

## **Annex 3.1**

## **Collected information**

## **Information**

- 1.1 Socio-economic data for the country (population, GDP, foreign trade, CPI - consumer price index, deflator). (Form 1.1)
- 1.2 Socio-economic data by Region (population, GDP, foreign trade, CPI - consumer price index, deflator). (Form 1.2)
- 1.3 Data about Production of Main Commodities by Region. (Form 1.3)
- 1.4 Customs Code of the country; Customs regulations connected with border crossing; Border Law of the country (the law which regulates the type of checking to be performed at the borders with regard to Customs, Police border, Health, Sanitary, etc.); Bilateral Agreements with Railway Administrations of neighbouring countries regarding border crossing procedures; existing procedures and co-operation agreements between State Bodies of the country.
- 1.5 Technical specifications and rules for building lines, for building signalling and telecommunications plants, for permanent way, for providing materials and for train operation in particular with regard to safety and security standards for the transportation of dangerous goods and oil products.
- 1.6 Information about standards for rolling stock, lines, plants, materials and for providing materials and rolling stock.

## **Информация**

- 1.1 Социально-экономические данные по государству (население, ВВП, международная торговля, CPI – индекс потребительских цен, дефлятор). (Форма 1.1)
- 1.2 Социально-экономические данные по региону (население, ВВП, международная торговля, CPI – индекс потребительских цен, дефлятор). (Форма 1.2)
- 1.3 Данные о производстве товаров народного потребления по Региону. (Форма 1.3)
- 1.4 Таможенный Кодекс страны; Таможенные инструкции по пересечению границ; государственный Закон о Границе (закон, который регулирует типы проверки на границе во взаимодействии с Таможней, Паспортным контролем, Охраной Здоровья, Санитарией и пр.); Двусторонние соглашения между Железнодорожными Администрациями соседних стран по вопросам пересечения границ; существующие процедуры и соглашения о сотрудничестве между Государственными Структурами страны.
- 1.5 Технические характеристики и нормы строительства железных дорог, строительства устройств сигнализации и связи, верхнего строения пути, обеспечение запасными материалами и движения поездов, в частности в вопросах стандартов безопасности транспортировки взрывоопасных и легковоспламеняющихся грузов (опасных грузов и нефтепродуктов).
- 1.6 Информация о стандартах по подвижному составу, линий, оборудования, материалов и по обеспечению запасными частями и подвижным составом.

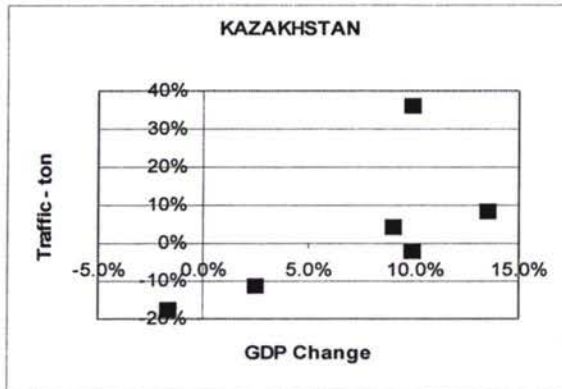
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|---|---|
| 1.7 Data about multimodal terminals, trains, operability and interoperability. (Form 1.7)   | 1.7 Данные о межтранспортных терминалах, поездах, удобстве использования и совместимости операций. (Форма 1.7)  |
| 1.8 Typical sections drawings; permanent way elements typical drawings (section on straight line, on curve, rails, concrete and wooden sleepers, fastenings and components, joints, turnouts and components, scheme of long welded bar, lay out and section of level crossings, box culverts, ditches, etc) | 1.8 Типовые чертежи участков; типовые чертежи верхнего строения пути (секции на стандартных участках, на кривых, рельсы, железобетонные и деревянные шпалы, крепеж и его составляющие, стыки, стрелки и их составляющие, схемы безстыковых секций, трассы и секции железнодорожных переездов, труб, канализационных коллекторов и т.д.) |
| 2.1 Railway Statistics on Assets (tracks and Staffing. (Form 2.1)   | 2.1 Железнодорожная статистика по Активам (путь, здания, подвижной состав) и укомплектовке персоналом. (Форма 2.1)  |
| 2.2 Railway Statistics on Rolling Stock. (Form 2.2) for sections mentioned in par. 3  | 2.2 Железнодорожная статистика по подвижному составу. (Форма 2.2) для участков, описанных в параграфе 3.  |
| 2.3 Workshops and maintenance of rolling stocks (Form 2.3) for sections mentioned in par. 3   | 2.3 Депо и пункты технического обслуживания подвижного состава (Форма 2.3) для участков, описанных в параграфе 3.   |
| 2.4 Railway Network Characteristics (length, signalling systems, traction type, maximum train load for each section. (Form 2.4)   | 2.4 Характеристики Сети Железных Дорог (длина, сигнализация, система, тип тяги, максимальная нагрузка на ось) для каждого участка. (Форма 2.4)  |
| 2.5 Maintenance activities and equipment (permanentway,safety/signalling/telecommunication/electrification plants) (Form 2.5) for sections mentioned in par. 3  | 2.5 Работы по техническому обслуживанию и оборудование (верхнее строение пути, устройства безопасности / сигнализации/ связи/ энергоснабжения) (Форма 2.5) для участков, описанных в параграфе 3.   |
| 2.6 Data about train travel time (Form 2.6)   | 2.6 Данные по времени движения поездов (Форма 2.6)  |
| 2.7 Passenger and freight train movements in the border stations. (Form 2.7)  | 2.7 Движение пассажирских и грузовых поездов по пограничным станциям. (Форма 2.7)   |
| 2.8 Statistical data about train delays at border stations per causes (Form 2.8)  | 2.8 Статистические данные о задержках поездов на пограничных станциях по  |

	причинам их возникновения (Форма 2.8).
2.9 Information about the border crossings: state bodies involved, administrative and technical actions taken in specific border crossing points, communication system, level of IT implementation; existence of joint commissions (Information collected through interviews with sub-consultant experts).	2.9 Информация о точках пересечения границы: задействованные государственные структуры, административные и технические процедуры, принятые на конкретной точке пересечения границы, средства связи, уровень задействования СВТ; наличие совместных комиссий (Информация получена во время переговоров с экспертами Субконсультанта).
3.1 Freight Transport Statistics by Mode. (Form 3.1)	3.1 Статистика по Грузопотокам. (Форма 3.1)
3.2 Passenger Transport Statistics by Mode. (Form 3.2)	3.2 Статистика по Пассажиropотокам. (Форма 3.2)
3.3 Railway statistics on traffic (passenger and freight) and revenue. (Form 3.3)	3.3 Статистика по железнодорожному движению (пассажирскому и грузовому) и прибыль. (Форма 3.3)
3.4 Railway statistics on traffic by commodity. (Form 3.4)	3.4 Железнодорожная статистика по видам грузов. (Форма 3.4)
3.5 Railway traffic density by section (Form 3.5)	3.5 Объемы железнодорожного движения по участкам (Форма 3.5)
3.6 Railway traffic flows for 10 commodity groups (Form 3.6)	3.6 Объемы железнодорожных перевозок по 10 группам товаров (Форма 3.6)
3.7 Data about International Trade Flows – Export, by destination and commodity for each mode. (Form 3.7)	3.7 Данные по Международным Торговым Потокам – Экспорт, по назначению и по видам грузов. (Форма 3.7)
3.8 Data about International Trade Flows – Import, by destination and commodity for each mode. (Form 3.8)	3.8 Данные по Международным Торговым Потокам – Импорт, по назначению и по видам грузов. (Форма 3.8)
3.9 Data about International Trade Flows – Transit, by origin, destination and commodity for each mode. (Form 3.9)	3.9 Данные по Международным Торговым Потокам – Транзит, по происхождению, назначению и по видам грузов. (Форма 3.9)
3.10 Container Movements in Railway Terminals by container size (Form 3.10)	3.10 Передвижения контейнеров через железнодорожные терминалы по типоразмерам контейнеров (Форма 3.10)

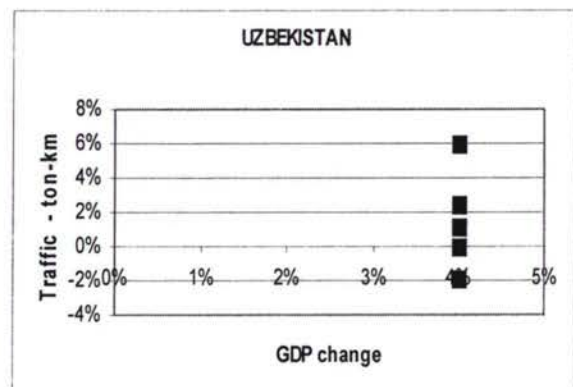
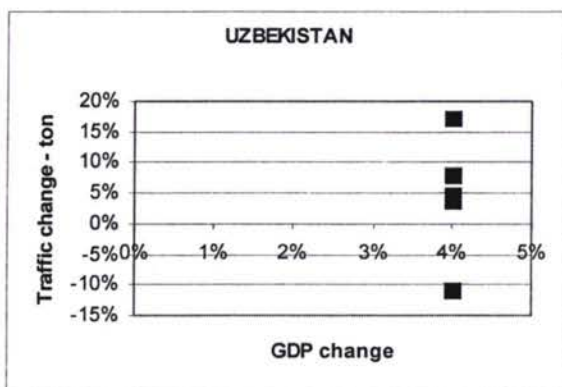
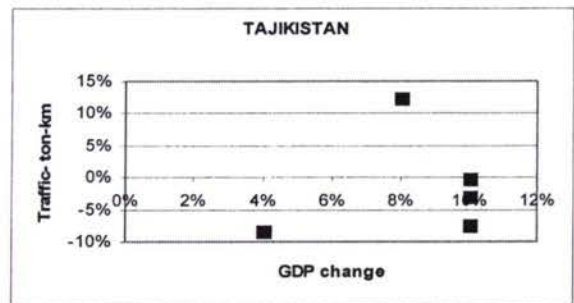
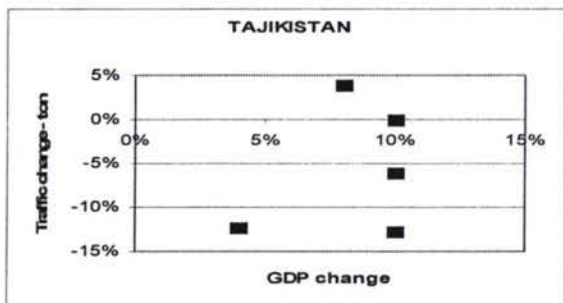
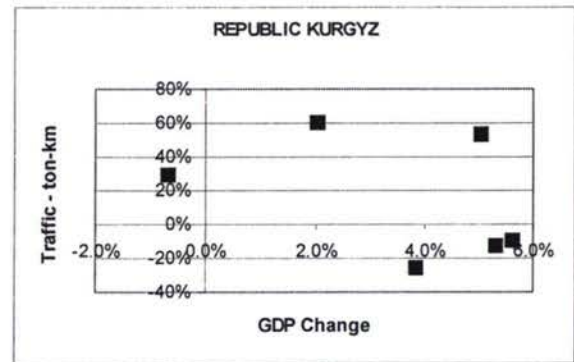
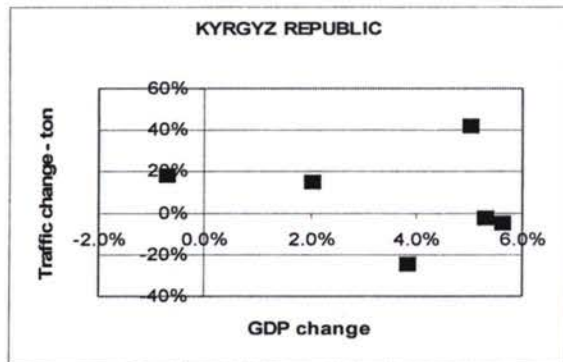
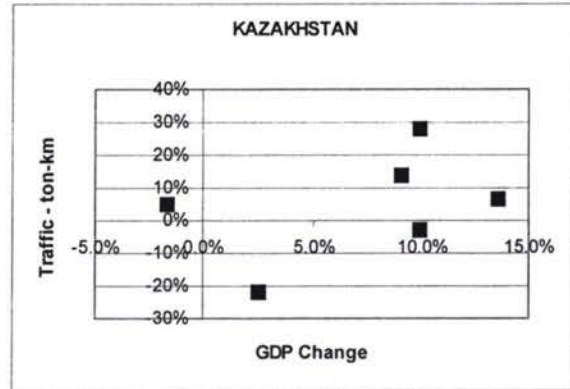
## **Annex 4.1**

## **Analysis of correlation between traffic and GDP changes**

**Correlation Traffic (ton) - GDP**



**Correlation Turnover (ton-km) - GDP**



**Annex 4.2**

**Forecasts of traffic through the  
international border station  
Dostyk (Druzhba) –  
Alashankou**

### Forecasts of traffic through the international border station Dostyk (Druzhba) – Alashankou

(Thousand tons)

Commodity type	Years										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Traffic to PRC (Druzhba/Dostyk – Alashankou)</b>											
Crude oil	1800	2200	2500	3000	3000	3000	3000	3500	3500	3500	3500
Scrap metal	1200	1000	1000	700	500	500	500	500	500	500	500
Non-ferrous metals	250	300	350	400	450	500	550	600	600	600	600
Ferrous metals	2200	2500	3000	3000	3200	3500	3500	3500	4000	4000	4000
Cotton	50	50	50	50	50	50	50	50	50	50	50
Containers	120	150	200	250	250	300	320	350	350	350	350
Fertilizer	200	200	200	200	200	200	200	200	200	200	200
Others	600	700	750	800	820	850	900	1000	1050	1100	1500
<b>Total to PRC</b>	<b>6440</b>	<b>7200</b>	<b>8150</b>	<b>8520</b>	<b>8620</b>	<b>9100</b>	<b>9290</b>	<b>10020</b>	<b>10600</b>	<b>10700</b>	<b>11120</b>
<b>Traffic from PRC to Kazakhstan (Alashankou – Druzhba/Dostyk)</b>											
Foodstuff	35	30	25	20	20	20	20	20	20	20	20
Chemicals	100	120	150	200	200	250	300	350	350	400	400
Containers	150	170	250	300	300	350	400	450	500	500	500
Coke	350	400	450	500	510	520	550	600	600	650	670
Equipment	45	45	45	50	60	70	75	80	90	100	100
Construction mat.	35	30	30	30	30	30	30	30	30	30	30
Others	230	250	300	320	350	400	450	500	550	600	700
<b>Total from PRC</b>	<b>945</b>	<b>1045</b>	<b>1250</b>	<b>1420</b>	<b>1470</b>	<b>1640</b>	<b>1825</b>	<b>2030</b>	<b>2140</b>	<b>2300</b>	<b>2420</b>
<b>Grand Total (Export+Import)</b>	<b>7385</b>	<b>8245</b>	<b>9400</b>	<b>9940</b>	<b>10090</b>	<b>10740</b>	<b>11115</b>	<b>12050</b>	<b>12740</b>	<b>13000</b>	<b>13540</b>
Including Transit	1300	1600	1900	2100	2300	2500	2800	3000	3200	3300	3500
Transit share, %	17,6	19,4	20,2	21,1	22,8	23,3	25,2	24,9	25,1	25,4	25,8

Source: SJSC KTZ - 2003



## **Annex 8.1**

### **Pictures from Dostyk (Druzhba) / Alashankou rail border cross**



**Alashenkoy**



Dostyk

## **Annex 8.2**

### **List of border international- railway crossing stations of Uzbekistan**

State Joint Stock Railway Company  
"O'zbekiston Temir Yo'llari "

To: Polish State Railways

OSJD Committee

28.05.2004  
Ref № NI-5916

Hereby "Uzbekiston Temir Yullari" sends you the list of border international-railway crossings between railway administration of the states that border with Uzbekistan for the purpose of setting a unified international code and their introduction to the library of control objects and to the tables of International Transport Tariff of transit distances of Uzbek railways:

**1. Border joint points with railways of Kazakhstan (KZT):**

Keles (UTY)- Sari Agash (KZT)  
Sirdarinskaya (UTY)- Pahtaaral (KZT)  
Karakalpakiya (UTY) – Oasis (KZT)

**2. Border joint points with Turkmen railways (TRK):**

Nishan (UTY) – Talimardjan (TRK)  
Hojadavkat (UTY)-Farap (TRK)  
Boldir (UTY)- Raz'ezd-161 (TRK)  
Naymankul (UTY) – Tahiatash (TRK)  
Jumurtay (UTY)- Kubadag (TRK)  
Pitnyak (UTY) – Gazodjak (TRK)  
Shavat (UTY) - Doshhovuz (TRK)

**3. Border joint points with Tajik railways (TAJ):**

Bekabad (UTY)- Nau (TAJ)  
Suvonobod (UTY) – Kanibadam (TAJ)  
Amuzang (UTY) – Hoshodi (TAJ)  
Sari-Asiya (UTY)- Pahtaabad (TAJ)

**4. Border joint points with Kyrghyz railways (KRG):**

Kuvasay (UTY) – Point 38 km (KRG)  
Savay (UTY)- Karasu-Uzbekskiy (KRG)  
Hanabad (UTY) – Djalal-Abad (KRG)  
Sultanabad (UTY) – Karasy-Uzbekiskiy (KRG)  
Uchkurgan (UTY) –Shamaldisay (KRG)

**5. Border joint points with Afghanistan (AFG)**

Galaba (UTY)- Hayraton (AFG)  
Termez-port (exp) (UTY) – Hayraton port (AFG)

Deputy chairman of company board     /signature/

### **Annex 8.3**

**Protocol between the General Department of Customs from Romania and SNTFM “CFR Marfă” SA (Romanian National Railway Freight Transport Company) regarding the application of the simplified transit procedure for goods transported on railway**

Ministry of Finance  
General Department of Customs  
Street Marci Millo, no. 13,  
district 1, Bucharest

SNTFM “CFR – Marfă” SA  
Bd. Dinicu Golescu, no. 18  
district 1, Bucharest

Registration Number: 51373/01.11.2000

## PROTOCOL

Between the General Department of Customs and SNTFM “CFR Marfă” SA  
regarding the application of the simplified transit procedure for goods transported  
on railway

Taking into account the dispositions of the art. 94 from the European Agreement of Romania’s Association to the European Union, ratified by the Law no. 20/1993, regarding the necessity of Romania’s interconnection to the common transit system established between the European Union and the countries of the European Association of Free Trade,

Taking into consideration the dispositions stipulated at point 5 of the position document for chapter 25 “Customs Union” opened within the negotiations of Romania’s accession to the EU, in which it is stipulated our country’s engagement to generalize, until the end of the year 2000, the application of the stipulations of the Common Transit Convention for goods transported on railway,

Taking into account the stipulations of the art. 48, paragraph 2 and 3 from the Application Regulation of Romania’s Customs Code, approved by Government Decision no. 626/1997

Taking into consideration the stipulations of the art. 6, paragraph 1 from SNTFM “CFR Marfă” SA Status approved by Government Decision no. 582 / 1998,

The sides agree on the following:

Art. 1. For the goods transported by SNTFM “CFR Marfă” SA loaded in wagons that circulate in external transit, between two border customs offices, the CIM railway bill on which the customs authority stamps “Customs Transit” has the value of a transit customs declaration. For the goods loaded on UTI (intermodal transport units) the TR forwarding bulletin on which the customs authority stamps “Customs Transit”, has the value of a transit customs declaration.

