. General assumptions

Considering the normative and scheduled mode of operation of the railway transport and the business needs of the railway undertaking, the capacity is allocated by preparing annual working timetable, which governs the medium-term provision of service provision to railway undertakings.

The capacity, which remains free after such allocation is called “residual capacity”. It may be used to satisfy:

- Request received by NRIC after the deadline for submission of applications for capacity;
- Request for path to a designated place for the satisfaction of extraordinary needs of the railway undertakings.

The following designations are used in the Network Statement:

(Y + 1), where Y is the year of the Network Statement and the year (Y + 2) means the second year after publication of the Network Statement.

5.4.3. Working timetable for Year (Y + 1)

Since the working timetable (the schedule of services provided to railway undertakings) is already in force at the time of publishing this Network Statement, NRIC may allocate only the residual capacity.

Applications are processed in the order, in which they are received by NRIC.

The response time is:

- 2 calendar days if customized path is to be created;
- 1 calendar day if the path is available in the annual working timetable;
- Short-term operative planning of the train operation – within the current day.

Operative interaction upon planning and allocation of residual capacity (sequence of actions) is presented in details in Annex 4 (Section VIII Operative interaction upon planning and management of transportation and operation of the railway infrastructure).

5.4.4. Working timetable for Year (Y + 2)

It includes all international paths (for example paths agreed with RNE).

This section describes the services, which are planned until the year after the year in which the working timetable takes effect, which covers the period from Y-48 m to Y-11m (the year in which the working timetable enters into force, and 48m and 11m indicated the relevant number of months) and the mechanism for requesting international paths.

Phase A: Path profiles, studying the strategic needs for a period over one year – period Y-48m to Y-24m, where Y is the year in which the new timetable enters into force (00:01 h on the second Saturday of December), 48m and 24m means the relevant number of months.

During that phase are harmonized the capacity profiles of the corridors of RNE by solving the problems with the bottlenecks and finding the best solutions to reduce the restrictions as much as possible. The period ends with a project of RNE for strategic timetable of the relevant railway undertakings of Y-24m,

Period Y-23m to Y-12m.

Consulting the railway undertakings. Positions expressed in this framework do not bind the IM since not all factors and priorities are fixed yet.

International catalogue routes - published in Y-11m.

The purpose of these catalogues is showing the interested clients the opportunities for international routes both for the annual timetable and in response to ad-hoc requests. In this regard NRIC presents technical standard national routes, which are preliminary scheduled and which may enter in the composition of the catalogue routes. The corridor manager shall specify the catalogue routes, which are to be published. The routes catalogue may be amended as a result of maintenance works or overhauls, which are carried out on the infrastructure by one or more members. This shall be clearly communicated and the railway undertakings shall be duly informed.

Period Y-14m to Y-11m, IMs shall coordinate their actions with regard to the work on the international routes and shall agree them so that trouble-free border crossing is possible.

IMs shall meet in Y-12m to come to final decision about the catalogue routes, which will be published for each corridor individually.

Catalogue routes shall be published in one common format used for all corridors by all IMs. The format includes: Catalogue routes of RNE referred to each state; days of movements; length, weight, characteristics of the locomotive; start/ destination; main stations; remark.

The catalogue is issued by the end of Y-11m.

International commercial routes are published on the website of RNE and are responsibility of the corridor manager.

Phase B: Preliminary study (Y-18m to Y-9m).

International studies may be requested by one applicant entitled to travel along the whole path or by a group of RUs (within FTE), which combine their rights to move along the whole path. The reply to such preliminary study is a commitment that it may be used during the phase of capacity allocation.

Phase C: Detailed allocation of the routes for the annual timetable (Y-9m to Y+12m).

Period Y-8m to Y-6m (April platform of RNE for coordination of the timetable).

The deadline for receiving requests at IM is the second Monday of April before the start of the annual timetable.

Every IM shall collect the national requests for international traffic, which may be allocated.

Period Y-6m to Y-5m (July technical platform of RNE for the timetable)

IMs meet to get convinced that the orders have been fulfilled according to the requests. A check is made whether all routes coincide at the borders. For requests, which have not received a positive answer and it is not expected that solution will be found, the RUs on national level shall be notified with detailed clarifications about the reasons for the refusal.

At the meeting will be discussed additional routes, requested recently by RUs. If there are no available routes in the catalogue, these requests will be allocated in the residual capacity, if possible.

Requests for train paths sent after Y-8m may be performed only on the basis of the residual capacity.

Phase D: Allocation of paths in the residual capacity.

Residual capacity means the capacity that remained free within the already allocated paths and the scheduled works.

The final timetable is clarified and finished prior to entering into force.

Allocation of paths in the residual capacity while the timetable is in force.

In all cases, allocation of paths while the timetable is in force is made only in the residual capacity.

NRIC participates in corridor no. 9 of Rail Net Europe (fig. 7).

Requests for international traffic are given in Annex 6.

All international paths are agreed and determined after coordination of the timetables with RUs of Forum Train Europe (FTE), by taking into account the developed and existing catalogue paths along the corridors of RNE. These paths shall be identified not later than 11 months prior to the timetable enters into force.

5.5. Process of preparing timetable and determining paths

5.5.1. Preparation of the standards for the working timetable. Process of coordination

The purpose of the process of coordination is the allocation of all requested paths. Each request for capacity shall be satisfied based on the good practices upon preparing the working timetable.

5.5.1.1. Obligations and actions on the part of NRIC. Norms and rates for the working timetable from NRIC

NRIC shall present to RUs a draft of the norms and rates for the working timetable, which will enter into force in the middle of December, the same year.

Norms and rates shall include data about:

Maximum admissible speed of movement of passenger and freight trains along the railway track between stations (table 3 of Annex 2);

- Permanent speed restrictions for movement of passenger and freight trains with the location of such restrictions between stations (table 2, Annex 2);
- Maximum permissible speed of movement of trains when passing through points in stations, section points and areas between stations (table 2 of Annex 2);
- Sections and areas between stations, in which in the event of security equipment in good working order, depersonalized movement of trains is allowed (table of Annex 2).

NRIC shall provide to RUs data about the scheduled building and repair works along the railway infrastructure (table 6 of Annex 2), which shall include:

- periods and technology for their performance;
- size and duration of technologically required “windows”;
- technologically required restrictions in the speed of trains.

The activities, deadlines and obligations on the part of NRIC concerning the provision of information and data about the norms and standards for the working timetable are presented in details in annex 4 of this document (Section II Draft norms and rates for the working timetable from NRIC).

The deadlines for international paths comply with Directive 2001/14/EC and those accepted by RNE.

5.5.1.2. Obligations and actions on the part of RUs Norms and standards for the working timetable from RUs.

RU shall provide the speed of movement between the stations with regard to the rolling stock and a draft of the concise schedules of trains based on the working timetable, which enters into force in the middle of December of the same year. The concise schedules include the following data about all categories of trains:

- departure time from the departure station and arrival time at the destination stations and for specific trains it shall be indicated which time is to be priority – the departure time or the arrival time;
- stations and stops along the path and periods of stay;
- compulsory links in the junction stations;
- maximum gross weight;
- minimum brake percentage;
- maximum allowed speed of movement;
- timetable (in a file to be readable by Timetable Generator);
- type of service locomotive/ locomotives or rail-motors by sections;
- plan for composition and process times for carrying out shunting work in the stations along the path and mode of operations of station shunting;
- stations and process times for changing locomotives and carrying out technical examination;
- schedule for linking the rolling stock and the transport teams;
- schemes of correspondences (or in figures summarized by categories of trains) by polygons of the railway network.

For periods of increased volume of transportation with irregular nature, the railway carriers request additional trains. For these trains are given the data described above.

The activities, deadlines and obligations on the part of RUs concerning the provision of information and data about the norms and standards for the working timetable are presented in details in annex 4 of this document (Section III Draft norms and rates for the working timetable from NRIC).

5.5.1.3. Development of Working Timetable Phases and coordination process

The main phases upon development of the Working Timetable include:

- consultations on infrastructure capacity;
- development of NRIC and providing to RU a draft copy of the set of timetables, which indicates the zones of "windows" for building and repair works and current maintenance between stations in the individual sectors from the railway network;
- review of the draft timetable presented by NRIC and proposal in writing for the required corrections on the part of RUs;
- entering the adjustments in the timetable proposed by RU;
- carrying out meetings on the part of NRIC with the district and municipal administrations for agreeing the timetables and organization of the service of the population with passenger trains by entering the resulting adjustments in the timetables;
- agreement with the neighbouring railway administrations of the timetables and the schedule for train composition through the border transitions;
- preparing and delivery to RUs the timetables of passenger trains required for issuing a guide-book with the concise timetable and other information materials;
- preparing and delivery for printing of the formal timetable books and the schedules for trains movement;
- preparing and printing the schedule for train composition, annex to the formal timetable books on the part of RUs;

The actions, the terms and obligations on the part of NRIC and RUs upon development of the working timetable, which enters into force in the middle of December the same year and consistent with the above phases are presented in details in Annex 4 of this document (Section IV Consultation on the infrastructure capacity and Section V Development of Working Timetable).

5.5.2. Change in Working Timetable during its validity period

NRIC reserves the right upon occurrence of unforeseen circumstances or enhanced opportunities of the railway infrastructure to changes the norms and rates incorporated in the Working Timetable concerning:

- maximum allowed speed of movement;
- kilometric locations and/ or values of the constant reductions;
- permissible speeds for passing through points;
- state of the signalling, interlocking and blocking devices and the overhead network;
- inability to operate for technical reasons individual sections of the railway infrastructure.

For the above changes NRIC shall promptly notify by letter RU band shall indicate the period of their validity.

RU reserves the right:

- in the event of occurrence of needs to request changes in the timetable, the mode of use,
- the period and/ or the time schedule for movement;
- changes in the organization of service with rolling stock;
- to request extraordinary routes (not included in the Working Timetable).

When this does not require change in timetable, RU are entitled to make changes in the schedule for composition, the gross weight of trains, the organization of service of the trains with rolling stock and staff. For the above changes, RU shall inform in writing NRIC within the deadlines set down in law.

Telegrams to the interested parties shall be prepared and issued by:

- NRIC in the event of changes in the timetable, the time schedule of movement and the technical parameters (movement speeds, minimum brake percentage, type of the servicing traction rolling stock requiring change in the timetable), for extraordinary paths;

- RU in the event of changes of the schedule for composition, the maximum gross weight and the type of the servicing rolling stock, which do not require changes in the schedules.

Description of the changes of the Working Timetable during its validity period is given in Annex 4 (Section VI Change of the Working Timetable during its validity period).

5.5.3. General assumptions applicable to all lines

According to the strategy for railway transport, determined on government level, priority is given to the international freight traffic.

To achieve optimum efficiency, routes are organized in groups with identical or almost identical speed.

Categories of trains, which have identical speed.

- Freight trains: direct freight trains; block-trains;
- Passenger trains: International passenger trains; express trains; fast trains; passenger trains; suburban passenger trains.

- Individual locomotives and other vehicles.

5.5.4. Special assumptions applicable to the most loaded lines

To facilitate coordination of the most loaded lines from the network, NRIC develops for each concerned axis a programme for capacity allocation, which contains the following information:

- Description of the current situation;
- Foreseeable evolution of demand;
- Solutions, which may be implemented within a short period of time in order to optimize the offered capacity;
- Capacity allocation tables.

5.5.5. Complaints handling procedure

If an applicant is not satisfied with the proposal, then NRIC shall send the complaint to the other applicants for consideration and solution through negotiations, mutual consultations and exchange of opinions.

In case that there is no consent, further consideration may be requested by the Railway regulatory body.

5.5.6. Congested lines

In the event that after carrying out coordination of the requests it appears impossible to accept in full all requests for capacity of the infrastructure, then NRIC shall declare immediately that element of the infrastructure congested. These actions are also undertaken when there are sufficient grounds to accept that in the near future the sector of the infrastructure will become congested (art. 20, pg. 1 and pg. 2 of Regulation 41). NRIC declares that a given line is congested and that declaration shall be sent to the railway regulatory body and shall be published on the website of the Network Statement.

Within 6 months after declaring the infrastructure congested the manager shall carry out capacity analysis (art. 20, pg. 3 of Regulation 41). The objective of capacity analysis is to determine the restrictions on infrastructure capacity which prevent requests for capacity from

being adequately met, and to propose methods of enabling additional requests to be satisfied (art. 21, pg. 1 of Regulation 41).

In the event of infrastructure declared congested, the manager shall apply criteria for priority, provided in art. 32 of RTA and upon determination of priority, it shall consider the importance of the services, particularly those related to international traffic (art. 20, pg. 4 of Regulation 41).

Provided measures may refer to re-routing of services, re-timing services, speed alterations and infrastructure improvements, etc. (art.20, pg. 3 of Regulation 41).

Within six months of the completion of a capacity analysis, the infrastructure manager shall produce a capacity enhancement plan (art. 22 of Regulation 41).