Art. 2. For the transports stipulated at art. 1 SNTFM “CFR Marfă” SA becomes obligatory the main responsible for the correct unfolding of the transit operations.

Art. 3. The CIM railway bill or, depending on the case, the TR the forwarding bulletin to which the customs authority has granted free of customs by applying the transit stamp, represents executory title for the persuing and cashing of the customs duty.

Art. 4. SNTFM “CFR Marfă” SA will supervise the unfolding and concluding of the common transit operations through its own accountancy centre.

Art. 5. For the verification of the unfolding and concluding of the transit operations, SNTFM “CFR Marfă” SA, at the customs authority’s solicitation, will put at its disposal, in the accountancy centre, all the photocopies of the railway bills / the TR forwarding bulletins. There will also be presented, in a maximum 7 day term, other documents out of which the operations that were concluded should result (the goods delivery register, the transit list etc).

Art. 6. At least once a month the customs authority will make at the accountancy centre of SNTFM “CFR Marfă” SA a verification, according to its own control norms, of the transit operations unfolded under the coverage of the railway bills / forwarding bulletins, whose photocopies are preserved in the accountancy centre.

Art. 7. For further control, the photocopies of the railway bills / TR forwarding bulletins will be archived in the accountancy centre for a 5 year period from the granting of the free of customs.

Art. 8. Both sides will apply measures of decreasing the time of staying of the wagons loaded with foreign goods which convey in transit Romania. These measures will also be included in the common regulations established between the border stations and the border customs offices.

Art. 9. The application of the simplified transit procedure for the goods transported on the railway will be made by complying with the international conventions to which our country is signatory side (The COTIF Convention, the Convention regarding the harmonization of the goods control at border, etc.).

Art. 10. Until the operative date of the present Protocol, the General Department of Customs will elaborate the Methodological Norms of application of the simplified transit procedure for the goods transported on railway.

Art. 11. The extension of the simplified procedure for the goods loaded in cars, transported in transit between all the customs offices with railway activity in the country, will be made subsequently at a date established on a common agreement by the two sides.

Art. 12 The present protocol will become operative on the 20<sup>th</sup> of November of 2000.

General Department of Customs



General Director,

Regulations and Customs Procedures Department

Judicial and Customs Legislation Department

Chief of Transit and Customs Conventions Department

SNTFM “CFR Marfă” SA

General Director,

Commercial Director,

**Annex 8.4**

**International Convention on  
Mutual Administrative  
Assistance in Customs  
Matters, Brussels June, 27<sup>th</sup>  
2003**

## **INTERNATIONAL CONVENTION ON MUTUAL ADMINISTRATIVE ASSISTANCE IN CUSTOMS MATTERS**

**Brussels – 27 June, 2003**

WORLD CUSTOMS ORGANIZATION

Rue du Marché, 30

B-1210 Brussels

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**INTERNATIONAL CONVENTION  
ON MUTUAL ADMINISTRATIVE ASSISTANCE  
IN CUSTOMS MATTERS**

Preamble

THE CONTRACTING PARTIES to this Convention, established under the auspices of the Customs Co-operation Council, now known as the World Customs Organization, Recognizing that closer co-operation between Customs administrations is a principal aim of the Convention establishing a Customs Co-operation Council;

Convinced that more effective co-operation between Customs administrations can be achieved through the goodwill of the Contracting Parties;

Considering the importance of the accurate assessment of Customs duties and other taxes and of ensuring proper enforcement by Customs administrations of prohibitions, restrictions and measures of control in respect of specific goods;

Considering that offences against Customs law are prejudicial to the security of the Contracting Parties and their economic, commercial, fiscal, social, public health and cultural interests;

Taking into account the threat of transnational organized crime and terrorist groups with their substantial resources and the need to effectively combat them;

Recognizing the increased global concern for the security and facilitation of the international trade supply chain and the Customs Co-operation Council's Resolution of June 2002 to that effect;

Recognizing the importance of achieving a balance between compliance and facilitation to ensure the free flow of legitimate trade and to meet the needs of governments for the protection of society and revenues;

Convinced that international trade will be facilitated by the adoption of modern control techniques, such as risk management, by Customs administrations;

Recognizing that the international exchange of information is an essential component of effective risk management and that such exchange of information should be based on clear legal provisions;

Taking into account the International Convention on Mutual Administrative Assistance for the Prevention, Investigation and Repression of Customs Offences, adopted at Nairobi on 9 June 1977 under the auspices of the Customs Co-operation Council, which lays down a framework to facilitate mutual administrative assistance in Customs matters;

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Taking into account the United Nations Convention against Transnational Organized Crime, adopted at New York on 15 November 2000 and for which the High-Level Political Signing Conference was held in Palermo from 12 to 15 December 2000, which lays down a framework for international mutual assistance in criminal matters with a view to preventing and combating transnational organized crime;

Having regard to international Conventions containing prohibitions, restrictions and measures of control in respect of specific goods;

Having regard to the United Nations Universal Declaration of Human Rights of 1948;

Have agreed as follows :

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## **CHAPTER I**

### **Definitions**

#### **Article 1**

For the purposes of this Convention :

(a) "Administrative Committee" shall mean the Committee responsible for the management of this Convention as established in Article 45;

(b) "Council" shall mean the organization set up by the Convention establishing a Customs Co-operation Council, done at Brussels on 15 December 1950 and entered into force on 4 November 1952;

(c) "Council officer" shall mean any officer or employee of the Council and any other person designated by the Secretary General to perform functions for the purposes of this Convention;

(d) "cross-border co-operation" shall mean the co-operation between the Customs administrations of the Contracting Parties across their respective borders;

(e) "Customs administration" shall mean the Customs authority and any other authority of a Contracting Party authorized under national law and designated by that Contracting Party to apply any provision of this Convention;

(f) "Customs claim" shall mean any amount of Customs duties that cannot be collected in one of the Contracting Parties;

(g) "Customs duties" shall mean all duties, taxes, fees or any other charges which are levied in the territories of the Contracting Parties in application of Customs law, but not including fees and charges for services rendered;

(h) "Customs law" shall mean any legal and administrative provisions applicable or enforceable by the Customs administration of a Contracting Party in connection with the importation, exportation, transshipment, transit, storage and movement of goods, including legal and administrative provisions relating to measures of prohibition, restriction and control, and to combating money laundering;

- (i) "Customs offence" shall mean any breach, or attempted breach, of a Contracting Party's Customs law;
- (j) "Customs or Economic Union" shall mean a Union, constituted by and composed of Members, which has competence to adopt its own regulations that are binding on those Members in respect of matters governed by this Convention, and has competence to decide, in accordance with its internal procedures, to sign, ratify or accede to this Convention;
- (k) "Enforcement Committee" shall mean the Enforcement Committee of the Council;
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- (l) "information" shall mean any data, whether or not processed or analysed, and documents, reports, and other communications in any format, including electronic, or certified or authenticated copies thereof;
- (m) "international trade supply chain" shall mean all processes involved in the cross-border movement of goods from the place of origin to the place of final destination;
- (n) "official" shall mean any Customs officer or other government agent designated by a Customs administration;
- (o) "person" shall mean both natural and legal persons, unless the context otherwise requires;
- (p) "personal data" shall mean any data concerning an identified or identifiable natural person;
- (q) "ratification" shall include acceptance or approval;
- (r) "requesting administration" shall mean the Customs administration which requests assistance;
- (s) "requested administration" shall mean the Customs administration from which assistance is requested;
- (t) "requesting Contracting Party" shall mean the Contracting Party whose Customs administration requests assistance;
- (u) "requested Contracting Party" shall mean the Contracting Party whose Customs administration is requested to provide assistance;
- (v) "Secretary General" shall mean the Secretary General of the Council.

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## **CHAPTER II**

### **Scope of the Convention**

#### **Article 2**

1. Contracting Parties shall, through their Customs administrations, provide each other with administrative assistance under the terms set out in this Convention, for the proper application of Customs law, for the prevention, investigation and combating of Customs offences and to ensure the security of the international trade supply chain.
2. Any activity carried out under this Convention by a Contracting Party shall be in accordance with its legal and administrative provisions and within the limits of its Customs administration's competence and available resources.
3. Each Contracting Party shall notify the Secretary General of the authorities, referred to in Article 1 (e), authorized under national law and designated by that Contracting Party to apply any provision of this Convention. The Secretary General shall communicate this information and any updates thereof to the other Contracting Parties.
4. This Convention only covers mutual administrative assistance between the Contracting Parties and is not intended to have an impact on mutual legal assistance agreements between them. If mutual assistance is to be provided by other authorities of a requested Contracting Party, the requested administration shall indicate those authorities and, where known, the relevant agreement or arrangement applicable.
5. The provisions of this Convention shall not give rise to a right on the part of any person to impede the execution of a request for assistance.

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## **CHAPTER III**

### **General Assistance Procedures**

### **Article 3**

#### Communication of Requests

1. Requests for assistance under this Convention shall be communicated directly between the Customs administrations concerned. Each Customs administration shall designate an official contact point for this purpose and shall provide details thereof to the Secretary General. The Secretary General shall communicate this information and any updates thereof to the other Customs administrations.

2. Requests for assistance under this Convention shall be made in writing or electronically, and shall be accompanied by any information deemed useful for the purpose of complying with such requests. The requested administration may require written confirmation of electronic requests. Where the circumstances so require, requests may be made verbally. Such requests shall be confirmed as soon as possible either in writing or, if acceptable to the requested and requesting administrations, by electronic means.

3. Requests shall be made in a language acceptable to the Customs administrations concerned. Any documents accompanying such requests shall be translated, to the extent necessary, into a mutually acceptable language. The requested administration shall in any case accept requests for assistance and accompanying documents in one of the official languages of the Council which it may specify.

4. Requests made pursuant to paragraph 2 of this Article, shall include the following details :

- (a) the name of the requesting administration;
- (b) the matter at issue, type of assistance requested, and reasons for the request;
- (c) a brief description of the case under review and the legal and administrative provisions that apply;
- (d) the names and addresses of the persons to whom the request relates, if known;
- (e) a reference in accordance with paragraph 2 of Article 42, if applicable;
- (f) the verifications made in accordance with paragraph 2 of Article 7.

5. Where the requesting administration requests that a certain procedure or methodology be followed, the requested administration shall comply with such a request, subject to its national legal and administrative provisions.

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### **Article 4**

#### Spontaneous Assistance

In cases that could involve substantial damage to the economy, public health, public security, including the security of the international trade supply chain, or other vital interests of any Contracting Party, the Customs administration of any Contracting Party shall, wherever possible, supply assistance on its own initiative without delay.

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## **CHAPTER IV**

### **Information**

#### **Article 5**

##### Information for the Application and Enforcement of Customs Law

The Customs administrations shall provide each other, either on request or on their own initiative, with information which helps to ensure proper application of Customs law and the prevention, investigation and combating of Customs offences and to ensure the security of the international trade supply chain. Such information may include :

- (a) new enforcement techniques having proved their effectiveness;
- (b) new trends, means or methods of committing Customs offences;
- (c) goods known to be the subject of Customs offences, as well as transport and storage methods used in respect of those goods;
- (d) persons known to have committed a Customs offence or suspected of being about to commit a Customs offence;
- (e) any other data that can assist Customs administrations with risk assessment for control and facilitation purposes.

#### **Article 6**



#### Information Relating to Customs Offences

The Customs administration of a Contracting Party shall provide the Customs administration of any other Contracting Party concerned, either on its own initiative or on request, with information on activities, planned, ongoing, or completed which provide reasonable grounds to believe that a Customs offence has been committed or will be committed in the territory of the Contracting Party concerned.

#### **Article 7**

##### Information for the Assessment of Import or Export Duties and Taxes

1. On request, the requested administration shall, without prejudice to Article 42, in support of the proper application of Customs law or in the prevention of Customs fraud, provide information to assist a requesting administration that has reasons to doubt the truth or accuracy of a declaration.

2. The request shall specify the verification procedures that the requesting administration has undertaken or attempted and the specific information requested.

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#### **Article 8**

##### Particular Types of Information

On request, the requested administration shall provide the requesting administration, who has reason to doubt the accuracy of information provided to it in a Customs matter, with information relative to :

(a) whether goods imported into the territory of the requesting Contracting Party have been lawfully exported from the territory of the requested Contracting Party;

(b) whether goods exported from the territory of the requesting Contracting Party have been lawfully imported into the territory of the requested Contracting Party and the Customs procedure, if any, under which the goods have been placed.

#### **Article 9**

##### Automatic Exchange of Information

Contracting Parties may, by mutual arrangement in accordance with paragraph 2 of Article 48, exchange any information covered by this Convention on an automatic basis.

#### **Article 10**

##### Advance Exchange of Information

1. Contracting Parties may, by mutual arrangement in accordance with paragraph 2 of Article 48, exchange specific information in advance of the arrival of consignments in their respective territories to ensure, in particular, the security of the international trade supply chain.

2. Such information shall, to the extent possible, comprise the following data elements :

i. consignor or consignor code or exporter or exporter code;

ii. description of goods or tariff code number;

iii. UNDG number (dangerous goods code);

iv. type of packages identification;

v. number of packages;

vi. measure unit qualifier;

vii. total gross weight;

viii. total invoice amount;

ix. currency code;

x. place of loading or place of loading code;

xi. carrier identification or carrier name;

xii. equipment identification number;

xiii. equipment size and type identification;

xiv. seal number;

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xv. identification of means of transport crossing the border of the territory of the Contracting Party or code;

- xvi. nationality of means of transport crossing the border of the territory of the Contracting Party or code;
- xvii. conveyance reference number;
- xviii. transport charges method of payment or code;
- xix. Customs office of exit or code;
- xx. country(ies) of routing or code;
- xxi. first port of arrival or code;
- xxii. date and time of arrival at first port of arrival in the territory of the Contracting Party or code;
- xxiii. consignee or consignee code or importer or importer code;
- xxiv. notify party or notify party code;
- xxv. delivery destination;
- xxvi. agent or agent code;
- xxvii. Unique Consignment Reference Number.

3. The Administrative Committee shall have the authority to modify the list referred to in paragraph 2 of this Article.

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## **CHAPTER V**

### **Special Types of Assistance**

#### **Article 11**

##### **Surveillance**

1. On request, the requested administration shall, to the extent possible, maintain surveillance over and provide the requesting administration with information on :

- (a) goods either in transport or in storage known to have been used or suspected of being used to commit a Customs offence in the territory of the requesting Contracting Party;
- (b) means of transport known to have been used or suspected of being used to commit a Customs offence in the territory of the requesting Contracting Party;
- (c) premises known to have been used or suspected of being used in connection with the commission of a Customs offence in the territory of the requesting Contracting Party;
- (d) persons known to have committed or suspected of being about to commit a Customs offence in the territory of the requesting Contracting Party, particularly those moving into and out of the territory of the requested Contracting Party.

2. The Customs administration of any Contracting Party may maintain such surveillance on its own initiative if it has reason to believe that activities planned, ongoing or completed appear to constitute a Customs offence in the territory of another Contracting Party.

#### **Article 12**

##### **Controlled Delivery**

1. Contracting Parties may, by mutual arrangement in accordance with paragraph 2 of Article 48, permit the movement of unlawful or suspect goods out of, through, or into their territories, with the knowledge and under the control of the Customs administration, with a view to investigating and combating Customs offences.

2. If such movements cannot be carried out under the control of the Customs authority, that authority shall endeavour to initiate co-operation with the national authorities that have such competence or shall transfer the case to them.

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#### **Article 13**

##### **Notification**

1. On request, the requested administration shall, if permissible under its national law, take all necessary measures to notify a person residing or established in its territory of all decisions taken by the requesting administration in application of Customs law concerning that person, that fall within the scope of this Convention.

2. Such notification shall be made in accordance with the procedures applicable in the territory of the requested Contracting Party for similar national decisions.

#### **Article 14**

#### Recovery of Customs Claims

1. On request, Customs administrations may afford each other assistance with a view to the recovery of Customs claims.
2. Detailed arrangements for assistance in recovering Customs claims shall be made between the Contracting Parties concerned, in accordance with paragraph 2 of Article 48.

#### **Article 15**

##### Experts and Witnesses

On request, the requested administration may authorize its officials to appear before a court or tribunal in the territory of the requesting Contracting Party as experts or witnesses in a matter related to the application of Customs law.

#### **Article 16**

##### Presence of Officials in the Territory of Another Contracting Party

On request, officials specially designated by a requesting administration may, with the authorization of the requested administration and subject to conditions the latter may impose, for the purpose of investigating a Customs offence :

- (a) examine, in the offices of the requested administration, documents and any other information in respect of that Customs offence, and be supplied with copies thereof;
- (b) be present during an inquiry conducted by the requested administration in the territory of the requested Contracting Party which is relevant to the requesting administration; these officials shall only have an advisory role.

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#### **Article 17**

##### Presence of Officials of the Requesting Administration at the Invitation of the Requested Administration

1. Where the requested administration considers it appropriate for an official of the requesting administration to be present when, pursuant to a request, measures of assistance are carried out, it may invite the participation of the requesting administration subject to any terms and conditions it may specify.
2. The Customs administrations concerned may, by mutual arrangement in accordance with paragraph 2 of Article 48, expand the role of the visiting official beyond an advisory one.

#### **Article 18**

##### Arrangements for Visiting Officials

1. Without prejudice to Articles 19, 20, 21, 22 and 23, when officials of a Contracting Party are present in the territory of another Contracting Party under the terms of this Convention, they must at all times be able to furnish, in a language acceptable to the requested administration, proof of their official identity and status in their Customs administration and of their official status as granted in the territory of the requested administration.
2. Officials shall, while in the territory of another Contracting Party under the terms of this Convention, be responsible for any offence they may commit and shall enjoy, to the extent provided by that Party's national laws, the same protection as accorded to its own Customs officers.

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### **CHAPTER VI**

#### **Cross-Border Co-operation**

#### **Article 19**

##### General Provisions

Officials of a Contracting Party may, by mutual arrangement in accordance with paragraph 2 of Article 48, engage in any of the activities set out in this Chapter in the territory of another Contracting Party and in accordance with any additional conditions as may be stipulated by the Contracting Party in whose territory these activities take place. Any of these activities shall cease as soon as the Contracting Party in whose territory the activities are taking place so requests.