The capacity enhancement plan shall be developed after consultation with users of the relevant infrastructure and shall include: the reasons for the congestion; the likely future development of traffic; the constraints on infrastructure development; the options and costs for capacity enhancement, including likely changes to charges; actions which shall be undertaken and the schedule for their implementation (art. 23 of Regulation 41).

5.6. Maintenance and building works on the railway network of NRIC

5.6.1. General

A key task of NRIC is: “performance of activities concerning development, repair, maintenance and operation of the railway infrastructure (art. 10, pg. 1, item 2 of RTA).

Maintenance and building works are required to preserve and increase the network capacity in order to satisfy the formulated requests of carriers.

The Council of Ministers by proposal of the Minister of Transport and Communications shall adopt a long-term programme for development performance the railway infrastructure and its safe and reliable operation, including in the event of crises (natural disasters, terrorist acts and military conflicts) (art. 27 of RTA).

The Minister of Transport and Communications shall approve the annual programme on building, maintenance, repair, development and operation of the railway infrastructure. This programme shall also provide organizing the repair for restoration of individual elements of the railway infrastructure after natural disasters and productions breakdowns (art. 28 of RTA).

5.6.2. Periods for realization of approved work

The infrastructure manager shall provide a reserve of capacity for carrying out building or repair works on the infrastructure by taking into account adequately the influence on the applicants for capacity. Reserve of capacity shall be provided even in the event of congested infrastructure (art. 14, pg. 2 of Regulation 41).

It is made on the basis of the long-term programme for development of the railway infrastructure adopted by the Council of Ministers and on the basis of the annual programme approved by the Minister of Transport and Communications. In this regard are determined the scheduled windows, which shall be laid down in the Working Timetable.

5.6.3. Intervals for performance of special works

Annually latest by 30 March NRIC shall provide to RUs the schedule for the building and repair works on the railway infrastructure, which shall indicate:

- periods and technology for their performance;
- size and duration of technologically required “windows”;
- technologically required restrictions in the speed of trains.

For the sectors and areas between the stations where activities are performed for current maintenance of the railway infrastructure, in the Working Timetable shall be laid down the use of technological "windows" in the size up to - 6 hours depending on the capacity of the relevant sector.

Facilities, which commissioning is planned during the validity period of the new timetable, with their technical and operational parameters and the dates of their commissioning.

During the consultations on the allocation of the capacity of the railway infrastructure between NRIC and RUs shall be guaranteed the implementation of the scheduled building and repair works on the railway infrastructure.

Latest by July 15th, the Department of Train Schedules with NRIC shall develop and present to RU a draft of the set of timetables and on magnetic carrier the detailed schedules for the trains included in the Timetable.

The zones of the "windows" for building and repair works and current maintenance for the areas between the stations in the individual sectors of the railway network shall be indicated in the draft copy of the timetable.

5.6.4. Unscheduled works

In the event of disturbance to train movements caused by technical failure or accident the Head of NRIC shall draw up an action and intervention plan indicating the authorities, which shall assist for the elimination of the disturbance (art. 14, pg. 4 of Regulation 41). As an exception in the event of failure or accident making the infrastructure temporarily unusable, the paths allocated may be withdrawn without warning for as long as is necessary to repair the system (art. 14, pg. 5 of Regulation 41).

Actions and special measures in the event of disturbances are described in Annex 3 of this document.

5.7. Use and rules for cancellation

The infrastructure manager may withdraw an allocated path mainly in the event of congested infrastructure, when the carrier uses that path for at least one month below the thresholds specified in the Network Statement and the contract with the relevant carrier on the condition the insufficient use is not caused by reasons beyond the carrier's control (art. 24, pg. 1 of Regulation 41).

5.8. Ad hoc transport and dangerous cargo

The whole information referring to special goods shipments shall be provided to NRIC at the time of path requesting.

5.9. Special measures in the event of malfunction

Measures applicable to malfunction management are specified in Annex 3 hereto.

6. SERVICES

6.1. Legal Framework

Services are provided pursuant to the provisions of the Railway Transport Act (promulgated SG, No. 97/2000) and Regulation No. 41 of 27.06.2001.

6.2. Minimum package of services.

Services included in the access to the railway infrastructure are:

1. Processing requests for using the infrastructure capacity;
2. Right to use the allocated capacities;
3. Use of railway tracks in the operational points;
4. Signalling, regulation, traffic management, communication and provision of information about train movement;
5. Other information required for introduction and operation of the service, for which capacity is provided.

6.3. Service and maintenance

Service and maintenance include:

1. Use of the system for power supply to the electrical traction, if available;
2. Use of refueling facilities;
3. Use of buildings and other equipment in the passenger stations (item 7.3.2);
4. Use of loading platforms and terminals;
5. Use of the shunting yards;
6. Use of the stations for train composition;
7. Use of tracks for parking the vehicles (item 7.3.2);
8. Use of facilities for maintenance and other technical equipment.

6.4. Additional services

The additional services include:

1. Supplying traction power;
2. Preliminary heating of passenger carriages;
3. Supplying fuel and creating conditions for shunting operations;
4. Performance of contracts for transportation of dangerous goods, incl. control activities, assistance for the movement of special train compositions.

6.5. Accompanying services

The accompanying services include:

- Providing access to the telecommunication network (item 7.3.4.);
- Providing additional information;
- Ensuring technical inspection of the rolling stock, etc (item 7.3.4).

(Annex to art. 7, pg. 1 and art. 17, pg. 2 of Regulation 41)

The accepted request gives right to use the infrastructure by paying the relevant charges and in the event of additional agreement between the carrier and NRIC against payment may be provided the additional services according to the annex based on the published price list (art. 17 of Regulation 41).

Payment for the services and maintenance, as well as for the additional and accompanying services is not included in the infrastructure charges (art. 7, pg. 11 of Regulation 41).

7. CHARGES

7.1. Legal framework

Access and use of the railway infrastructure are treated by:

- The Railway Transport Act;
- Regulation 41 on access and use of the railway infrastructure;

- Tariff for infrastructural charges, collected by NRIC, approved by Government Decree.

The railway carriers shall use the railway infrastructure against payment the charge under art. 43 of RTA, the price for service and maintenance and the price of additional and accompany services if such are provided pursuant to the contract with NRIC.

7.2. Methods of charging

The methods of charging is based on the marginal costs for maintenance of the railway infrastructure by using the econometric approach for their determination.

7.2.1. Determination of marginal costs

In these methods the marginal costs are determined for maintenance of the railway infrastructure.