#### **Article 20**

##### Hot Pursuit

1. Officials of a Contracting Party pursuing in their Party's territory an individual observed in the act of committing a Customs offence that could give rise to extradition, or participating in such an offence, may continue pursuit in the territory of another Contracting Party, subject to a prior request, authorization and any conditions the requested Contracting Party may impose.
2. If, for particularly urgent reasons, it has not been possible to inform the competent authorities of another Contracting Party prior to entry into its territory or where those authorities have not been able to engage in active pursuit, the pursuit may be continued without prior authorization.
3. Where pursuit is continued without prior authorization, the competent authorities of the Contracting Party in whose territory the pursuit is continued, shall be immediately informed of the crossing of the border and a formal request for authorization, outlining the grounds for crossing the border without prior authorization, shall be submitted as soon as possible.
4. At the request of the pursuing officials, the competent authorities of the Contracting Party where the pursuit is taking place shall challenge the pursued individual so as to establish his or her identity or to detain him or her.
5. Where the pursuit takes place on the sea, it shall, where it extends to the high sea, be carried out in conformity with the international law of the sea as reflected in the United Nations Convention on the Law of the Sea.

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#### **Article 21**

##### **Cross-Border Surveillance**

1. Officials of a Contracting Party, keeping under surveillance in their Party's territory a person about whom there are serious grounds to believe that he or she is involved in a Customs offence, may continue the surveillance in the territory of another Contracting Party subject to a prior request, authorization and any conditions the requested Contracting Party may impose.
2. If, for particularly urgent reasons, prior authorization cannot be requested, surveillance pursuant to paragraph 1 of this Article may be continued provided that the competent authorities of the Contracting Party in whose territory the surveillance is to be continued, are immediately informed of the crossing of the border and a formal request for authorization, outlining the grounds for crossing the border without prior authorization, is submitted as soon as possible.

#### **Article 22**

##### **Covert Investigations**

1. A requested Contracting Party may authorize officials of a requesting Contracting Party to investigate in its territory, under cover of false identities, to ascertain or clarify facts about a Customs offence where it would be extremely difficult to do so otherwise. The officials in question shall be authorized to collect information and to make contact with the subjects of investigations or other persons associated with them in the course of their investigative activities.
2. Such investigations shall be carried out in accordance with the law and procedures of the Contracting Party in whose territory the investigations are being conducted.

#### **Article 23**

##### **Joint Control and Investigation Teams**

1. Contracting Parties may establish joint control or investigation teams to detect and prevent particular types of Customs offences requiring simultaneous and co-ordinated activities.
2. Such teams shall operate in accordance with the law and procedures of the Contracting Party in whose territory the activities are being carried out.

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### **CHAPTER VII**

#### **Use, Confidentiality and Protection of Information**

##### **Article 24**

#### Use of Information

1. Without prejudice to Article 36, any information communicated under this Convention shall be used only by the Customs administration for which it was intended and solely for the purpose of administrative assistance under the terms set out in this Convention.
2. On request, the Contracting Party that supplied the information may, notwithstanding paragraph 1 of this Article, authorize its use for other purposes or by other authorities, subject to any terms and conditions it may specify. Such use shall be in accordance with the legal and administrative provisions of the Contracting Party which seeks to use the information. The use of information for other purposes includes its use in criminal investigations, prosecutions or proceedings.

#### **Article 25**

##### Confidentiality and Protection of Information

1. Any information communicated under this Convention shall be treated as confidential and shall, at least, be subject to the same protection and confidentiality as the same kind of information is subject to under the national legal and administrative provisions of the Contracting Party where it is received.
2. Personal data exchange between two or more Contracting Parties under this Convention shall not begin until the Contracting Parties concerned have, by mutual arrangement in accordance with paragraph 2 of Article 48, decided that such data will be afforded, in the territory of the receiving Contracting Party, a level of protection that satisfies the requirements of the national law of the supplying Contracting Party.
3. In the absence of a mutual arrangement as referred to in paragraph 2 of this Article, personal data may only be supplied when the supplying Contracting Party is satisfied that such personal data will be protected in the territory of the receiving Contracting Party in accordance with the provisions of this Convention.
4. Contracting Parties shall, at the time of signature, ratification of or accession to this Convention, inform the Secretary General in writing of their national legal and administrative provisions in respect of confidentiality of information and protection of personal data. They shall make a written declaration to the Secretary General, at the time of signature, ratification of or accession, of their commitment to, at least, abide by the confidentiality of information and data protection provisions of this Convention.

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#### **Article 26**

##### Personal Data Protection

1. Personal data shall only be supplied to a Customs administration. The supply of personal data to any other authority shall only be allowed after prior approval by the Customs administration supplying the data concerned.
2. On request, the Customs administration receiving personal data shall inform the Customs administration which supplied that data of the use made of it and the results achieved.
3. Personal data supplied under this Convention shall be kept only for the time necessary to achieve the purpose for which it was supplied.
4. The Customs administration supplying personal data shall, to the extent possible, ensure that this data has been collected fairly and lawfully and that it is accurate and up to date and not excessive in relation to the purposes for which it is supplied.
5. If personal data supplied is found to be incorrect or should not have been exchanged, this shall be notified immediately. The Customs administration that has received such data shall amend or delete it.
6. The Customs administrations shall record the supply or receipt of personal data exchanged under this Convention.
7. The Customs administrations shall take the necessary security measures to protect personal data exchanged under this Convention from unauthorized access, amendment or dissemination.
8. A Contracting Party shall be liable, in accordance with its legal and administrative provisions, for damage caused to a person through the use of personal data exchanged

under this Convention. This shall also be the case where the damage was caused by a Contracting Party supplying inaccurate data or supplying data that is contrary to this Convention.

9. If the Contracting Party found liable for damage under paragraph 8 of this Article is not the Contracting Party that supplied the personal data, the Contracting Parties concerned shall agree on the terms and conditions of reimbursement to the liable Contracting Party of any sums it paid out in compensation.

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## **CHAPTER VIII**

### **Centralization of Information**

#### **Article 27**

##### **Purpose of Centralization**

1. The information referred to in Articles 28, 29 and 30 shall be placed in a secure central automated information system for the purpose of risk assessment to ensure the proper application of Customs law, to prevent, investigate and combat Customs offences and to ensure the security of the international trade supply chain.

2. Personal data shall also be placed in a secure central automated information system for the purpose of providing information on persons known to have committed a Customs offence or suspected of being about to commit a Customs offence.

#### **Article 28**

##### **Non-Personal Information**

1. For the purposes of Articles 27 and 31 and if permissible under their national laws, Customs administrations shall communicate to the central automated information system the following non-personal information:

- i. case reference information, where appropriate;
- ii. commodities;
- iii. quantities and unit of measurement;
- iv. means of transport;
- v. means of concealment;
- vi. indication whether commodities are detected at importation, exportation, in transit or inland;
- vii. routing;
- viii. means of detection.

2. The Administrative Committee shall have the authority to modify the list in paragraph 1 of this Article.

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#### **Article 29**

##### **Information on Natural and Legal Persons**

1. For the purposes of Articles 27 and 31 and if permissible under their national laws, Customs administrations may communicate to the central automated information system the following information:

(A) On natural persons :

- i. family name, maiden name, given names and aliases, and former names, as appropriate;
- ii. date and place of birth;
- iii. nationality;
- iv. type and number of identity paper(s);
- v. sex;
- vi. country of residence;
- vii. nature of offence;
- viii. occupation;
- ix. distinguishing features;
- x. prior history or information on suspects;
- xi. registration numbers of the means of transport;

- xii. indicators of level of danger that a person may pose;
- xiii. specific reason for inclusion of data;
- xiv. criminal organization belonged to;
- xv. known associates.

(B) On legal persons :

- i. name, trade name;
- ii. country of registration;
- iii. registration number;
- iv. date of registration;
- v. registered office;
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- vi. trading address;
- vii. nature of business;
- viii. nature of offence;
- ix. prior history or information on suspected legal persons;
- x. specific reason for inclusion of data;
- xi. names of principal officers or employees and, if appropriate, any other identifying information as indicated under paragraphs (A) i to xv.

2. The Administrative Committee shall have the authority to modify the lists in paragraphs 1 (A) and (B) of this Article.

#### **Article 30**

##### Other Information

Customs administrations may communicate to the central automated information system, if permissible under their national laws, any other information that may be relevant for the proper application of Customs law, for the prevention, investigation and combating of Customs offences, and for ensuring the security of the international trade supply chain.

#### **Article 31**

##### Central Automated Information System

1. The information referred to in Articles 28, 29 and 30 shall be placed in a secure central automated information system for Customs purposes. This system shall be managed from the Headquarters of the Council and be accessible under the provisions laid down in Article 38.

2. The communication of information by a Contracting Party to the central automated information system shall be subject to that Contracting Party's legal and administrative provisions, unless this Convention lays down more stringent provisions.

3. Each Contracting Party shall designate a competent authority in its Customs administration to be responsible at the national level for the correct operation of the central automated information system and for the measures necessary to ensure compliance with the provisions of Chapters VIII and X.

4. The Secretary General shall designate Council officers to be responsible at the Council level for the correct operation and maintenance of the central automated information system and for the measures necessary to ensure compliance with the provisions of Chapters VIII and X.

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5. Each Contracting Party shall notify the Secretary General of the competent authority it has designated under paragraph 3 of this Article, who shall make this information available to the other Contracting Parties, along with any relevant information regarding Council officers designated under paragraph 4 of this Article. The information referred to in this paragraph shall be included in the central automated information system, but not be subject to the provisions of Chapter VII.

#### **Article 32**

##### Management of the Central Automated Information System

1. A team shall be set up to manage the central automated information system with regard to technical, operational and procedural matters. It shall consist of representatives from the

Customs administrations of the Contracting Parties and Council officers. The composition of the Management Team shall be decided by the Administrative Committee.

2. The Management Team shall establish procedures for all technical and operational matters including procedures relating to :

- (a) communication of information, in accordance with Articles 28, 29 and 30;
- (b) access to the central automated information system and to the information it contains, in accordance with Article 38; and
- (c) modification of information, in accordance with the provisions of Articles 39 and 40.

3. Following the approval by the Administrative Committee of the procedures referred to in paragraph 2 of this Article, the Management Team shall ensure their implementation.

4. The Management Team shall report at least annually to the Administrative Committee on the management of the central automated information system under paragraphs 1, 2 and 3 of this Article, making recommendations as necessary.

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## **CHAPTER IX**

### **Security of the Central Automated Information System**

#### **Article 33**

##### Responsibility for Security Measures

1. The Contracting Parties and the Secretary General shall be responsible for the implementation of all necessary measures for the security of the central automated information system. The objectives of these measures shall include, but not be limited to:

- (a) preventing unauthorized access to equipment used for the processing of information in the system;
- (b) preventing unauthorized access to the system;
- (c) preventing unauthorized entry, reading, copying, amending or deletion of any information in the system;
- (d) ensuring that it is possible to check and establish which designated competent authorities and Council officers, referred to in paragraph 1 of Article 38, have access to the central automated information system, and which designated officials and Council officers, referred to in paragraph 2 of Article 38, have access to the information in the system;
- (e) ensuring that it is possible to check and establish which information has been introduced into the system, by whom, and to monitor queries;
- (f) preventing the unauthorized reading, copying, amendment or deletion of information during the communication of data and the transport of data media.

2. The independent representative or representatives appointed under paragraph 1 (f) of Article 45 shall carry out verifications of access to and queries about personal data to ensure that access and queries made were admissible and were made by authorized users. A record of all verifications shall be maintained in the system for reporting to the Administrative Committee and deleted after twelve months.

#### **Article 34**

##### Implementation of Security Measures

1. Each Contracting Party shall designate a competent authority in its Customs administration to implement, at the national level, the security measures referred to in paragraph 1 of Article 33.

2. The Secretary General shall designate Council officers to implement, at the Council level, the security measures referred to in paragraph 1 of Article 33.

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3. Each Contracting Party shall notify the Secretary General of the competent authority it has designated under paragraph 1 of this Article, who shall make this information available to the other Contracting Parties, along with any relevant information regarding designated Council officers under paragraph 2 of this Article. The information referred to in this paragraph shall be included in the central automated information system, but not be subject to the provisions of Chapter VII.

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## **CHAPTER X**

### **Protection of Information in the Central Automated Information System**

#### **Article 35**

##### **Inclusion of Information**

The inclusion of information in the central automated information system shall be governed by the legal and administrative provisions of the supplying Contracting Party unless this Convention lays down more stringent provisions.

#### **Article 36**

##### **Use of Information**

1. The use of information obtained from the central automated information system shall be governed by the legal and administrative provisions of the Contracting Party using such information, unless this Convention lays down more stringent provisions.
2. Contracting Parties may only use information obtained from the central automated information system in order to achieve the purposes stated in Article 27. However, on request, the Contracting Party that supplied the information may authorize its use for other purposes, subject to any terms and conditions it may specify. Such other use shall be in accordance with the legal and administrative provisions of the Contracting Party which seeks to use the information. The use of information for other purposes includes its use in criminal investigations, prosecutions or proceedings.
3. Under the responsibility of the Secretary General, Council officers may use information obtained from the central automated information system only to carry out tasks as required under this Convention, subject to any conditions the Administrative Committee may impose.
4. Personal data may only be used if obtained from the central automated information system in accordance with paragraph 7 of Article 38.

#### **Article 37**

##### **Retention of Personal Data**

1. Personal data included in the central automated information system shall be kept only for the time necessary to achieve the purpose for which it was supplied. Contracting Parties shall specify the period of retention in the system of any personal data they supply.
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2. A supplying Contracting Party may extend the period of retention referred to in paragraph 1 of this Article if the retention of its personal data is necessary for the purposes for which it was supplied. If there is no extension of this period, the data shall be deleted from the central automated information system at the initiation of the Contracting Party that supplied the personal data.
  3. The Secretary General shall inform the supplying Contracting Party of the imminent deletion of personal data under paragraph 2 of this Article, giving one month's notice.
  4. The independent representative or representatives appointed under paragraph 1 (f) of Article 45 shall carry out verifications to ensure that the period of retention of personal data in the central automated information system is being complied with. A record of all verifications shall be maintained in the system for reporting to the Administrative Committee and deleted after twelve months.

#### **Article 38**

##### **Access**

1. The competent authorities and Council officers designated in accordance with paragraphs 3 and 4 of Article 31 shall have access to the central automated information system.
2. For the purposes of Article 27 and without prejudice to paragraph 7 of this Article, Contracting Parties shall designate officials in their Customs administrations, and the Secretary General shall designate Council officers, who shall have access to information in the central automated information system.
3. Access to the system shall be in accordance with the procedures referred to in paragraph 2 of Article 32. For the purpose of applying Article 32, the Management Team shall have access to the central automated information system.

4. The Administrative Committee may permit access to the non-personal information in the central automated information system by international and regional governmental organizations on the basis of reciprocity and subject to any conditions the Administrative Committee may specify.

5. The representative or representatives appointed by the Administrative Committee under paragraph 1 (f) of Article 45 shall have access to the central automated information system.

6. Each Contracting Party shall notify the Secretary General of the officials it has designated under paragraph 2 of this Article. The Secretary General shall make this information available to all Contracting Parties along with any relevant information regarding Council officers designated under the same paragraph. The information referred to in this paragraph shall be included in the central automated information system, but not be subject to the provisions of Chapter VII.

7. Contracting Parties may stipulate who shall have access, or who shall not have access, to the personal data they supply.

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8. The rights of natural persons with regard to personal data in the central automated information system, in particular their right of access, shall be put into effect in accordance with the legal and administrative provisions of the Contracting Party in whose territory such rights are invoked.

#### **Article 39**

Modification of Non-Personal Information in the Central Automated Information System

1. Non-personal information in the central automated information system shall only be amended, supplemented, corrected or deleted at the initiation of the supplying Contracting Party.

2. Non-personal information shall be amended, supplemented, corrected or deleted in accordance with the procedures established and implemented by the Management Team under paragraphs 2 and 3 of Article 32.

#### **Article 40**

Modification of Personal Data in the Central Automated Information System 1. Personal data in the central automated information system shall only be amended, supplemented, corrected, or deleted at the initiation of the supplying Contracting Party.

2. If a Contracting Party notes that the personal data it supplied is inaccurate, or was included or is stored in the central automated information system contrary to this Convention, it shall arrange for the amendment, supplementation, correction or deletion of this personal data without delay. The Contracting Party concerned shall arrange with the Secretary General to notify those who have been stipulated to have access to personal data, as referred to in paragraph 7 of Article 38, of such amendment, supplementation, correction or deletion.

3. If a Contracting Party has information to suggest that any personal data is inaccurate, or was included or is stored in the central automated information system contrary to this Convention, it shall advise the supplying Contracting Party as soon as possible.

The latter shall check the data concerned and, if necessary, arrange for its amendment, supplementation, correction or deletion without delay. The supplying Contracting Party shall arrange with the Secretary General to notify those who have been stipulated to have access to personal data, as referred to in paragraph 7 of Article 38, of such amendment, supplementation, correction or deletion.

4. If, at the time of including personal data in the central automated information system, a Contracting Party realizes that its personal data conflicts with personal data supplied by another Contracting Party, it shall immediately advise the Contracting Party which supplied that data. The Contracting Parties concerned shall attempt to resolve the

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matter. If resolving the matter results in an amendment, supplementation, correction or deletion of personal data, the Contracting Party which had supplied the data shall arrange with the Secretary General to notify those who have been stipulated to have access to

personal data, as referred to in paragraph 7 of Article 38, of such amendment, supplementation, correction or deletion.

5. Where a court or other competent authority within the territory of any Contracting Party makes a final decision regarding the amendment, supplementation, correction or deletion of personal data in the central automated information system, the Contracting Party in whose territory the decision is made shall arrange, if it supplied the data, for the amendment, supplementation, correction or deletion of this data without delay, or, if the data was supplied by another Contracting Party, it shall advise the supplying Contracting Party of the decision. The supplying Contracting Party shall then arrange for the amendment, supplementation, correction or deletion of the data without delay.

#### **Article 41**

##### Responsibilities and Liabilities

1. A Contracting Party shall be responsible, to the extent possible, for the accuracy, currency and lawfulness of the information it has included in the central automated information system.

2. A Contracting Party shall be liable, in accordance with its legal and administrative provisions, for damage caused to a person through the use of information obtained from the central automated information system by that Contracting Party. This shall also be the case where the damage was caused by the supplying Contracting Party entering inaccurate data or entering data that is contrary to this Convention.

3. If the Contracting Party found liable for damage under paragraph 2 of this Article is not the Contracting Party that supplied the information, the Contracting Parties concerned shall agree on the terms and conditions of reimbursement to the liable Contracting Party of any sums it paid out in compensation.

4. A Contracting Party shall be liable, in accordance with its legal and administrative provisions, for damage caused to a person through the use of information by Council officers obtained from the central automated information system contrary to this Convention, to the extent that this information had been included in the system by that Contracting Party.