Marginal costs are determined as a derivative of costs relative to traffic. Traffic may be assessed as train-kilometres or as gross-ton-kilometres.

$$MC = \frac{\partial C}{\partial Tr} = \frac{\partial C}{\partial Qbr} = \frac{1}{L} \cdot \frac{\partial C}{\partial Q} = \varepsilon \cdot AC$$

MC - marginal costs;

C - costs for the maintenance of the railway infrastructure;

L - length of the railway sector (it is a constant value and in case of differentiation it may be taken out before the differential);

Qbr - gross-ton-kilometres realized in the railway sector;

Q - gross-tons realized in the railway sector;

ε - coefficient of costs elasticity for maintenance of the railway infrastructure relative to the realized gross tons;

AC - average costs determined per gross-ton-kilometre or train-kilometre depending on the selected indicator for assessment of the marginal costs. In this case these are gross-ton-kilometres.

The railway network is divided into: 19 railway sectors; a group including the secondary lines; main railway junctions: Railway junction Sofia, railway junction Gorna Oryahovitsa, railway junction Ruse; central station Sofia. Data about these railway sites refer to 2006 and 2007.

For each railway section the marginal costs are determined as follows:

$$MC_i = \frac{\partial C_i}{\partial Tr_i} = \frac{1}{L_i} \cdot \frac{\partial C_i}{\partial Q_i}, \text{ where } i \text{ is the index of the railway sector (the railway site).}$$

If the above formula is multiplied by $\frac{C_i}{Q_i} \cdot \frac{Q_i}{C_i}$, then nothing will change and the following will be obtained:

$$MC_i = \frac{\partial C_i}{\partial Tr_i} = \frac{1}{L_i} \frac{\partial C_i}{\partial Q_i} \frac{C_i}{Q_i} \cdot \frac{Q_i}{C_i} = \frac{1}{L_i} \frac{\partial C_i}{C_i} \frac{Q_i}{\partial Q_i} \frac{C_i}{Q_i} = \frac{\partial \ln C_i}{\partial \ln Q_i} \frac{1}{L_i} \frac{C_i}{Q_i} = \frac{\partial \ln C_i}{\partial \ln Q_i} \frac{C_i}{Qbr_i}$$

Please consider that in order to come to the end result, the following transformations have been made:

$$\frac{\partial C_i}{C_i} = \partial \ln C_i; \quad \frac{Q_i}{\partial Q_i} = \frac{1}{\partial \ln Q_i}; \quad \frac{\partial C_i}{C_i} \frac{Q_i}{\partial Q_i} = \frac{\partial \ln C_i}{\partial \ln Q_i}; \quad L_i Q_i = Qbr_i$$

Finally we get the following for the marginal costs:

$$MC_i = \frac{\partial C_i}{\partial Tr_i} = \frac{\partial C_i}{\partial Qbr_i} = \frac{\partial \ln C_i}{\partial \ln Q_i} \frac{C_i}{Qbr_i} = \varepsilon_i AC_i, \text{ where:}$$

ε_i - coefficient of elasticity of costs for a given sector relative to the realized (transported) gross-tons;

AC_i - average costs for the sector determined for gross-ton-kilometre.

The task is to determine the costs C , by using the available data about the condition of the railway infrastructure, the traffic and the costs for maintenance for a specified number of years. The function is of the following general type - $C = f(I, Tr, D, T)$. It incorporated five types of data: for the infrastructure (I), for the traffic (Tr), fictitious variables (D), data about costs (C) and fictitious variables specifying the year to which these data refer (T).

The idea is to get an econometric model of the type:

$\ln(C) = \alpha + \beta_1 \ln(Tr) + \beta_2 [\ln(Tr)]^2 + \beta_3 [\ln(Tr)]^3 + \beta_j \ln(I) + \gamma_k D + \delta_l T$, where: the index j refers to the number of variables referring to the railway infrastructure; the index k refers to the number of fictitious variables, which influence is reported and the index l refers to fictitious variable reporting the years.

By using the above equation, we get the following for the marginal costs:

$$MC_i = \frac{\partial C_i}{\partial Tr_i} = \frac{\partial C_i}{\partial Qbr_i} = \frac{\partial \ln C_i}{\partial \ln Q_i} \frac{C_i}{Qbr_i} = \varepsilon_i AC_i = \left[\beta_1 + 2\beta_2 \ln Q_i + 3\beta_3 (\ln Q_i)^2 \right] \frac{C_i}{Qbr_i}.$$

You can see that the coefficient of elasticity is:

$\varepsilon_i = \beta_1 + 2\beta_2 \ln Q_i + 3\beta_3 (\ln Q_i)^2$, and the average costs are:

$$AC_i = \frac{C_i}{Qbr_i}.$$

7.2.2. Econometric model.

1. *Data about infrastructure.*

- length of railway line - L_i ;

- coefficient reporting the overall length of the railway line relative to length -

$$K_i = \frac{L_{razg,i}}{L_i};$$

- number of stations in the sector - G_i ;

- lines with speed higher than 90 km. (fictitious variable) - $D_{L,i}^{>90}$

2. *Traffic data.*

- gross-tons realized in the railway sector - Q_i ;

- proportion between gross-ton-kilometres realized by the freight transportations and gross-ton-kilometres realized by the passenger transportation - $\frac{Qbr_{tov,i}}{Qbr_{patn,i}}$.

3. *Fictitious variables connected with:*

- costs realized in secondary lines - $D_{vl,i}$;

- costs realized in railway junction Sofia - $D_{VS,i}$;

- costs realized in central station Sofia - $D_{CG,i}$;

- costs realized in railway junction Gorna Oryahovitsa - $D_{VGO,i}$;

- costs realized in railway junction Ruse - $D_{VR,i}$;

4. Data about the year.

- fictitious variable for 2006 - D_{2006} ;
- fictitious variable for 2007 - D_{2007} .

5. Data about costs.

- costs for railway sector. - C_i ;
- logarithm of costs for the railway sector - $\ln(C_i)$.

6. Random component - v_i .

The equation will be:

$$\ln(C_i) = \alpha + \beta_1 \ln(Q_i) + \beta_2 [\ln(Q_i)]^2 + \beta_3 [\ln(Q_i)]^3 + \beta_4 \ln(L_i) + \beta_5 \ln\left(\frac{L_{razg,i}}{L_i}\right) + \beta_6 D_{L,i}^{>90} + \beta_7 \ln\left(\frac{Qbr_{tov,i}}{Qbr_{patn,i}}\right) + \beta_8 \ln(G_i) + \gamma_1 D_{vl,i} + \gamma_2 D_{VS,i} + \gamma_3 D_{CG,i} + \gamma_4 D_{VGO,i} + \gamma_5 D_{VR,i} + \delta_1 D_{2006} + \delta_2 D_{2007} + v_i$$

Considering that $MC_i = \frac{\partial \ln C_i}{\partial \ln Q_i} \frac{C_i}{Qbr_i} = \varepsilon_i AC_i$ and $\ln(C_i)$ of the above formula is replaced, then we will get:

$$MC_i = \varepsilon_i AC_i = \left[\beta_1 + 2\beta_2 \ln Q_i + 3\beta_3 (\ln Q_i)^2 \right] \frac{C_i}{Qbr_i} .$$

The coefficients have the following values:

$$\begin{aligned} \beta_1 &= 0,405373 ; \\ \beta_2 &= -0,06701 ; \\ \beta_3 &= 0,002814 . \end{aligned}$$

The values of the required coefficients β_1 , β_2 and β_3 have been obtained on the basis of data for 2 years - 2006 and 2007 for 19 main railway sections, secondary lines and main railway junctions.

After getting the required coefficients, the function of the marginal expenses will be of type:

$$MC_i = \varepsilon_i AC_i = \left[0,405373 - 2,0,06701 \cdot \ln Q_i + 3,0,002814 \cdot (\ln Q_i)^2 \right] \frac{C_i}{Qbr_i} .$$

The coefficient of elasticity is:

$$\varepsilon_i = 0,405373 - 2,0,06701 \cdot \ln Q_i + 3,0,002814 \cdot (\ln Q_i)^2$$

For each railway section have been obtained coefficients of elasticity, average costs and marginal costs. On their basis have been obtained the average value of the coefficient of elasticity for the railway network - $\varepsilon = 0,3328348$ and the average costs for gross-ton-kilometre - **0,011923938 BGN**.

Marginal costs are **0,0039687 BGN/gross-ton-km**, and they are obtained as follows:

$$MC = \varepsilon \cdot AC = 0,3328348 \cdot 0,011923938 = 0,0039687 \text{ BGN/ gross ton km.}$$

7.2.3. Determination of infrastructural charges on the basis of the marginal costs for maintenance of the railway infrastructure.

Determination of infrastructural charges is made on the basis of the obtained marginal costs per gross-ton-kilometre and the normatively adopted average value of the gross weight

of a train for the railway network. On this basis are obtained the average costs for the network per train kilometre.

Considering that the average gross weight of one train (including the weight of the locomotive) is 1045 tons (normatively recognized), the average rate per ton kilometre is 4,15 BGN.

The method of coefficients is used to adjust the infrastructural charges by market segments.

On the table below are given the values of the coefficients taking into account the market segment and the relevant infrastructural charges.

| Averaged rate – 4.15 BGN/train km. | | |
|--|--------------------------------------|--------------------|
| Market segment (type of railway transportation) | Averaged rate (BGN/train km.) | Coefficient |
| Freight trains | 7,3362 | 1,77 |
| Express and international passenger | 5,8052 | 1,4 |
| Block trains | 5,125 | 1,4 |
| Passenger, fast and suburban trains and individual machines on lines of I category | 2,9526 | 0,7 |
| Passenger, fast and suburban trains and individual machines on lines of II category | 1,4764 | 0,35 |

The structure of charges is important too. The structure is determined by the percentage ratio of the basic components of the charge to its total value. The basic components include: Booking charge, railway track charge, charge for electrotechnical facilities, charge for the overhead network and charge for traffic control.

The values of components, percentages and types of trains are given on the table below.

| Component | Freight trains | | Express and international passenger trains | | Block trains | | Passenger, fast and suburban trains and individual machines on lines of I category | | Passenger, fast and suburban trains and individual machines on lines of II category | |
|--------------------------|----------------|---------|--|---------|--------------|---------|--|---------|---|---------|
| | | | | | | | | | | |
| Booking | 0,9997 | 13,63% | 0,531 | 9,15% | 0,6998 | 13,65% | 0,2654 | 8,99% | 0,1327 | 8,99% |
| Railway track (train-km) | 3,4485 | 47,01% | 3,1 | 53,40% | 2,4035 | 46,90% | 1,6 | 54,19% | 0,8 | 54,19% |
| El.facilities | 0,4678 | 6,38% | 0,4566 | 7,87% | 0,3275 | 6,39% | 0,2283 | 7,73% | 0,1196 | 8,10% |
| Overhead network | 0,3668 | 5,00% | 0,2609 | 4,49% | 0,2567 | 5,01% | 0,1305 | 4,42% | 0,049 | 3,32% |
| Traffic control | 2,0534 | 27,98% | 1,4567 | 25,09% | 1,4375 | 28,05% | 0,7284 | 24,67% | 0,3751 | 25,41% |
| Total train-km | 7,3362 | 100,00% | 5,8052 | 100,00% | 5,125 | 100,00% | 2,9526 | 100,00% | 1,4764 | 100,00% |

The charge for the railway track is determined for gross-ton-kilometre; however that will not change the proportions. For empty wagons are applied the same charges as for the passenger trains.

The table below gives the final structure and the values of infrastructural charges laid down in the normative base.

| Train category | Booking | | Passing | | | | | | | |
|--|-----------------|------------------|------------------|----------------|------------------|-----------------|-------------------|----------------|------------------|-----------------|
| | Category I line | Category II line | Category I Lines | | | | Category II Lines | | | |
| | Train km. | Train km. | Railway track | El. facilities | Overhead network | Traffic control | Railway track | El. facilities | Overhead network | Traffic control |
| | | | Gross ton km | Train km. | Train km. | Train km. | Gross ton km | Train km. | Train km. | Train km. |
| Passenger, fast and suburban trains | 0,2654 | 0,1327 | 0,0016 | 0,2283 | 0,1305 | 0,7284 | 0,0008 | 0,1196 | 0,049 | 0,3751 |
| Individual machines | 0,2654 | 0,1327 | 0,0016 | 0,2283 | 0,1305 | 0,7284 | 0,0008 | 0,1196 | 0,049 | 0,3751 |
| Express and international passenger trains | | 0,531 | 0,0031 | 0,4566 | 0,2609 | 1,4567 | 0,0031 | 0,4566 | 0,2609 | 1,4567 |
| Freight transportation | | 0,9997 | 0,0033 | 0,4678 | 0,3668 | 2,0534 | 0,0033 | 0,4678 | 0,3668 | 2,0534 |
| For transportation of containers and/or trucks with block trains | | 0,6998 | 0,0023 | 0,3275 | 0,2567 | 1,4375 | 0,0023 | 0,3275 | 0,2567 | 1,4375 |
| Empty wagons | | | | | | 0,0016 | | | | 0,0008 |

7.3. System of charging

7.3.1. Structure of infrastructural costs

The costs for maintenance and repair of the infrastructure include costs by economic elements of the infrastructural units and the infrastructural part of the Division of Traffic Control and Capacity Management.