5. If damage is established by a competent judicial authority with respect to paragraph 4 of this Article, the Contracting Party concerned may refer the decision to the Administrative Committee who will make a recommendation to the Council regarding any reimbursement.

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## **CHAPTER XI**

### **Exemptions and Reservations**

#### **Article 42**

##### Exemptions

1. Where any assistance requested under this Convention may infringe the sovereignty, laws and treaty obligations, security, public policy or any other substantive national interest of a requested Contracting Party, or prejudice any legitimate commercial or professional interests, such assistance may be declined by that Contracting Party or provided subject to any terms or conditions it may require.

2. Where a requesting administration would be unable to comply if a similar request were made by the requested administration, it shall draw attention to that fact in its request.

Compliance with such a request shall be at the discretion of the requested administration.

3. Assistance may be postponed if there are grounds to believe that it will interfere with any ongoing investigation, prosecution or proceeding. In such a case, the requested administration shall consult with the requesting administration to determine if assistance can be given subject to such terms or conditions as the requested administration may specify.

4. If the requested administration considers that the effort required to fulfill a request is clearly disproportionate to the perceived benefit to the requesting administration, it may decline to provide the requested assistance.

5. Where assistance is declined or postponed, reasons for declining or postponement shall be given.

#### **Article 43**

## Reservations

1. Articles 9, 10, 12, 14, 15, 16, 17, 19, 20, 21, 22, 23, 29 and 30 may, in whole or in part, be subject to reservations.
2. A Contracting Party shall be deemed to have accepted all provisions in Articles 9, 10, 12, 14, 15, 16, 17, 19, 20, 21, 22, 23, 29 and 30 unless at the time of signature, ratification of, or accession to the Convention, it has notified the Secretary General of any reservations referring to these provisions.
3. A Contracting Party that has entered reservations may withdraw them, in whole or in part, at any time by notification to the depositary specifying the date on which such withdrawal takes effect.

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## CHAPTER XII

### Costs

#### Article 44

1. Subject to paragraphs 2 and 3 of this Article, the costs incurred in the application of this Convention shall be borne by the requested Contracting Party.
2. Expenses and allowances paid to experts and witnesses, as well as costs of translators and interpreters, other than Government employees, shall be borne by the requesting Contracting Party.
3. If the execution of a request requires expenses of a substantial or extraordinary nature, the Contracting Parties shall consult to determine the terms and conditions under which the request will be executed as well as the manner in which the costs shall be borne.

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## CHAPTER XIII

### Final Provisions

#### Article 45

##### Management of the Convention

1. An Administrative Committee shall be established to :
  - (a) consider issues relating to the implementation and administration of this Convention, and any amendments proposed thereto;
  - (b) recommend to Contracting Parties amendments to this Convention;
  - (c) recommend to Contracting Parties measures to secure the uniform interpretation and application of this Convention;
  - (d) decide the composition of the Management Team referred to in paragraph 1 of Article 32;
  - (e) examine and approve the technical and operational procedures referred to in paragraph 2 of Article 32 relating to the central automated information system;
  - (f) appoint one or more independent representatives to carry out the verifications referred to in paragraph 2 of Article 33 and paragraph 4 of Article 37 and determine the scope, frequency and other terms and conditions for such verifications;
  - (g) determine the conditions referred to in paragraph 3 of Article 36 relating to the use by Council officers of information obtained from the central automated information system;
  - (h) determine the conditions referred to in paragraph 4 of Article 38 relating to permitting access to non-personal information in the central automated information system by international and regional governmental organizations;
  - (i) make recommendations to the Council regarding reimbursement under paragraph 5 of Article 41;
  - (j) maintain relations with other international organizations concerned;
  - (k) consider any other issues of relevance to this Convention that may be referred to it;
  - (l) inform the Enforcement Committee and the Council of its decisions.
2. The Administrative Committee shall take decisions regarding the modification of the lists in Articles 10, 28 and 29, as required, without recourse to Article 49 and regarding implementation of these decisions.

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3. All Contracting Parties to this Convention shall be members of the Administrative Committee.
4. Any entity qualified to become a Contracting Party to this Convention under the provisions of Article 46 may be invited to attend the sessions of the Administrative Committee as an observer. The status and rights of such observers shall be determined by the Administrative Committee. The Administrative Committee may invite the representatives of international organizations to attend its sessions as observers.
5. The Administrative Committee shall establish its own rules of procedure by a majority of not less than two-thirds of the Contracting Parties to this Convention. In the absence of rules of procedure of the Administrative Committee at the time of the entry into force of this Convention, the rules of procedure of the Council shall be applicable until the Administrative Committee adopts its own rules.
6. Without prejudice to paragraph 5 of this Article, matters related to this Convention before the Administrative Committee shall be decided by consensus of those present. Where a decision cannot be arrived at by consensus, the matter shall be decided by a simple majority vote of those present. In any case, for the purpose of modifying the lists in paragraph 2 of Article 10, paragraph 1 of Article 28, paragraph 1 of Article 29, as well as for the purpose of appointing one or more representatives under paragraph 1(f) of this Article, the decision shall be taken by a majority of not less than two-thirds of the Contracting Parties present and entitled to vote. In the case of permitting access to non-personal information referred to in paragraph 4 of Article 38, the decision shall be taken by unanimous vote of those present.
7. Each Contracting Party shall be entitled to one vote. Where paragraphs 3 and 4 of Article 46 apply, the Customs or Economic Unions which are Contracting Parties shall have, in the case of voting, only a number of votes equal to the total votes allocated to their Members which are Contracting Parties.
8. The Administrative Committee shall meet at least once each year. It shall annually elect a Chairperson and a Vice-Chairperson. The Customs administrations of the Contracting Parties shall communicate to the Secretary General any requests for the inclusion of items on the Agenda of the sessions of the Administrative Committee. The Secretary General shall circulate the invitation and the draft Agenda to the Customs administrations of the Contracting Parties and to the observers referred to in paragraph 4 of this Article at least six weeks before the Administrative Committee meets.
9. The Council shall provide the Administrative Committee with secretariat services.

#### **Article 46**

##### Signature, Ratification and Accession

1. Any Member of the Council and any Member of the United Nations or its specialized agencies may become a Contracting Party to this Convention:

(a) by signing it without reservation of ratification;

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(b) by depositing an instrument of ratification after signing it subject to ratification; or

(c) by acceding to it.

2. This Convention shall be open until 28 June 2004 for signature at the Headquarters of the Council in Brussels by the Members referred to in paragraph 1 of this Article.

Thereafter, it shall be open for accession by such Members.

3. Any Customs or Economic Union may become a Contracting Party to this Convention in accordance with paragraphs 1 and 2 of this Article. Such Customs or Economic Union shall inform the Secretary General of the Members forming the Union, as well as of its competence with respect to the matters governed by this Convention. Such Customs or Economic Union shall also inform the Secretary General of any substantial modification in the extent of its competence.

4. A Customs or Economic Union which is a Contracting Party to this Convention shall, for the matters within its competence, exercise in its own name the rights, and fulfil the responsibilities, which the Convention confers on the Members of such a Union which are

Contracting Parties to this Convention. In such a case, the Members of such a Union shall not be entitled to individually exercise these rights, including the right to vote.

5. Any Contracting Party which ratifies this Convention or accedes thereto shall be bound by any amendments to this Convention which have entered into force at the date of deposit of its instrument of ratification or accession.

#### **Article 47**

##### Territorial Application of the Convention

1. Any Contracting Party may at any time declare by notification given to the depositary that this Convention shall extend to all or any of its territories for whose international relations it is responsible. Such notifications shall take effect three months after the date of the receipt thereof by the depositary. However, this Convention shall not apply to any territories named in the notification before this Convention has entered into force for the Contracting Party concerned.

2. Any Contracting Party which has made notification under paragraph 1 of this Article extending this Convention to any territory for whose international relations it is responsible may notify the depositary, under the procedure of Article 52 of this Convention, that the territory in question will no longer apply this Convention.

#### **Article 48**

##### Implementation and Application of the Convention

1. In applying this Convention, Contracting Parties shall take the necessary measures to ensure, to the extent possible, that their officials who are responsible for investigating or combating Customs offences maintain personal and direct relations with each other.

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2. Two or more Contracting Parties may decide on the mutual arrangements to facilitate the implementation and application of this Convention between them.

#### **Article 49**

##### Amendments to the Convention

1. The text of any amendment recommended to the Contracting Parties by the Administrative Committee in accordance with paragraph 1(b) of Article 45, shall be communicated by the Secretary General to all Contracting Parties and to those Members of the Council that are not Contracting Parties.

2. Any proposed amendment to this Convention shall enter into force three months after the expiry of a period of twenty four months from the date of communication of the proposed amendment in accordance with paragraph 1 of this Article, provided that no objection to the proposed amendment has been communicated by a Contracting Party to the Secretary General during this period.

3. If an objection to the proposed amendment has been lodged by a Contracting Party before the expiry of the period of twenty four months specified in paragraph 2 of this Article, the amendment shall be deemed not to have been accepted.

#### **Article 50**

##### Settlement of Disputes

1. Without prejudice to paragraph 1 (c) of Article 45, any dispute between two or more Customs administrations concerning the interpretation or application of this Convention shall so far as possible be settled by negotiation between them.

2. Any dispute that is not settled by negotiation shall be referred by the Contracting Parties to the Administrative Committee which shall thereupon consider the dispute and make recommendations for its settlement.

3. The Contracting Parties in dispute may agree in advance to accept the recommendations of the Administrative Committee as binding.

4. Disputes for which no solutions are found shall be settled by diplomatic means.

#### **Article 51**

##### Entry into Force

1. This Convention shall enter into force three months after five of the entities referred to in paragraphs 1 and 3 of Article 46 thereof have signed the Convention without reservation of ratification or have deposited their instrument of ratification or accession.

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2. After entry into force in accordance with paragraph 1 of this Article, this Convention shall enter into force for any other Contracting Party three months after it has become a Contracting Party in accordance with the provisions of Article 46.

#### **Article 52**

##### Denunciation

1. This Convention is of unlimited duration but any Contracting Party may denounce it at any time after the date of its entry into force under Article 51 thereof.

2. The denunciation shall be notified in writing, deposited with the depositary.

3. The denunciation shall take effect six months after the receipt of the instrument of denunciation by the depositary.

#### **Article 53**

##### Depositary of the Convention

1. This Convention, all signatures with or without reservation of ratification and all instruments of ratification or accession shall be deposited with the Secretary General.

2. The depositary shall :

(a) receive and keep custody of the original texts of this Convention;

(b) prepare certified copies of the original texts of this Convention and transmit them to the Contracting Parties and those Members of the Council which are not Contracting Parties and to the Secretary General of the United Nations;

(c) receive any signature with or without reservation of ratification, ratification or accession to this Convention and receive and keep custody of any instruments, notifications and communication relating to it;

(d) receive and keep custody of national legal and administrative provisions and written declarations in respect of paragraph 4 of Article 25;

(e) receive and keep custody of any notifications of reservations by Contracting Parties in accordance with Article 43;

(f) examine whether the signature or any instrument, notification or communication related to this Convention is in due and proper form and, if need be, bring the matter to the attention of the Contracting Party in question;

(g) notify the Contracting Parties, those Members of the Council that are not Contracting Parties, and the Secretary General of the United Nations of :

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- the date of entry into force of this Convention in accordance with Article 51 of this Convention;

- notifications received in accordance with Articles 43, 46, 47 and 51 of this Convention;

- denunciations under Article 52 of this Convention;

- any amendments accepted or objected to in accordance with Article 49 of this Convention and the date of their entry into force; and

- any decisions taken by the Administrative Committee referred to under paragraph 2 of Article 45;

(h) notify the Contracting Parties of the authorities referred to in paragraph 3 of Article 2;

(i) notify the Customs administrations of the official contact points referred to in paragraph 1 of Article 3.

3. In the event of any difference appearing between a Contracting Party and the depositary as to the performance of the latter's function, the depositary or that Contracting Party shall bring the question to the attention of the other Contracting Parties and to the signatories or, as the case may be, the Administrative Committee.

#### **Article 54**

##### Registration and Authentic Texts

In accordance with Article 102 of the Charter of the United Nations, this Convention shall be registered with the Secretariat of the United Nations at the request of the Secretary General. In witness hereof the undersigned, being duly authorized thereto, have signed this Convention.

Done at Brussels, this twenty-seventh day of June two thousand and three in the English and French languages, both texts being equally authentic, in a single original which shall be deposited with the Secretary General who shall transmit certified copies to all the entities referred to in paragraphs 1 and 3 of Article 46 of this Convention.



**Annex 8.5**

**Agreement between the  
Government of Romania and  
the Government of the  
Republic of Hungary regarding  
the unfolding of the railway  
traffic through the state border**

## AGREEMENT

From 12/03/1997

Published in the Official Monitor, Part I, no.109 from 10/03/1998

Between the Government of Romania and the Government of the Republic of Hungary regarding the unfolding of the railway traffic realized through the state border

The Government of Romania and the Government of the Republic of Hungary, denominated, in the following, contracting sides, willing to keep the favorable relations, relations of good neighboring between the two states, striving to regulate and develop the railway traffic between states, taking into consideration the international agreements to which both contracting sides are part of, taking into account the Wien Convention which regards the treaties' right, signed on the 23<sup>rd</sup> of May of 1969, agreed on the following:

### ARTICLE 1

#### Introductive Dispositions

1. For border crossing railway routes the following railway lines are available:
  - Carei – Agerdomajor
  - Valea lui Mihai – Nyirabrany
  - Episcopia Bihor – Biharkeresztes
  - Salonta – Kotegyan
  - Curtici – Lokoshaza
2. For the border crossing railway routes presented at paragraph 1, the border stations are the following:
  - a. Carei
  - Valea lui Mihai
  - Episcopia Bihor
  - Salonta
  - Curtici
  - Agerdomajor
  - Nyirabrany
  - Biharkeresztes
  - Lokoshaza
  - b. common station: Curtici
3. The railways of the contracting sides agree on common consent on the transmission stations.
4. On the basis of the approval of the competent bodies of the contracting sides, the railways agree on the traffic type which unfolds at each border

- crossing (of passenger, of traveling luggage, of parcels, of goods and postal forwarding).
5. The control regulations of the border traffic, including the service of assuring the order and the guard of the trains that cross the border, are included in distinctive bilateral agreements between the two states.
  6. The railway connection and exchange service unfolds in the common station, respectively in the transmission stations.

## ARTICLE 2 Definitions

The notions from the present agreement have the following definitions:

1. the term of domicile state means the state of the contracting side on whose territory the transmission station is;
2. the term of neighboring state means the state of the other contracting side;
3. the term of railway defines, for Romania, The National Society of the Romanian Railways – Societatea Nationala a Cailor Ferate (S.N.C.F.R.) and, respectively, for the Republic of Hungary, The Hungarian Railways Unltd. (MAV Rt);
4. the term of domicile railways refers to the railways of the domicile state;
5. the term of neighboring railways means the railways of the other contracting side;
6. the term of connection and exchange service refers to the activity of circulation, commercial and technical, necessary for the traffic on the railway line that crosses the border;
7. the term of control service of the traffic that crosses the border means the control activity of the competent bodies of the contracting sides, as regards the frontier guard's, customs, phyto-sanitary, veterinary and, if necessary, epidemiological control, at border, of the persons, goods and transportation means, depending on the situation;
8. the term of border station means, generally, the nearest railway station to the state border;
9. the term of transmission station means that railway station in which the services of connection and exchange are carried out;
10. the term of common station refers to the transmission stations, in which the two railways carry out the connection and exchange service, and the competent bodies of the contracting sides carry out together the control service of the traffic that crosses the border;
11. the term of the railway that crosses the border means the railway portion between the transmission station of the domicile railway and the border station of the neighboring railway;

12. the term of railway section that crosses the border means the railway portion between the state border and the border station;
13. the term of competent bodies refers to those bodies of the contracting sides that are charged with the fulfillment of the tasks that concern the border railway traffic, tasks that result from the present agreement.

### ARTICLE 3

#### The Competent Authority

For the applying in practice of the present agreement the competent authority is responsible, that is:

- for Romania – The Ministry of Transportation;
- for the republic of Hungary – The Ministry of Transportation, Communication and Waters

### ARTICLE 4

#### The Service of Assuring the Order

In the transmission stations, border stations, common stations, as well as on the railway that crosses the border, the service of assuring the order is carried out on the basis of the internal regulations by the competent bodies of the state on whose territory the station is, respectively the railway sections that cross the border.

### ARTICLE 5

#### The Working Language

1. The oral and written communication between the staff of the competent bodies, which carry out the working tasks in the transmission station, is achieved in the official language of the domicile state. The staff of the competent bodies, which carry out working tasks in the stations and on the trains that are on the territory of the other contracting side, are obliged to know the language of the respective state, at the necessary level that would be needed for the adequate carrying out of the tasks.
2. Any written or oral communication between the railways of the two sides is achieved on the basis of the conventions between the railways.
3. Those dispositions and working forms that the railways exchange should not be accompanied by translations.
4. The reports signed by the staff of the competent bodies should be written in two original copies, in Hungarian and Romanian languages.

### ARTICLE 6

## The Over Passing of the Impediments in the Railway Circulation

1. The railways shall inform mutually, according to the valid international agreements to which the both contracting sides are part of, about all the impediments that could produce perturbations in the railway connections between the states of the contracting sides or in the railway traffic of the neighboring state.
2. The over passing of the impediments that appear in the border station, respectively on the railway that crosses the border, constitutes the obligation of that contracting side on whose territory the impediment appeared. The other railway offers its help, at the interested railway's request, especially by putting at disposal the installations, vehicles, and the material means, respectively the necessary labor force. The help granting is in exchange for a payment, the payment being established between the railways.

### ARTICLE 7 Working Spaces

1. To the competent bodies from the neighboring state must be assured in the common station, respectively in the transmission stations, adequate rooms and spaces for the normal unfolding of the working activity. The rooms shall be equipped with panels written in the official languages of the contracting sides, the text written in the official language of the domicile state being the first.
2. The competent bodies of the neighboring state have the right to mark these rooms with its own state emblem and flag.

### ARTICLE 8 The Detaching of the Staff of the Competent Bodies

1. For carrying out the tasks that result from the present agreement, the competent bodies of the contracting sides may detach staff in the common station, and the railways may detach staff in the transmission stations, too.
2. For carrying out the tasks that result from the present agreement, the neighboring railways may name representatives, on their own expense, in the common station and in the transmission stations.

The details concerning the working space and the activity of the representatives are established on common consent by the railways, by ulterior regulations.

## ARTICLE 9

### The Judicial Status of the Staff of the Competent Bodies on the Territory of the Neighboring State

1. The staff of the competent bodies, which carry out the working tasks on the territory of the neighboring state, on the basis of the present agreement, are obliged to respect the laws of the respective state, being, at the same time, the beneficiary of their protection.
2. The working relations of the staff of the competent bodies on the territory of the neighboring state are under the laws and other stipulations of their own country. For the working infringements produced on the territory of the neighboring state, the staff is exclusively responsible in front of their own superior bodies.
3. At the request of the competent bodies of the other contracting side, they are obliged to call back the staff that carry out working tasks on the territory of the neighboring state. The request for calling back must be motivated.