Permanent way and Structures Division

Costs referring to the main business of the division:

- For materials, fuel, depreciation, external services, salaries and social security contributions of workers connected with the current maintenance, average-size repair and general repair of the railway track, maintenance of the earth bed, the station tracks, points, maintenance and current repair of crossings, renewal of railway track, repair of railway facilities, bridges, tunnels, buildings.

Costs connected with the auxiliary activity, general production, administrative – management costs.

- Repair of heavy-duty and light-duty machines, vehicles, traction-engines, building and repair works of railway sections, maintenance of nursery-gardens, flower-stands.

- For materials, fuel, electric power, depreciation, external services.

Signaling and Telecommunications Division

The main part of the costs of the division refers to its main business. They include costs for:

- salaries, social security contributions of worker, connected with the current repair and maintenance of - TT messages and cable lines, mechanical and electrical security systems, automatic and semi-automatic block systems, centralized traffic control, costs for electrotechnical laboratory, high-current systems with high and low voltage, ticket printing machines, ticket issuing printers.

- materials, fuel, electric Power, depreciation, external services.

Power Supply Division

The costs of this division for its main business refer to:

- salaries and social security contributions of workers for maintenance and current repair of the overhead network, traction substations, costs for machines for maintenance and repair of the overhead network and traction substations.

- materials, fuels, electric power, depreciations for the overhead network and traction substations, external services.

Train Operation and Capacity Management Division

Costs connected with the maintenance and repair of the station facilities, as part of the costs of the Train Operation and Capacity Management Division referring to the operation of the infrastructure in the stations (individual passenger stations, freight stations, shunting yards and stations with mixed activity). They include costs for:

- Salaries of workers (shift manager, traffic controller, traffic manager, post switchman, workers for maintenance and repair of station facilities), involved in that activity.

- Current repair and overhaul of the buildings in the stations.

- Materials, fuel, electric power, depreciation, external services.

The structure of costs connected with the maintenance and the repair of the infrastructure is according to the currently applicable distribution of costs in NRIC.

7.3.2. Determination of the global size of charges

For the services, which the infrastructural enterprise provides to the carriers charges are imposed, bound with the costs connected directed for the different services.

The amount, which NRIC shall receive from the access charges, shall ensure recovery of costs connected with the current maintenance and repair of the railway infrastructure. These are activities related to current repair of railway lines, stations, facilities, security devices, power supply and telecommunication systems and operation of the railway infrastructure.

The activities of NRIC on building and development of the railway infrastructure is financed by the Government Budget within long-term contract by taking into consideration the contribution of the infrastructure to the business and social life of the nation, the advantages with regard to the environment, safety and energy.

Based on the summarized report on costs allocation about the activity of NRIC by type of traffic are presented the general costs for the activity of the infrastructural facilities, including those connected with current repair and repair of infrastructure (without depreciation allowance).

The costs for current maintenance of the Railway Track and Facilities Division include the costs for average-size repair, carried out by way of business and by assignment, which represent about 9 – 10% of the total costs of the division.

7.3.3. Formation of charges

The model of determination of charges for access and use the infrastructure proposes that the infrastructural charges are in the form of:

Fixed charge

The determination of that charge shall be assumed as a price for booking and access to infrastructure.

That price refers to train-kilometre of the used route with different prices for electrified and non-electrified routes.

No fixed fee is applicable for narrow-gauge lines.

It is determined individually for passenger and freight transportation.

Variable fee

It includes the fee for:

- Use of railway track – refers to gross ton-kilometre;
- Use of electrical systems – refers to train-kilometre;
- Use of overhead network – refers to train-kilometre;
- Traffic control – refers to train-kilometre;

It is determined individually for passenger and freight transportation.

Determination of fixed charge

Fixed charges represent 20% of the costs for current maintenance of infrastructure. They shall ensure recovery of costs related to traffic control and management (accounting system, offices ensuring the operation of the infrastructure) i.e. the maintenance of the network in ready-to-use state even in the event of lack of train movement.

The sectors of the railway network are grouped in electrified and non-electrified 1st and 2nd category.

Determination of variable charge

The determination of variable charges is based on the following assumptions: The level of charges is proportional to the costs made in the network or in particular sector for current maintenance and repair of the infrastructure.

Costs for current maintenance and repair of the railway infrastructure is distributed by sectors of the railway network for the purpose of determination of access charges, which correspond to expenses made for them.

That distribution is made with developed model Determination of Costs and Rates of Costs by sectors from the railway network by type of transportation.

The model determines the general costs for the activity of NRIC by types of activities, however for determination of the infrastructural charges is used only the part referring to the costs for current maintenance and repair of the railway infrastructure.

The developed model for determination of the infrastructural charges allows defining the variable charges by sectors of the railway network or by categories of sectors.

The allocation of variable charges is carried out by 80 sectors from the railway network, which completely determine the configuration of the railway infrastructure and characterize the operational work. If necessary these sectors may be made bigger.

7.3.4. Determination of the general charge for access and use of the railway infrastructure

Charges are calculated for each particular train for a period of its movement within the draft timetable.

The general fee for a particular train represents the sum total of the fixed and variable charge.

$$T_i = T_{\text{fixed}, i} + T_{\text{variable}, i} \text{ (BGN)}$$

where:

$T_{\text{fixed}, i}$ – fixed charge for i -th train

$T_{\text{variable}, i}$ – variable charge for i -th train

$T_{\text{fixed}, i} = L_{i, \text{el}} * C_{\text{fixed el.}} + L_{i \text{ non-el.}} * C_{\text{variable non-el.}}$ (BGN)

$L_{i, \text{el.}}$ – a part of the arm length in electrified sector (train-km)

$L_{i, \text{non-el.}}$ – a part of the arm length in non-electrified sector (train-km)

$C_{\text{fixed el.}}$ – price for booking and access to railway infrastructure in electrified sector (BGN/train-km)

$C_{\text{variable non-el.}}$ – price for booking and access to railway infrastructure in non-electrified sector (BGN/train-km)

The variable charge for using the railway infrastructure for a particular train represents the amount of the charges by types of activities

$T_{\text{variable. } i} = T_{\text{variable. } i \text{ rail.}} + T_{\text{variable. } i \text{ el.}} + T_{\text{variable. } i \text{ Km.}} + T_{\text{variable. } i \text{ mov.}}$

Charge for using the railway track

The price for using the railway track refers to the ton-kilometre work, realized on the relevant sector.

$T_{\text{variable. rail. } i} = \sum L_{i,j} * Q_i * C_{j \text{ rail.}}$ (BGN)

where:

Q_i – weight of i – th train in tons. This weight includes the weight of locomotive too.

$L_{i,j}$ – length of j - th sector along the path of the i – th train in kilometres

$C_{j \text{ rail.}}$ - price for the relevant category of the sector to which belongs the j -th sector in BGN/ton-km.

Charge for using the electrical system

The price for using the electrical systems refer to train-kilometre work realized by the relevant sector.

$T_{\text{variable. Elsys } i} = \sum L_{i,j} * C_{\text{el.sys. } j}$ (BGN)

where:

$L_{i,j}$ – length of j - th sector along the path of movement of the i – th train in kilometres

$C_{\text{el.sys. } j}$ – price for the relevant category of the sector to which belongs the j - th sector or for the particular j – th sector (BGN/train-km)

Charge for using the overhead network

The price refers to train-kilometre work realized along the relevant sector. It is determined for electrified sectors.

$T_{\text{variable. km. } i} = \sum L_{i,j} * C_{\text{km. } j}$ (BGN)

where:

$L_{i,j}$ – length of j - th sector along the path of movement of the i – th train in train-kilometres

C_{j} - price for the relevant category of the sector to which it belongs the j -th sector in BGN/ton-km.

Note: Not charged for movement of trains with diesel traction in electrified sector.

Traffic control charge

The price refers to train-kilometre work realized along the relevant elementary sector.

$$T_{\text{traffic. } i} = \sum L_{I. j} * C_{\text{traffic } I. J} \quad (\text{BGN})$$

where:

$L_{I. j}$ – the length of j -th sector along the route of i -th train (km)

$C_{I. J}$ – price for the relevant category of the sector BGN/train-km.

7.3.5. Application of infrastructure charging

The charge for using the railway infrastructure depends on the influence of the vehicles on it and the type of trains, which are moving along it.

Infrastructural charges are differentiated and determined depending on the type of trains, which are divided in the following groups:

1. passenger trains;
2. freight trains.

Infrastructural charges for passenger trains are collected for movement of carriages, wagons for transportation of passenger cars, restaurant-cars, sleeping-cars, laboratory cars, laboratories - rail-motors and inspection machines, mail cars or milk tank cars, included on the composition of a passenger cars, empty freight wagons, traction machines in individual movement.

Infrastructural charges for freight trains are collected for the movement of full freight trains, road-building machines, different kinds of tractors and specialized tracked self-propelled machines.

The charge for using the railway infrastructure by the traction machines is paid depending on their participation in the passenger or freight train.

No infrastructural charges are collected for the movement of repair and fire-fighting trains or locomotives designated to restore interrupted movement of trains in the event of natural disasters for specific regions of the country, grass-cutting trains and weigh trains.

7.4. Tariffs

7.4.1. Tariff of infrastructural charges, collected by the railway infrastructure manager (effective from 01.01.2010)

Art. 1. (1) Infrastructural charges include the charge for booking the capacity of the railway infrastructure and the charge for the passing along the railway infrastructure.

(2) The charge for passing along the railway infrastructure includes the charges for using the railway track, the electrical installations, the overhead network and the power supply facilities and the traffic security and management systems.

Art. 2. (1) The following charges are collected for booking capacity of the railway infrastructure:

1. For passenger transportation with fast, passenger and suburban trains.
 - a) along category I railway track – 0,2654 BGN per train-kilometre;
 - b) along category II railway track – 0.1327 BGN per train-kilometre;
2. For passenger transportation with express and international trains – 0,5310 BGN per train-kilometre.
3. For freight transportation - 0.9997 BGN per train-kilometre.
4. For transportation of containers and/ or trucks with block trains - 0.6998 BGN per train-kilometre.

(2) The charge is calculated per train-kilometre from the booked route.

(3) The charge is paid by the 5th day of each calendar month.

Art. 3. The following charges shall be paid for passing of a passenger train along the railway infrastructure depending on the category of the railway track:

1. Along category I railway tracks:

- a) for railway track - 0.0016 BGN per gross ton kilometre;
- b) for electrical systems - 0,2283 BGN per train-kilometre;
- c) for overhead network - 0.1305 BGN per train-kilometre;
- d) for traffic control - 0.7284 BGN per train-kilometre;

2. Along category II railway tracks:

- a) for railway track – 0,0008 BGN per gross ton kilometre;
- b) for electrical systems - 0.1196 BGN per train-kilometre;
- c) for overhead network - 0.0490 BGN per train-kilometre;
- d) for traffic control - 0.3751 BGN per train-kilometre;

3. For passenger transportation with express and international trains depending on the category of the railway track:

- a) for railway track - 0.0031 BGN per gross ton kilometre;
- b) for electrical systems - 0.4566 BGN per train-kilometre;
- c) for overhead network - 0.2609 BGN per train-kilometre;
- d) for traffic control - 1.4567 BGN per train-kilometre;

Art. 4. (1) The following charges shall be paid for passing of a freight train along the railway infrastructure independent of the category of the railway track:

- a) for railway track - 0.0033 BGN per gross ton kilometre;
- b) for electrical systems - 0.4678 BGN per train-kilometre;
- c) for overhead network - 0.3668 BGN per train-kilometre;
- d) for traffic control - 2.0534 BGN per train-kilometre;

(2) For transportation of containers and/ or trucks with block trains regardless of the category of the railway track, the following charges shall be paid:

- a) for railway track - 0.0023 BGN per gross ton kilometre;
- b) for electrical systems - 0.3275 BGN per train-kilometre;
- c) for overhead network - 0.2567 BGN per train-kilometre;
- d) for traffic control - 1.4375 BGN per train-kilometre;

Art. 4a. For passing of empty wagons along the railway infrastructure depending on the category of the railway line, the following charges for railway track shall be paid:

- a) along category I railway track – 0.0016 BGN per gross ton kilometre;
- b) along category II railway track – 0.0008 BGN per gross ton kilometre;

Art. 5. The charges under art. 3 and 4 shall be paid centrally after the end of the current month however not later than 2 months from the date of completion of the movement of the first train in the month.

Art. 6. The railway infrastructure manager shall determine the size of the charges within the specified limits in compliance with art. 35 of the Railway Transportation Act, which are valid for all railway carriers.

7.4.2. Service and maintenance price

The service and maintenance and the related price lists are given in Section I of Annex 7.

7.4.3. Price of ancillary services

Ancillary services and the related price lists are given in Section II of Annex 7.