## ARTICLE 10

### Help and Protection Granting

1. The competent bodies of the contracting sides assure mutually the well unfolding of the working tasks and, if necessary, grant help and protection.
2. The staff of the competent bodies, which on the basis of the present agreement, are on the territory of the state of the other contracting side for the carrying out of the working tasks, as well as the family members that live with them, benefit from the medical assistance from the domicile state, according to the valid agreement between the contracting sides.

## ARTICLE 11

### The Free of Charge Journey

With the occasion of the fulfillment of the working tasks, the staff of the competent bodies, those detached on a long term and their family members may travel free of charge on the railway lines presented at the art.1, paragraph 1 of the present agreement.

## ARTICLE 12

### The Wearing of the Uniform

On the basis of the present agreement, the staff that carries out the working tasks on the territory of the neighboring state has the right, during the working hours, to wear the uniform and the working tokens.

### ARTICLE 13

#### The Construction, the Maintenance and the Supervising of the Railway Constructions and Installations

1. The construction, supervising, maintenance and reconstruction of the railway buildings and installations, in the border stations and on the border crossing railways, shall be carried out by the railway of the domicile state, on its own expense.
2. The maintenance and reconstruction of the railway buildings and installations, that are on the state border, as well as their supervising is regulated with the consent of the competent bodies of the contracting sides, by the railways, by an ulterior common agreement.

### ARTICLE 14

#### General Dispositions Concerning the Connection and Exchange Service

1. The railways regulate commonly the assurance of the connection and exchange service in the common station and in the transmission stations.
2. The unfolding of the international railway traffic on the railway that crosses the border until the transmission station or the common station is carried out by the railway of the neighboring state with own train and locomotive staff, according to own stipulations. The railways may agree on some other modalities.
3. The railways may agree that the trains should benefit from the services of the staff of the neighboring railway and from the rolling stock even beyond the border station.
4. In the transmission station and in the common station the railway stipulations of the domicile railway must be applied. Nevertheless, the railways may agree on the usage of the regulations of the neighboring railway for the activities that do not affect the circulation security.

### ARTICLE 15

#### The Train Timetable

With the occasion of the drawing up of the timetable of the trains that cross the state border, a parking time shall be assured, in the transmission station or in the

border station, time that would permit the safe and fast unfolding of the working tasks, taking into consideration the international practice in the domain.

#### ARTICLE 16

##### The Delivering and Taking Over of the Railway Cars and of the Goods

The delivering and taking over of the freight and passenger cars, of the palettes, loading devices, as well as of the cargo and of the transportation documents must be carried out according to the international agreements to which both contracting sides or railways are part of.

#### Article 17

##### Postal Forwarding

The delivery of the postal forwarding through the state border is carried out on the basis of the agreements and regulations from the Universal Convention of the Post Offices or on the basis of the agreements concluded by the postal bodies of the contracting sides.

#### ARTICLE 18

##### The Working Mail

The transmission of the railway working documents (telegrams, working forms, train timetables, tariff dispositions etc) is carried out on the basis of the international regulations that apply to both contracting sides and on the basis of the agreements concluded between the railways. The transmission is free of charge on the lines of the both railways.

#### ARTICLE 19

##### The Service of Telecommunication and Signalization, Centralization and Block

1. The construction and the maintenance of the telecommunication and security installations that assure the unfolding of the border traffic, as well as the other telecommunication installations that assure the connection between the railways are provided by the contracting sides on their own state territory, by their own railway. The competent bodies of the contracting sides may agree on this in a distinctive manner, too.
2. The maintenance and the reparation of the fixed signals, as well as of the afferent security and telecommunication installations that are on the territory of the neighboring state, are incumbent to the owning railway. The competent bodies of the contracting sides may agree on this in a distinctive manner, too.



3. The securing, installation and maintenance of the equipment of the railway data terminals for the preparation, processing, transmission and recording, as well as of the air conditioning devices, if necessary, are incumbent to the railway whose purposes are achieved within the terminal. The equipping with the necessary technique, for example phones, radiophones and their maintenance, is incumbent to the owning railway administration.
4. With the consent of the competent bodies the railways may agree on:
  - a. the realization of railway telecommunication connections, from the transmission station to the telecommunication network of the neighboring railway.
  - b. the realization of direct connections of railway telecommunications between the leading bodies of the railways.
5. The railway radio stations, installed in the transmission or border stations, shall function according to the valid laws of the state on whose territory they function and with the approval of the regulation bodies of the two states concerning the radio frequencies in the border zone.
6. For working interests, the employees of the competent bodies of the contracting sides may use free of charge the telecommunication installations of the neighboring railway. It is forbidden the usage of these installations in personal purpose. The connections realized according to the present article can not be linked to the public telecommunication network.

## ARTICLE 20 State Border Crossing

The state border crossing by the employees of the competent bodies of the contracting sides for the carrying out of the working tasks that result from the stipulations of the present agreement shall be fulfilled according to the valid agreement.

## ARTICLE 21 The Customs Control and Service

1. The customs operations and controls of the goods, parcels, and passengers transported on the railway shall be carried out by the customs bodies of the contracting sides, according to the internal customs stipulations of the respective state.
2. The competent bodies of one of the contracting sides shall accept any forwarding refused by the competent bodies of the other contracting side, if it is motivated in writing the cause of the refusal.

## ARTICLE 22 Customs Facilitations

1. There are exempted of import customs duties, taxes and other charges:
  - a. the objects that serve the transportations, the means of special transportation, the installations, the necessary tools, the materials and spare parts motivated with documentation, that serve to the maintenance in functioning, to the reparation, maintenance and over passing of the impediments in the railway circulation;
  - b. The installations and the furniture of the working spaces;
  - c. The official documents that are necessary for the carrying out of the working tasks, the consumables, the working equipment of the employees and the personal objects, including the food that these bring on the territory of the neighboring state for the fulfillment of the working tasks;
  - d. The mobile goods of personal usage that belong to the employees or their family members, which work permanently on the territory of the other contracting side.
2. The objects listed at paragraph 1, subparagraphs a., b., and d. shall be written in a report drawn up in three copies, out of which one shall be transmitted to the customs bodies of the other contracting side. The objects listed at paragraph 1, subparagraphs a., b., and d. shall be transported from the territory of one of the neighboring states to the territory of the other state, temporarily, and obligatorily returned.
3. According to the stipulations of the present agreement, the employees that work on the territory of the neighboring state may cross to the territory of their own state without any other special approval, as well as without the payment of the customs duties, of the taxes or any other charges, payment means that result from the selling of tickets, transport tariffs, customs or other taxes and charges, the objects and goods retained during the working hours, as well as the samples taken in veterinary or phyto-sanitary protection purpose. The adequate proving documents shall be presented, depending on the case, to the competent bodies, with the occasion of leaving the territory of the neighboring state.

## ARTICLE 23 Responsibilities

1. In the situation in which, during the connection and exchange service on the railway that crosses the border, in the common station, in the

- transmission or border stations, due to a special event in the functioning of the railway the decease or corporal damage of a passenger appears, respectively one of his/her objects is destroyed or damaged, the responsibilities towards the person entitled to compensations are incumbent to the railway on whose state territory the event that had caused the damage took place, according to the laws of that state.
2. When establishing the responsibilities, there shall be proceeded according to the stipulations of the paragraph 1 also in the situation in which, due to the same event, produced in the same place and in the same conditions, there is the decease or accident of another person that is not a passenger or a railway employee or an object that is not under the incidence of the transportation contracts is destroyed or damaged.
  3. If, due to an accident in the railway exploitation, produced during the carrying out of the connection and exchange service on the railway that crosses the border, in the transmission or border stations or with the occasion of the going to or from the working place, there is the decease or corporal damage of an employee belonging to the competent bodies of the other contacting side or an object worn or possessed by him/her is destroyed or damaged, the establishing of the quantum of the compensations from the judicial point of view shall be done as if the accident was on the territory of the neighboring state.
  4. As regards the responsibilities that result from the transportation contracts as consequence of the losses or damages of the means of transportation, of their parts or accessories, of the loading devices or of the palettes, the contracting sides shall apply the stipulations included in the international agreements and conventions to which both contracting sides or railways are part of.
  5. As consequence of the stipulations of the paragraphs 1 and 4, concerning the fees of the mutual claims there shall be proceeded as it follows:
    - a. the damages produced by the employees of the railway shall be supported by the railway whose employee produced the damage;
    - b. the damages produced due to a non corresponding state of the constructions, installations, and means of haulage that assure the unfolding of the railway circulation and its security, shall be supported by the railway to which is incumbent the task of their maintenance and reparation;
    - c. the responsibility for the damages produced due to the non corresponding technical state of another rolling stock is incumbent to the railway that carried out the last technical examination in the common station or in the transmission station;
    - d. if the damages are produced by both railways or employees of the both railways, the responsibility shall be proportional to the guilt of each of

- them, in the case in which it can not be established concretely which of the two sides and in what proportion is responsible for the damages, both railways shall support equally the consequences;
- e. the damages produced out of inevitable causes shall be supported by the affected railway.
  6. The investigation and establishing of the causes of the events, accidents or fires, in the situation in which it is supposed the responsibility of the other railway, shall be done by the representatives of both railways, according to the laws of the state on whose territory these have been produced.
  7. For the regulation of the situations in which a railway addresses to the other railway for compensations, the stipulations of the international agreements are applied, stipulations to which the both contracting sides and railways are part of.

#### ARTICLE 24

##### The Deduction of the Services

The payment and the deduction of the transportation and the railway services, respectively of the possible damages, are done on the basis of the agreements between the railways of the contracting sides.

#### ARTICLE 25

##### Epidemiological, Veterinary and Phyto-sanitary Verifications

The verification from the epidemiological, veterinary and phyto-sanitary point of view of the perishable goods and of the living beings that are forwarded on the railway over the state border is incumbent to the competent bodies of the contracting sides according to the internal valid laws and the international agreements to which the contracting sides are part of.

#### ARTICLE 26

##### The Joint Commission

1. For the applying and unfolding of the stipulations of the present agreement, the contracting sides shall form up a joint commission of border railway circulation, made up of the representatives of the competent bodies of the contracting sides.
2. The joint commission unfolds its meetings annually or any time that it is necessary, alternatively, on the territory of the both states.
3. The activity of the joint commission shall unfold according to the agenda that shall be established with the occasion of its first session.

## ARTICLE 27 The Entry in Force

1. The present agreement shall entry in force at the date at which both sides shall have notified in writing, mutually, the fulfillment of the valid internal legal procedures concerning the approval and the ratification.
2. Any modification of the present agreement shall be consented on by the contracting sides and it shall entry in force according to the procedure mentioned at paragraph 1 of this article.

## ARTICLE 28 The Validity of the Agreement

The present agreement is concluded for an undetermined period.

The validity of this agreement shall expire at 6 months after one of the contracting sides shall have notified, in writing, to the other contracting side the denunciation of this.

Signed at Budapest on the 12<sup>th</sup> of March of 1997, in two original copies, each of them in Romanian and Hungarian languages, both texts being equally authentic.

## **Annex 9.1**

## **Pictures of intermodal terminals**

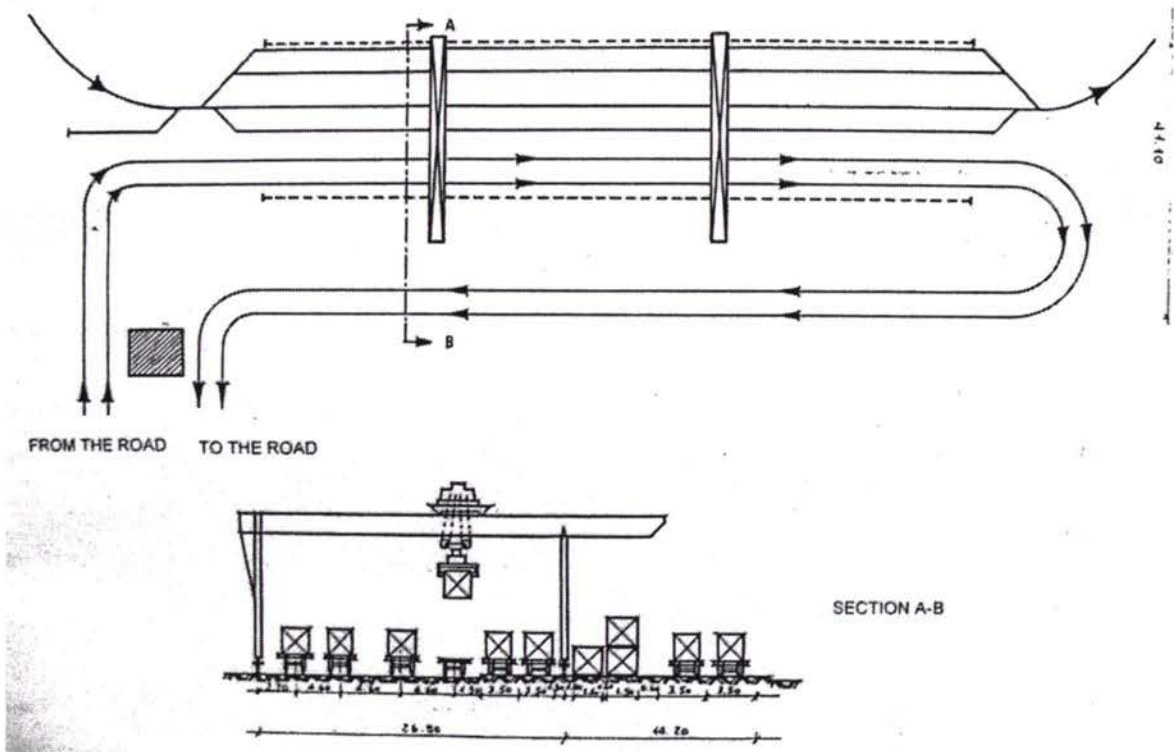


Figure 1 – Scheme of a big intermodal terminal

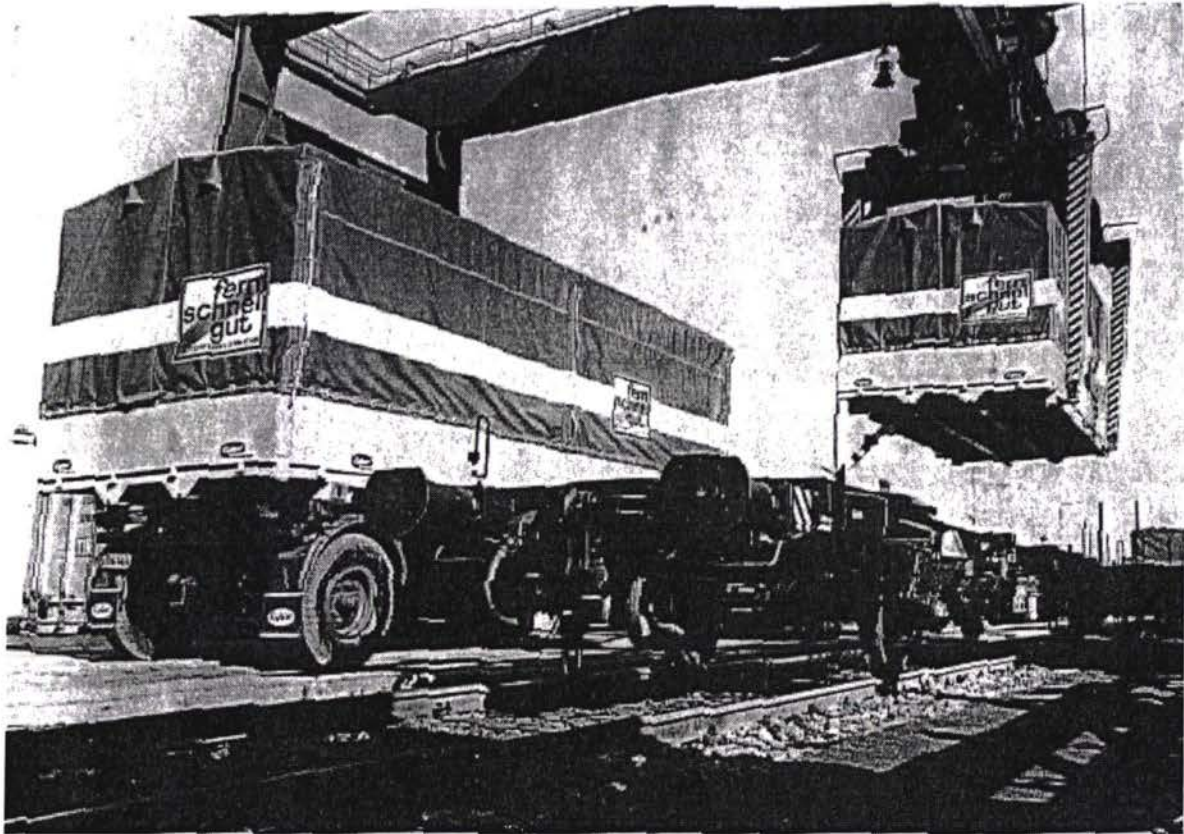


Figure 2 – Gantry crane lifting a swap body

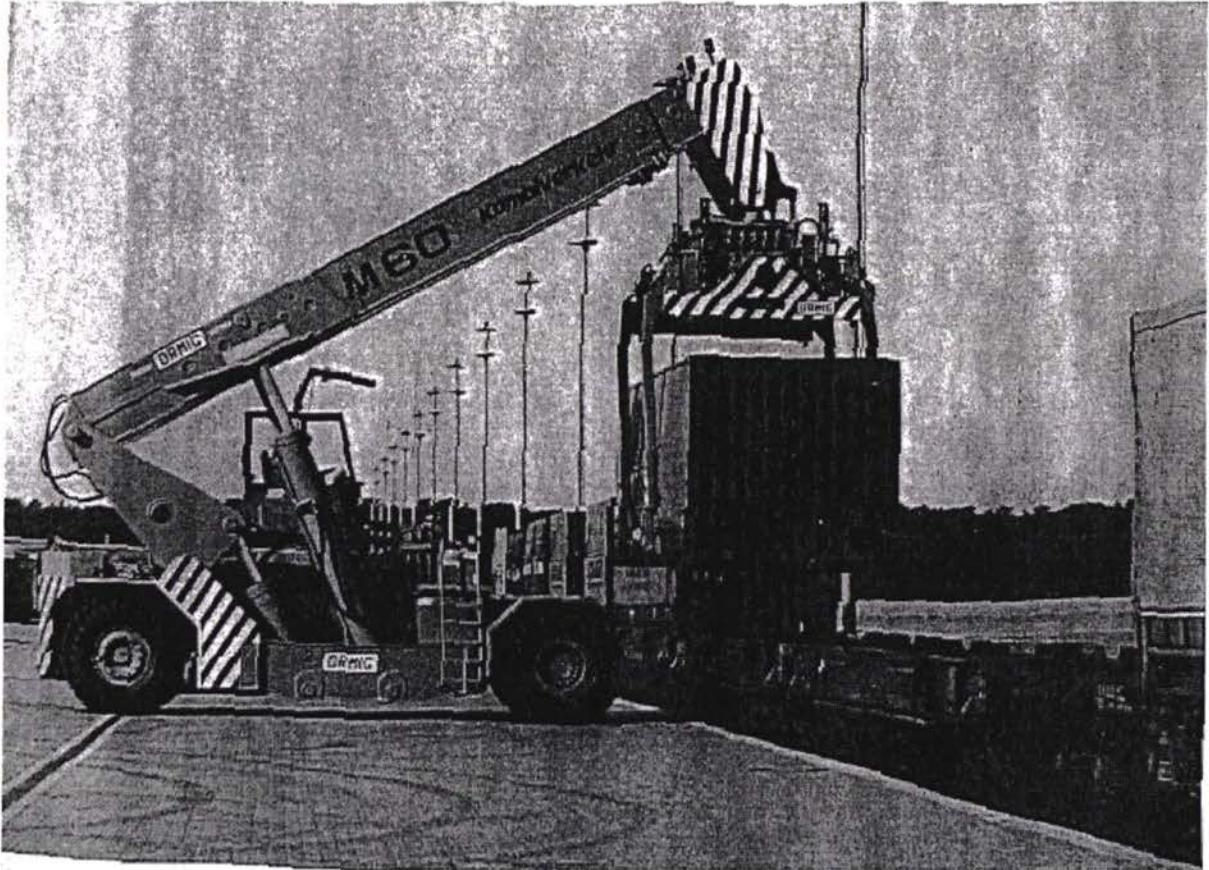


Figure 3 – A container handling front lift at work



Figure 4 – Dushanbe terminal





**Figure 5 – Dushanbe terminal – Gantry crane lifting a 40' container**

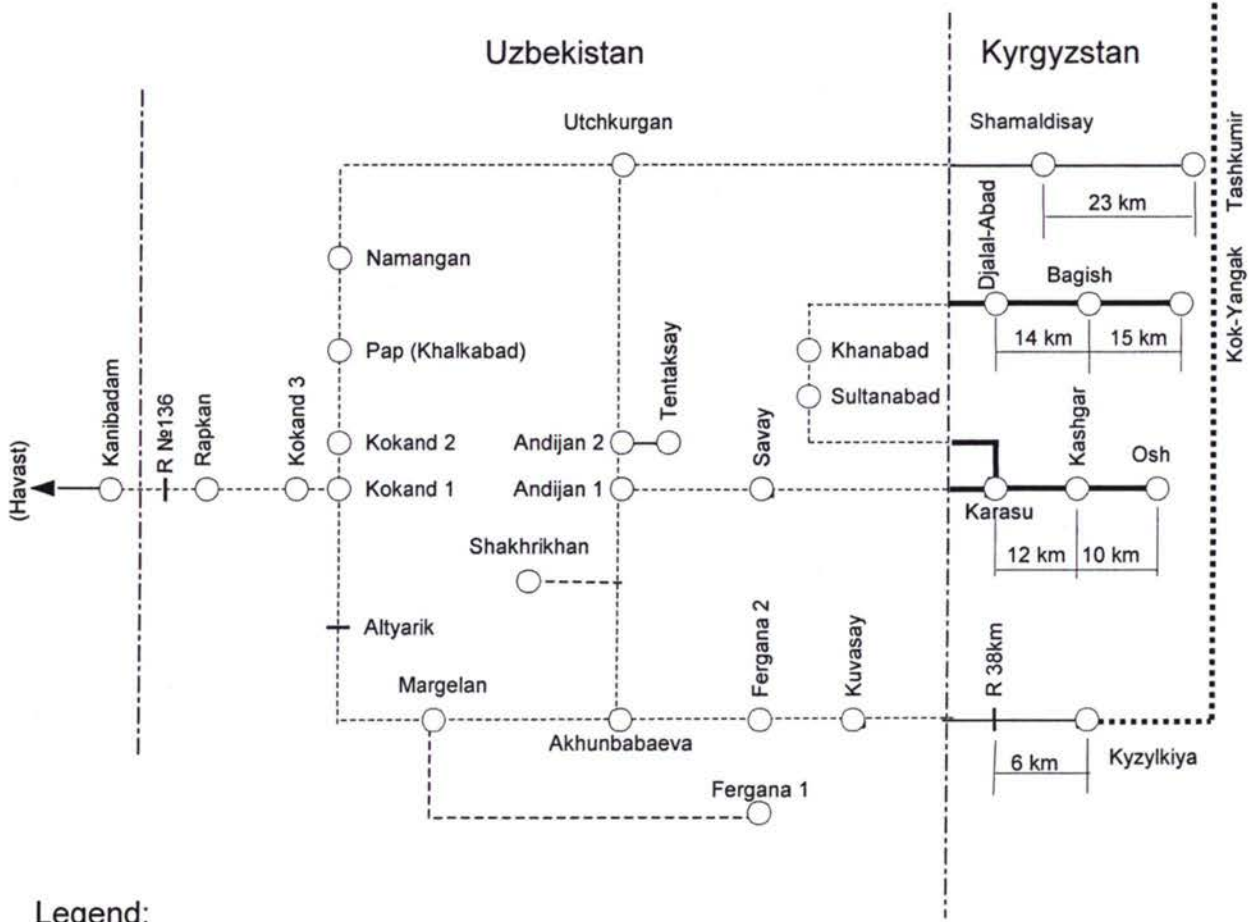
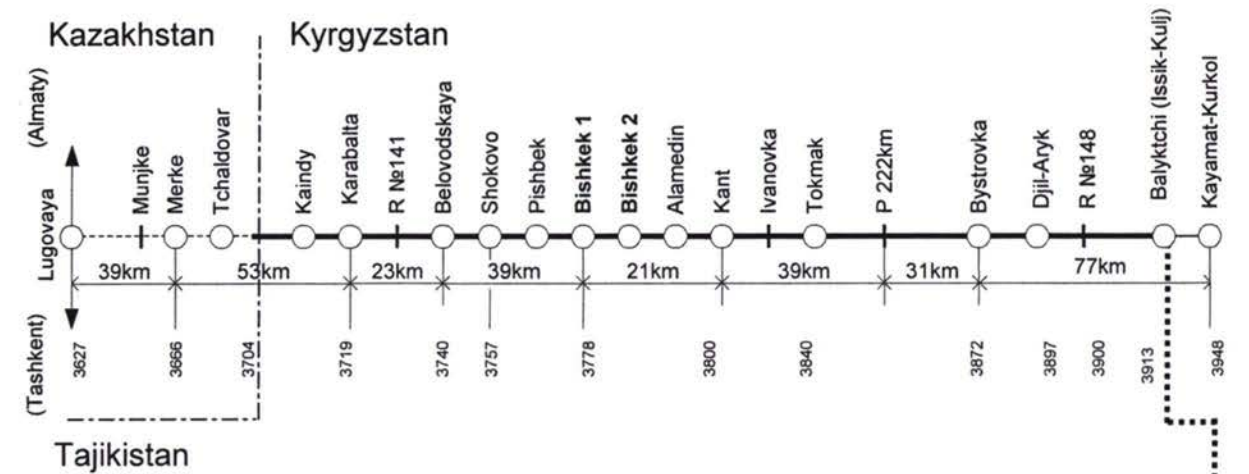


**Figure 6 – Storage of old Russian standard containers**



**Figure 7 – Kudjand terminal – Russian container handled by a light gantry crane**

## **Annex 10.1.1 Schemes of Railway Networks in Central Asia**



Legend:

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					

Fig. 1 Kyrgyzstan Railway Diagram

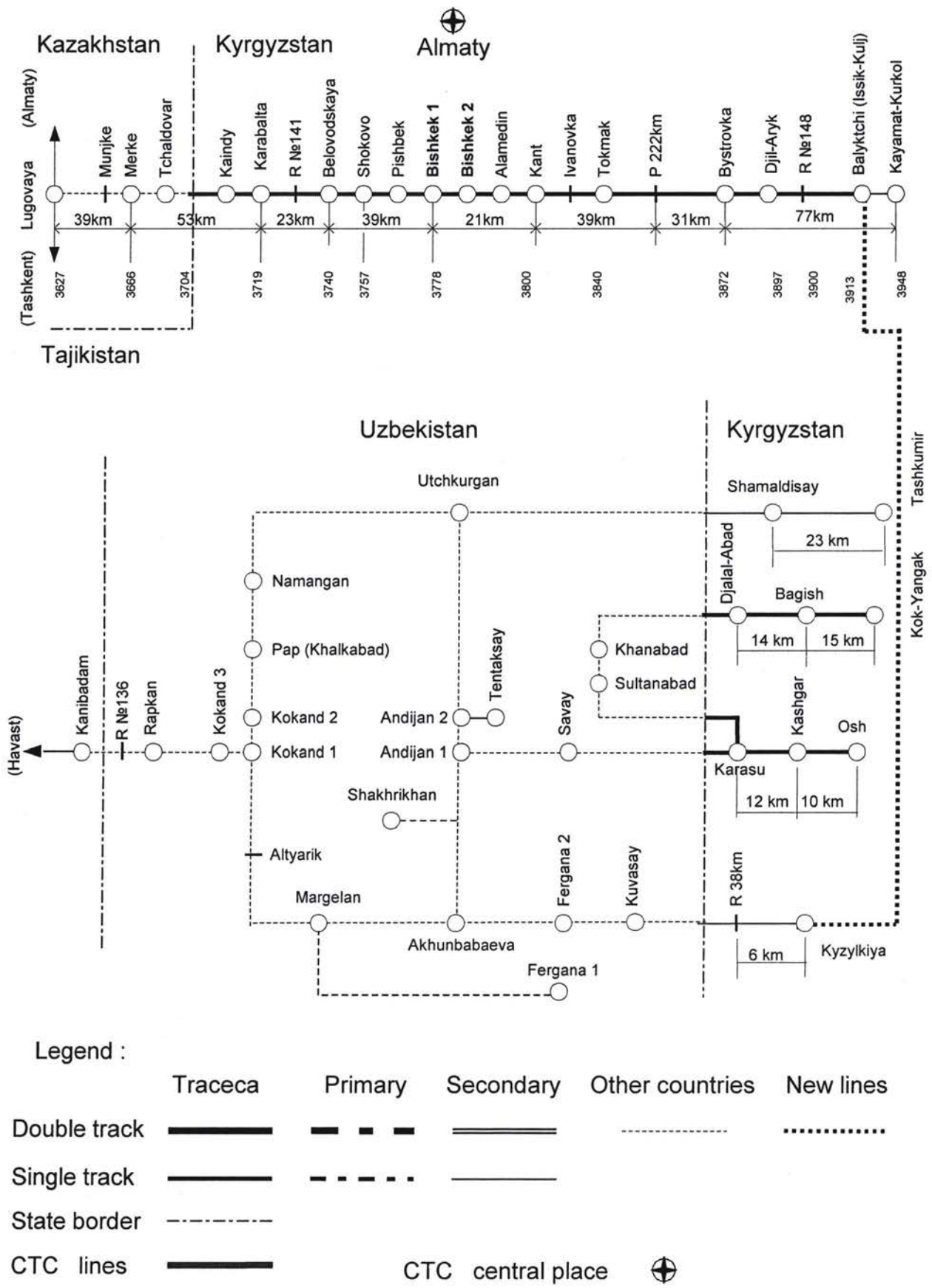
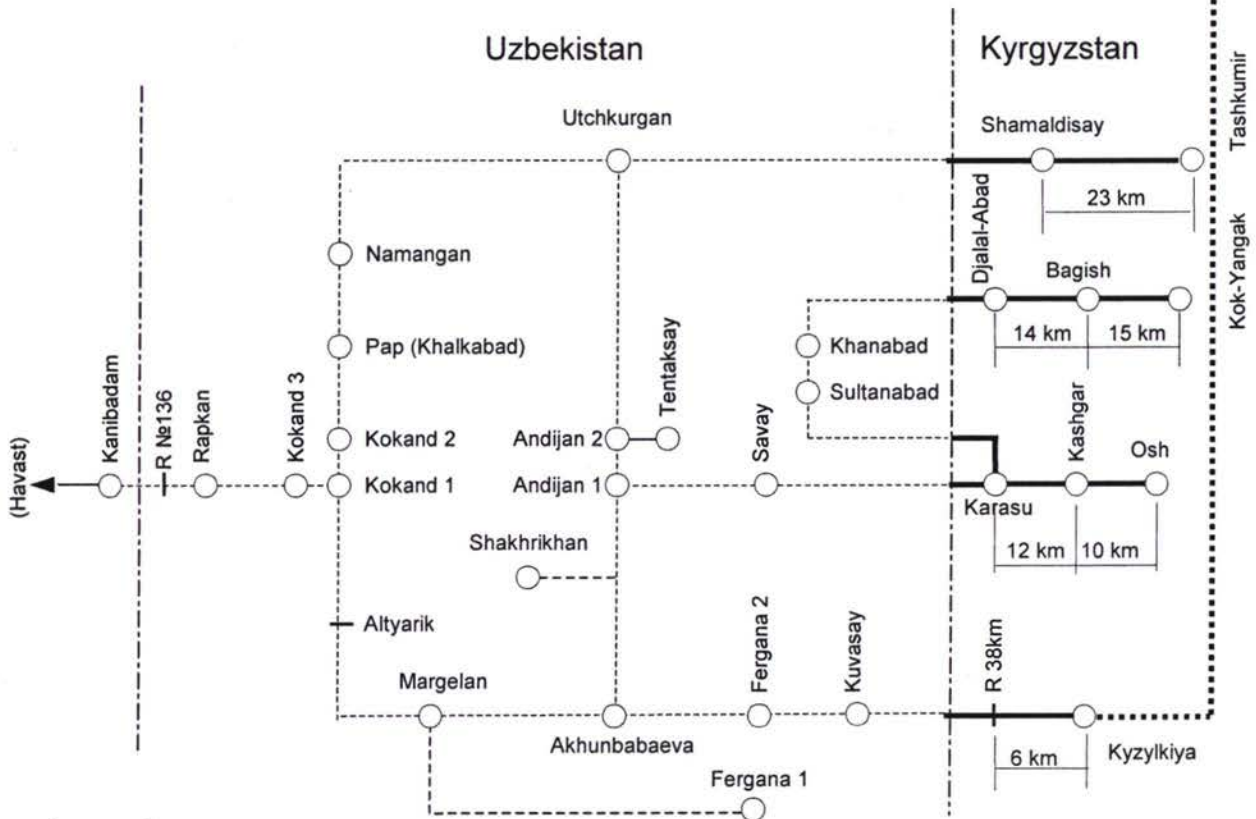
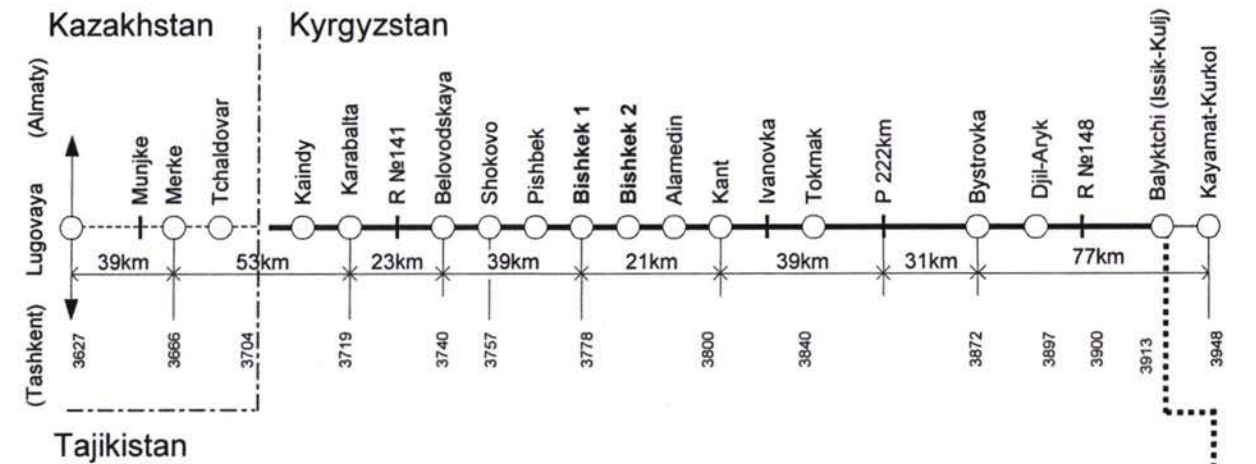


Fig. 2 Kyrgyzstan CTC lines



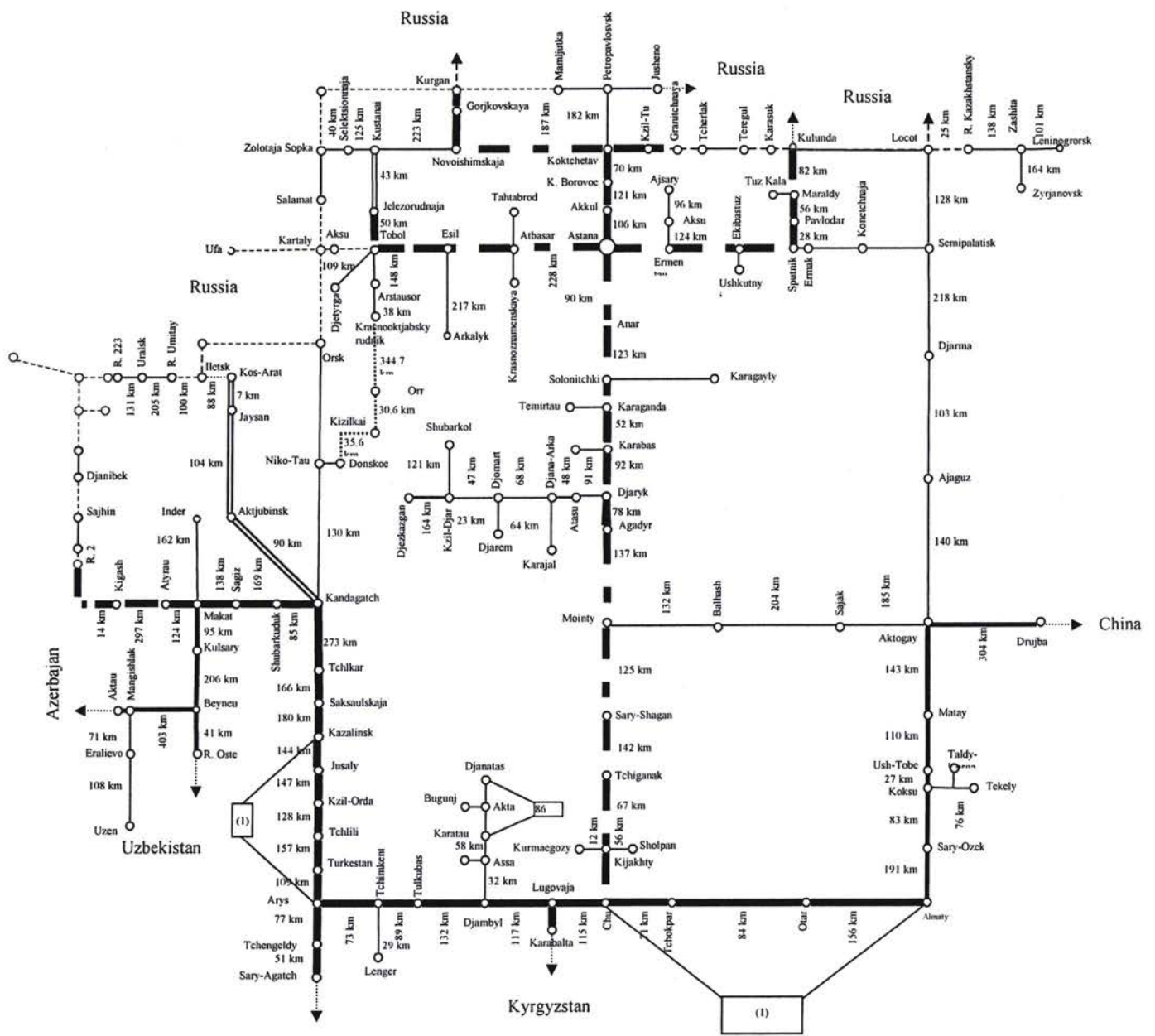
Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					
Automatic block					
Semi automatic block					
Another block					