7.4.4. Prices of other services offered by NRIC

The list of other services and the related price lists are given in Section III of Annex 7.

7.5. Change in charges

7.5.1. Procedure of changing the levels of infrastructure charges.

Annually until June 30 NRIC provides to IARA information about the actually incurred costs for the current maintenance of the railway infrastructure for the previous year and specifies the required level of infrastructural charges for the next year.

The required level of charges may include extras, compensations and/ or discounts resulting from the implementation of infrastructural projects, from the traffic and the requirements of the transport market differentiated for parts of the railway infrastructure, which are publicly announced.

The period of validity of this tariff is one year (art. 7, pg. 10 of Regulation 41). The term may be shorter if art. 7, pg. 13 of Regulation 41 is applied i.e.: “Based on the information under art. 7, pg. 10 the Executive Director of IARA, if necessary, shall prepare a proposal for change of the size of infrastructural charges.

The change in the size of the infrastructural charges is declared publicly 3 months prior to the date it enters into force.

7.5.2. Procedure of changing the levels of infrastructure charges.

Change in the methods, the charging system and the size of the infrastructural charges is forthcoming.

7.6. Invoicing and payment procedure

These procedures lay down the charges due for access and use of the railway infrastructure.

They are described in details in ANNEX 5: CHARGING AND PAYMENT PROCESS.

7.7. Schemes reporting the functioning

I. Penalties, compensations and incentives

1. In case of train delay.

1.1. When a freight train has delay due to reasons, for which the Infrastructure Manager is responsible, the responsible party pays to the Railway Undertaking penalty equal to BGN 1.40 per minute per train for every one minute delay after expiration of the 60 minutes from the departure time or arrival according to the confirmed train timetable valid for the current train operation. The penalty is payable per minute and separately for the departure from the forwarding station and for arrival at the destination station.

1.2. When a passenger train has delay and Infrastructure Manager is responsible, after the third minute of the delay, the responsible party pays to the Railway Undertaking penalty equal to BGN 2.50 per minute for every station where the train stops according to the timetable and the delay is determined.

1.3. When a freight train has delay and Railway Undertaking is responsible, the responsible party pays to the Infrastructure Manager penalty equal to BGN 1.40 per minute per train for every one minute delay after expiration of the 60 minutes from the departure or arrival time

according to the confirmed train timetable valid for the current train operation. The penalty is payable per minute and separately for the departure from the forwarding station and for arrival at the destination station.

1.4. When a passenger train has delay and Railway Undertaking is responsible, after the third minute of the delay the responsible party pays to the Infrastructure Manager penalty equal to BGN 2.50 per minute for every station where the train stops according to the timetable and the delay is determined.

1.5. In a case when a third party is responsible for the train delay the Infrastructure Manager pays to the Railway Undertakings the relevant penalties and presents them to the party responsible for the delay (third party).

1.6. In case when other Railway Undertaking is responsible for the train's delay the Infrastructure Manager pays relevant penalties to the Railway Undertaking operating the delayed train. The penalty paid and all expenditures incurred by the Infrastructure Manager for the services in accordance with price list should be recovered to the Infrastructure Manager by the Railway Undertaking caused the delay.

1.7. To determine the delaying time of passenger and freight trains as well as the reasons for them the parties sign a template protocol. The protocol should be prepared and signed by the Infrastructure Manager and all Railway Undertakings related with the caused delay.

1.8. For trains operating within the borders of one Train and Station Operation Management Division (TSOM) the protocol is prepared by the Movement and Station Operation Department of the relevant TSOM. The protocol is prepared on the basis of the train dispatchers' working schedule reports and is submitted for every party involved.

1.9. For trains operating within the borders of two and more TSOM Divisions the protocol is prepared by the Central Dispatcher Control Department (CDC) of Train Operation and Capacity Management Division (TOCM). The protocol is prepared on the basis of the train dispatchers' working schedule reports and is submitted for every party involved.

1.10. In case of disagreement for signing the protocol by any one of parties involved the actual legislation of the Republic of Bulgaria is applicable.

2. In case of changed train route.

2.1. When the train's route of reserved trains is amended and extended at the request or due to cause of the Railway Undertaking, the Railway Undertaking pays to the Infrastructure Manager total amount of the performed in excess train kilometers and gross ton kilometers.

2.2. When the train's route of reserved trains is amended and extended at the request or due to cause of the Infrastructure Manager, the Railway Undertaking does not pay for the performed in excess train kilometers and gross ton kilometers.

2.3. In case of train route change the Infrastructure Manager and the Railway Undertaking are paying each other compensations for possible additional losses such as: delay and cancellation of possessions, prolonged working time of the operating and other personnel, non-adherence to the freight delivery time and other losses, proved by the relevant documents.

3. Trains cancellation

3.1. When the reserved train route is cancelled at the request or due to cause of the Railway Undertaking, the Infrastructure Manager does not recover the fee paid for the capacity reservation.

3.2. When the reserved train route is cancelled at the request or due to cause of the Infrastructure manager, the fee paid for the capacity reservation is recovered to the Railway Undertaking.

3.3. In case of transboarding of passengers trains due to reasons of the Infrastructure Manager or third parties, who are in contracting relations with the Infrastructure Manager, the Infrastructure Manager owes to the Railway Undertaking the expenditures for the transboarding and the price of the returned tickets discounted with the amount of the infrastructure charges, which are not calculated to the transboarding trains.

3.4. In case of cancellation of reserved trains at the request or due to cause of the Infrastructure Manager, the Infrastructure Manager pays the real losses incurred from the train's cancellation and proved by the relevant documents.

II. Measures for the improvement of the network performance

1. In the annual train timetable might be established and approved train paths, for which the annual fee for capacity reservation is not preliminary paid with entering into force of the train timetable. The abovementioned train paths are up to 10% of the total number of the reserved train paths expressed in average daily train kilometers separately for each train type and isolated vehicles.

2. When by reason or at request of the Railway Undertaking freight train departs from forwarding station with more than 60 minutes before or 60 minutes after (with delay) set in the train timetable departure time for the relevant train, a written request made by the Railway Undertaking for preparation of correction of the train timetable for the relevant date should be made.

3. For the correction under p. 2 as well as for consequent corrections of other trains in the train timetable despite who is the operator of corrected trains, the Railway Undertaking requested correction pays to NRIC the approved in accordance with actual price list included in section III, p. 4, prices for services used.

4. When the Railway Undertaking requests in case of proved necessity and after NRIC assessment the earlier opening or extension of working time of a station, which is closed to traffic for part of 24-hour period, is necessary, the relevant Railway Undertaking pays to the NRIC all related expenditures.