Fig. 3 Kyrgyzstan Block types

#	Line Section	With Automatic Block	With Semiautom. Block	Other type Block	Controlled by CTC	Without control	Lenth	No of Stations	Stations with Interlocking	Stations with MKD	Stations without Interlocking
1	Lugovaja - Pishpek	154	0	0	154	0	154	12	12	0	0
2	Pishpek - Rybatch'e	0	168	0	0	168	168	10	5	5	0
3	Osh Region	0	79	0	0	79	79	9	4	2	3
	<b>TOTAL:</b>	<b>154,0</b>	<b>247,0</b>	<b>0,0</b>	<b>154,0</b>	<b>247,0</b>	<b>401,0</b>	<b>31</b>	<b>21</b>	<b>7</b>	<b>3</b>

Fig. 4 Kyrgyzstan line data

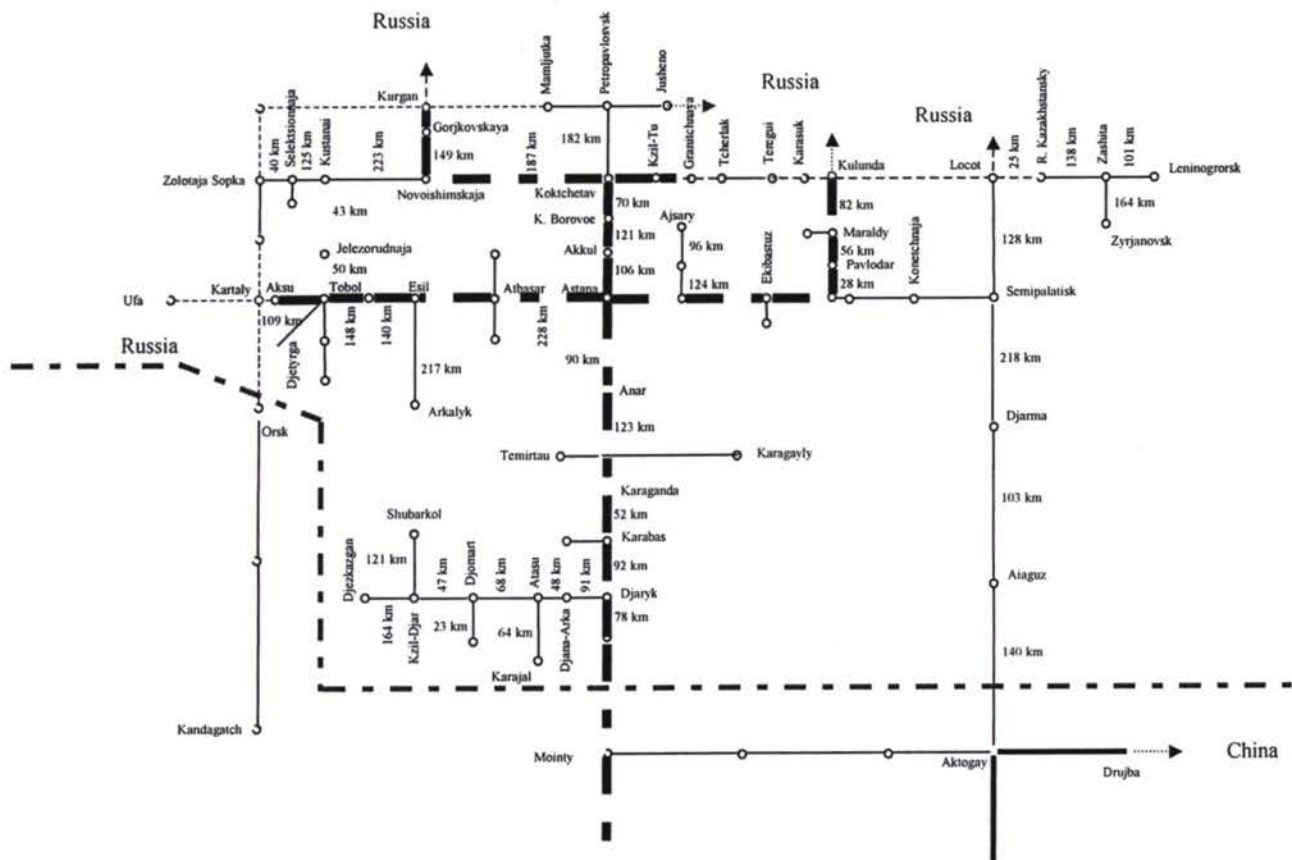


Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					

Fig. 5 Kazakhstan Railway Diagram





Legend:

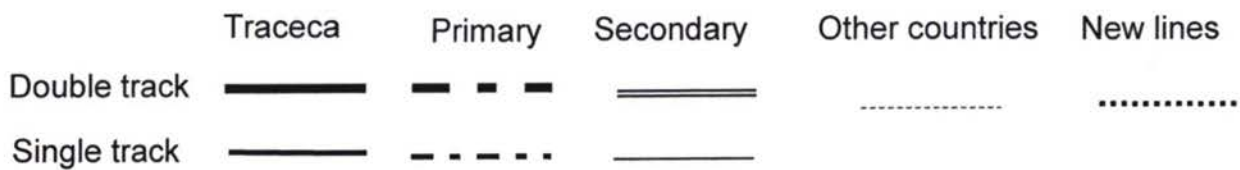
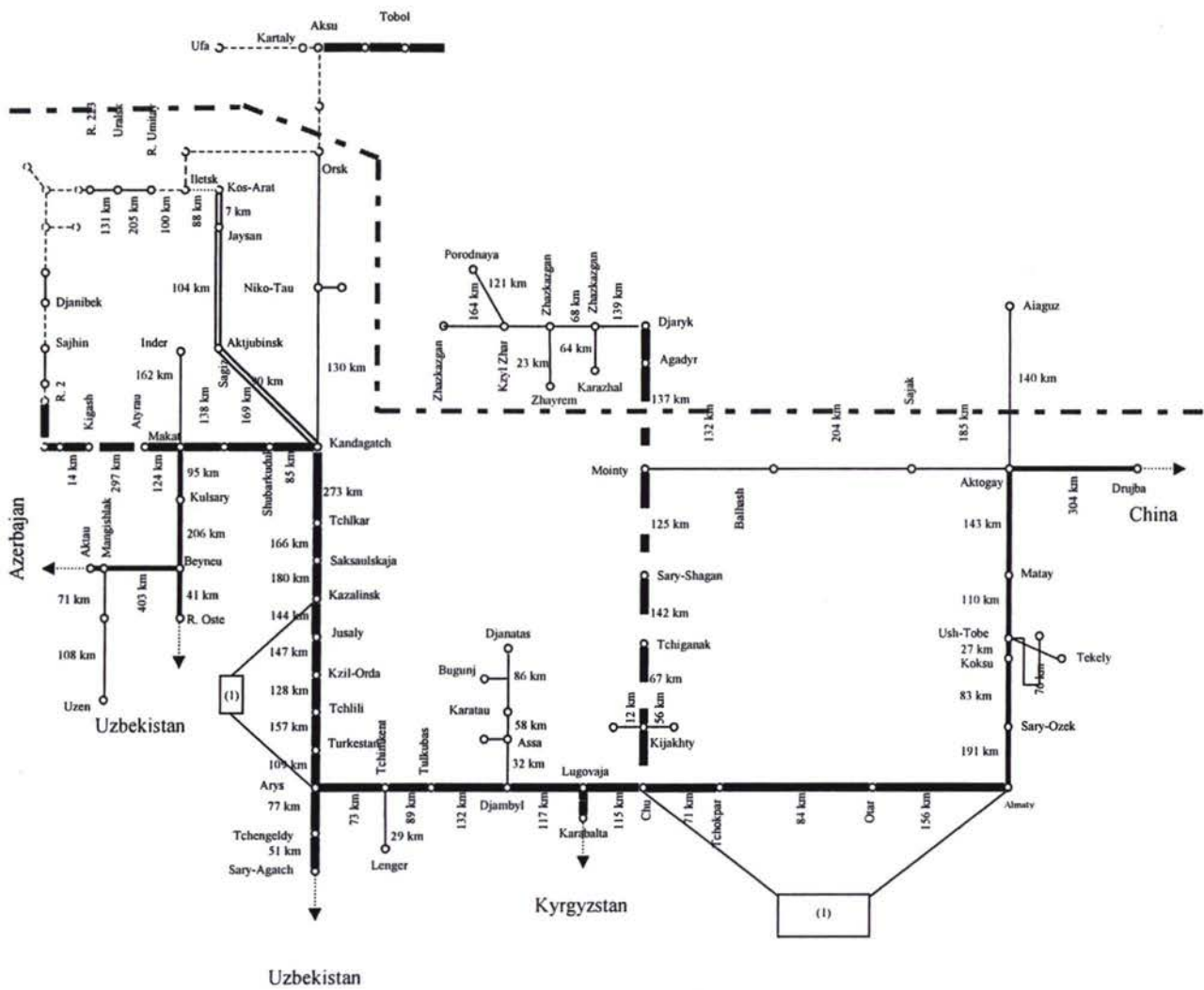


Fig. 6 North Kazakhstan Railway Diagram



Legend:

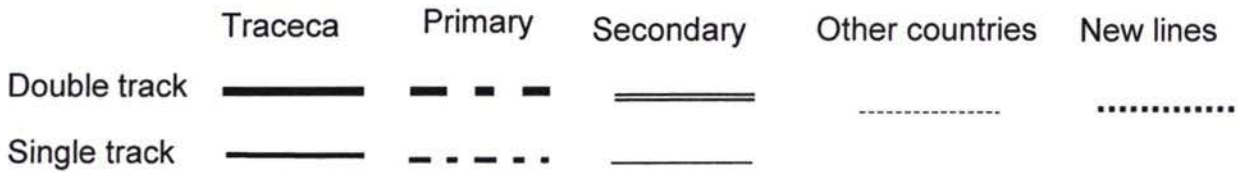
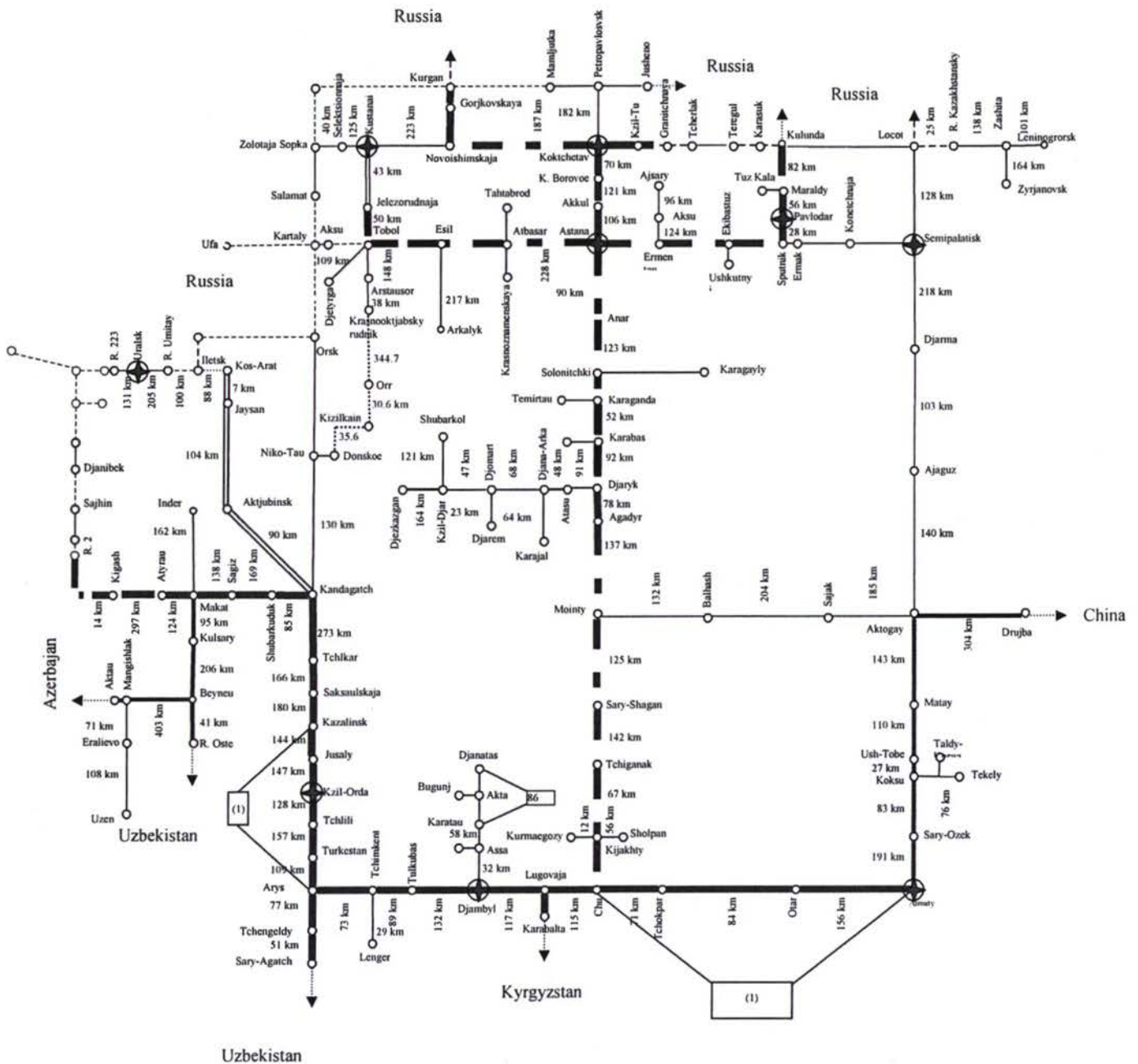


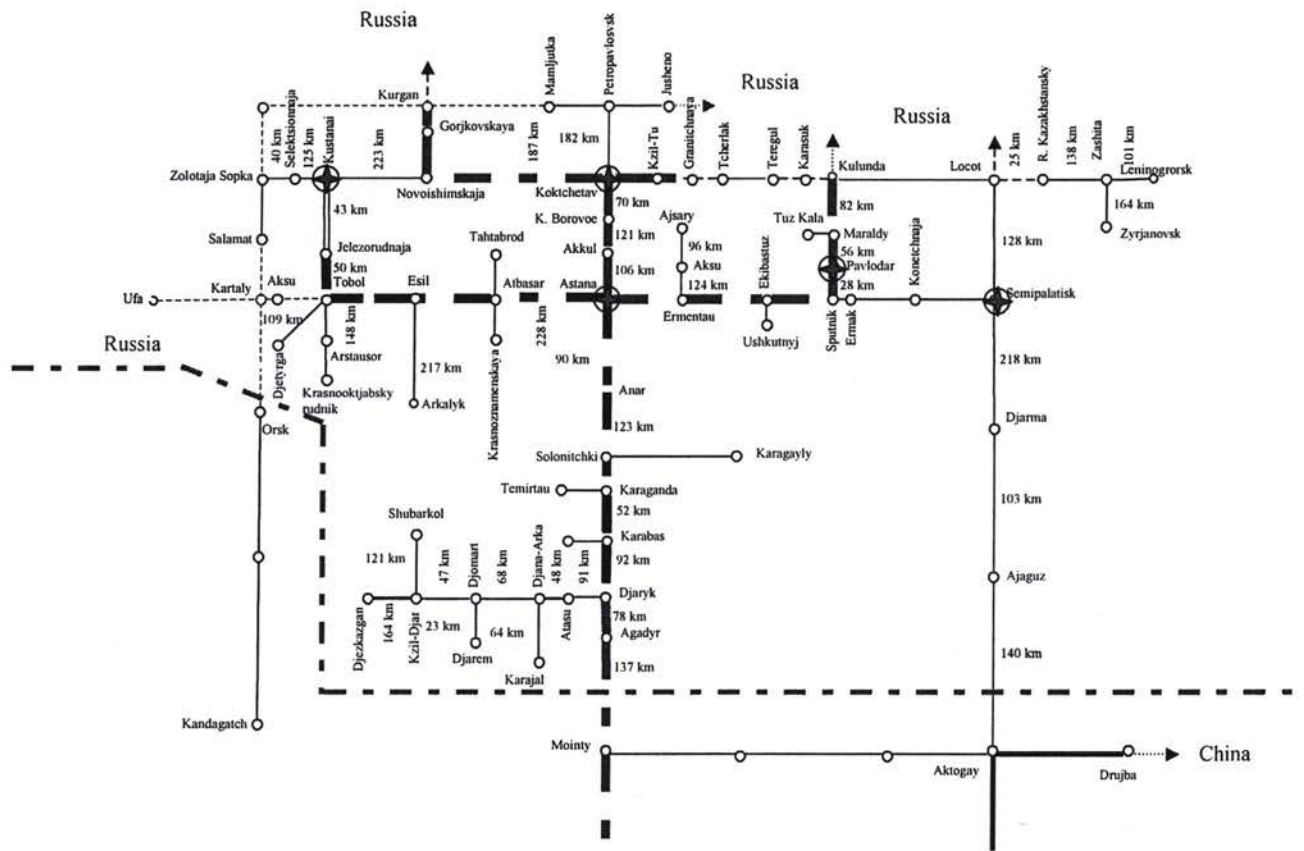
Fig. 7 South Kazakhstan Railway Diagram



Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track	▬▬	▬ ▬ ▬ ▬	▬▬▬▬	-----	.....
Single track	▬	- - - - -	▬		
CTC lines	▬▬▬▬				
CTC central place	⊕				
(1) - Double track in sections					

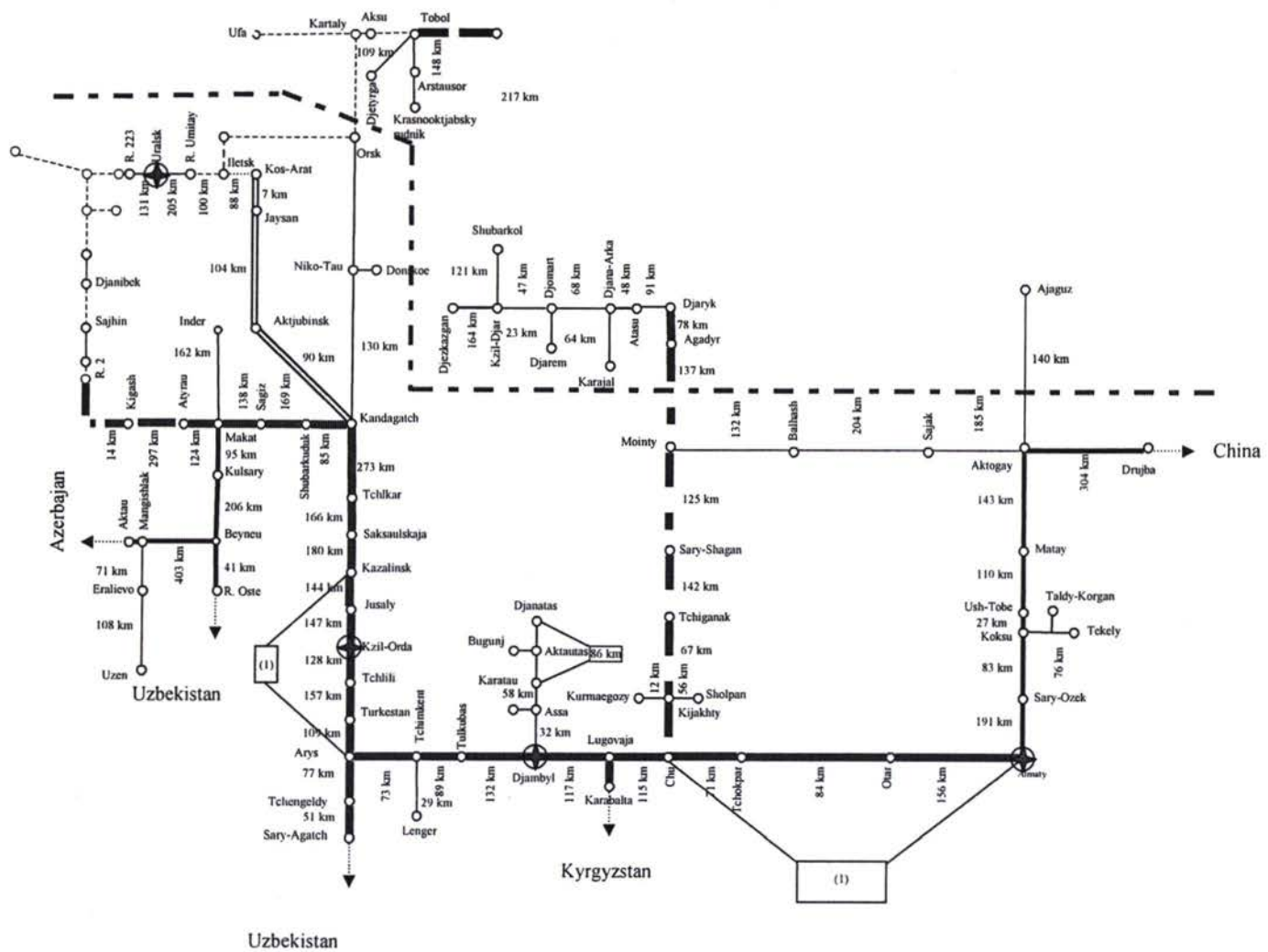
Fig. 8 Kazakhstan CTC lines



Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
CTC lines					
CTC central place					
(1) - Double track in sections					

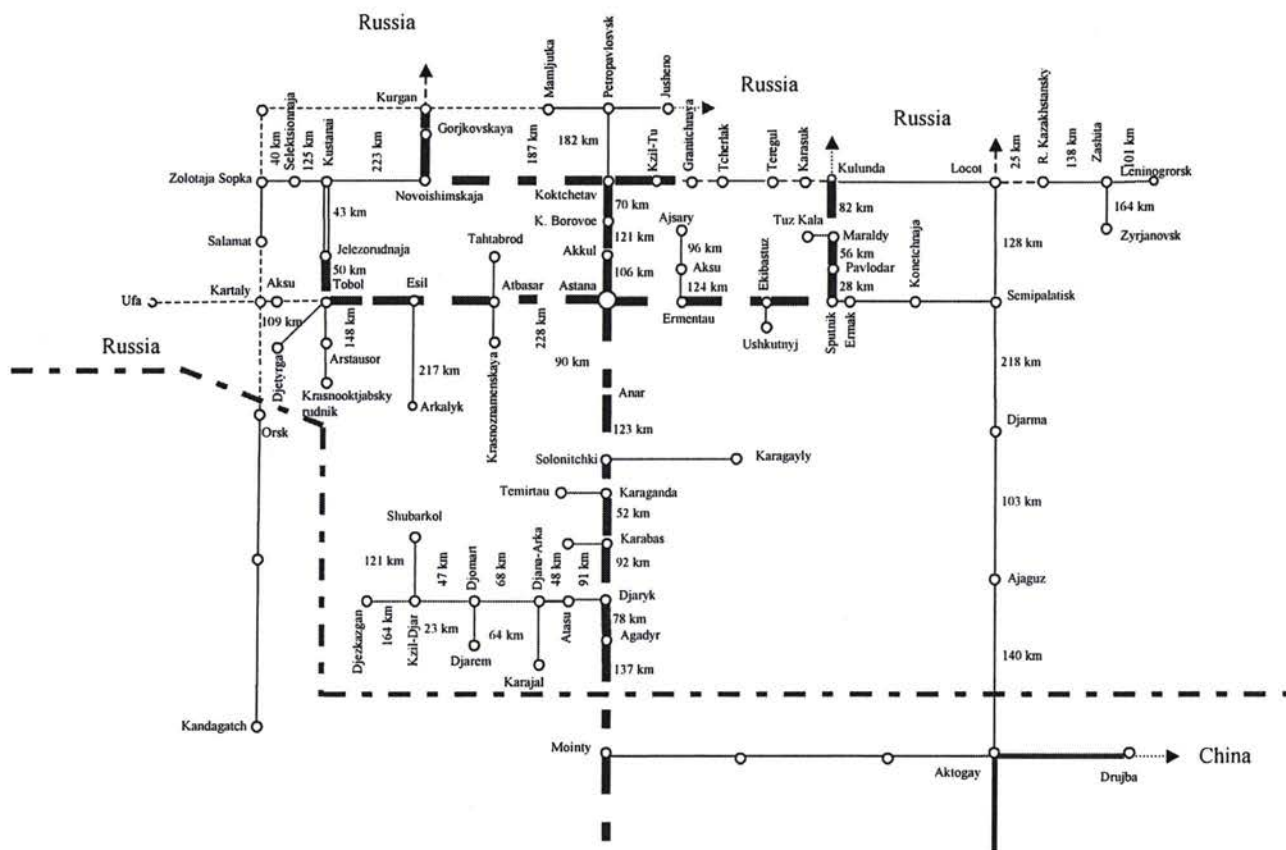
Fig. 9 Kazakhstan CTC northern lines



Legend:

	Traceca	Primary	Secondary	Other	New lines
Double track					
Single track					
CTC					
CTC central					
(1) - Double track in sections					

Fig. 10 Kazakhstan CTC southern lines

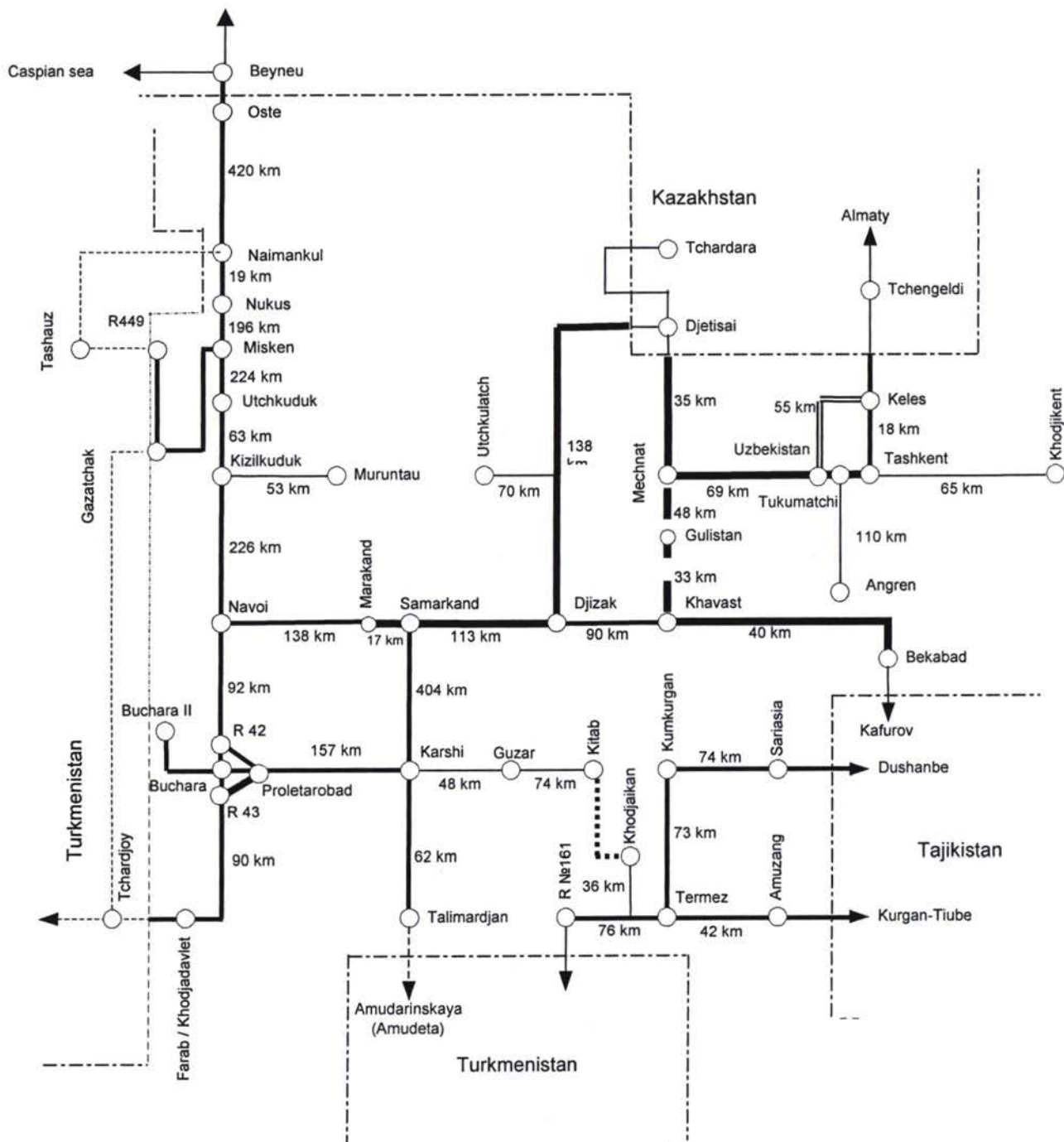


Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
Automatic block system					
Semi automatic block system					

Fig. 11 Kazakhstan block types northern lines



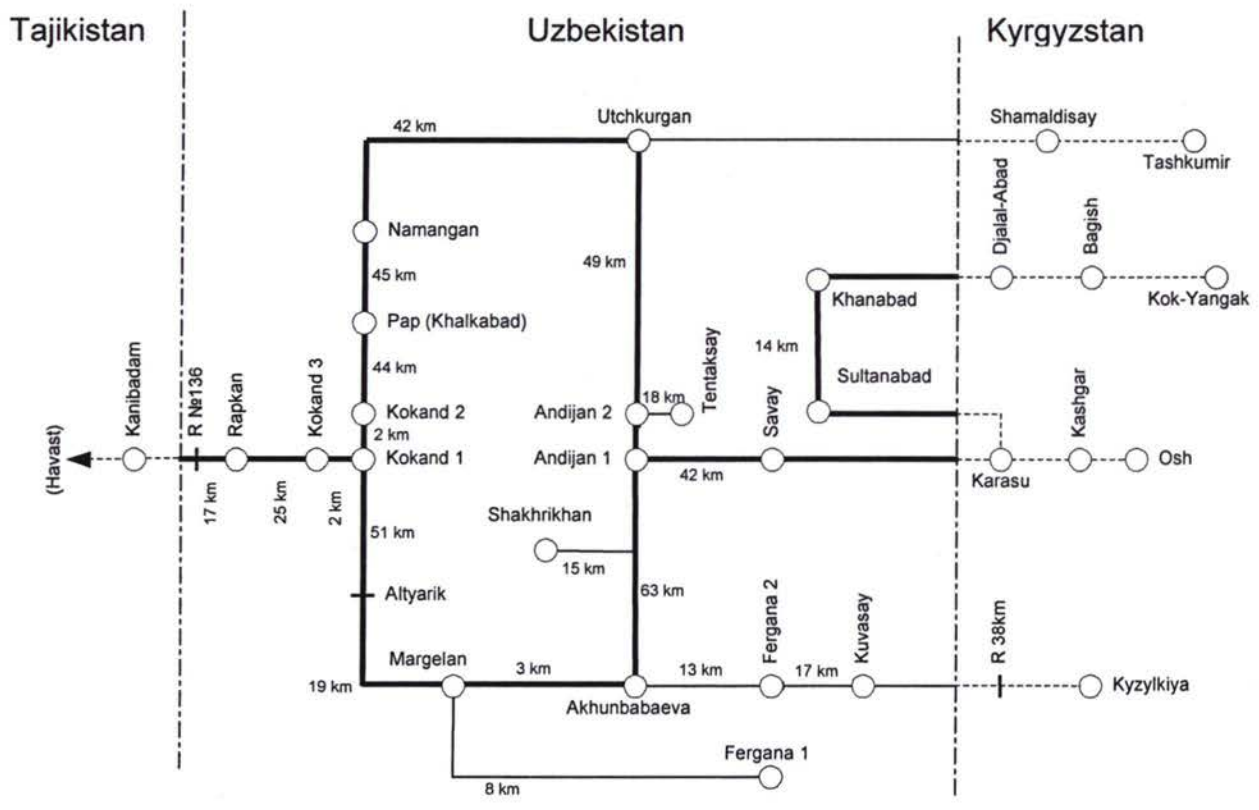


Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					

Fig. 13 Uzbekistan Railway Diagram 1.2

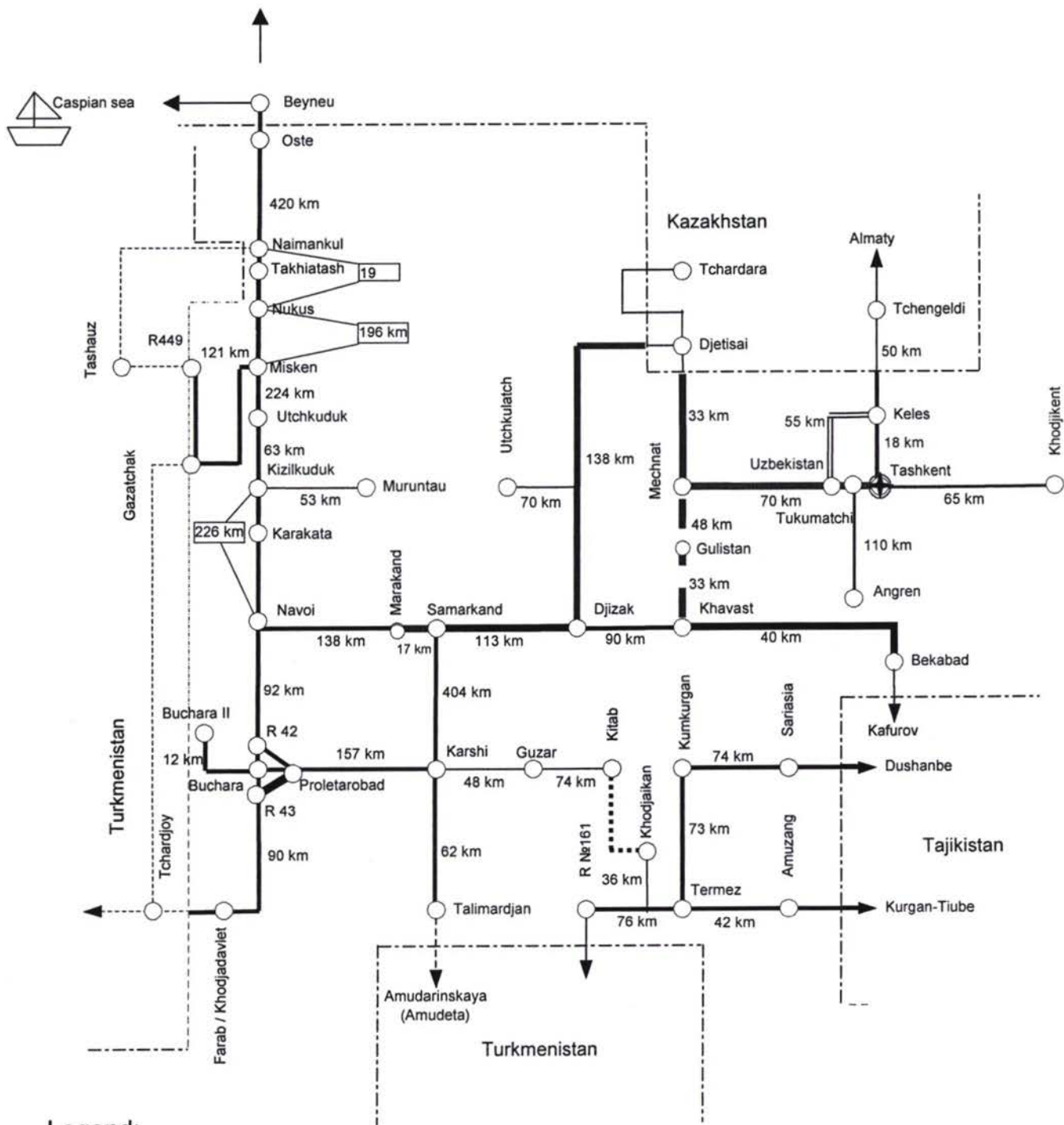




Legend:

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					

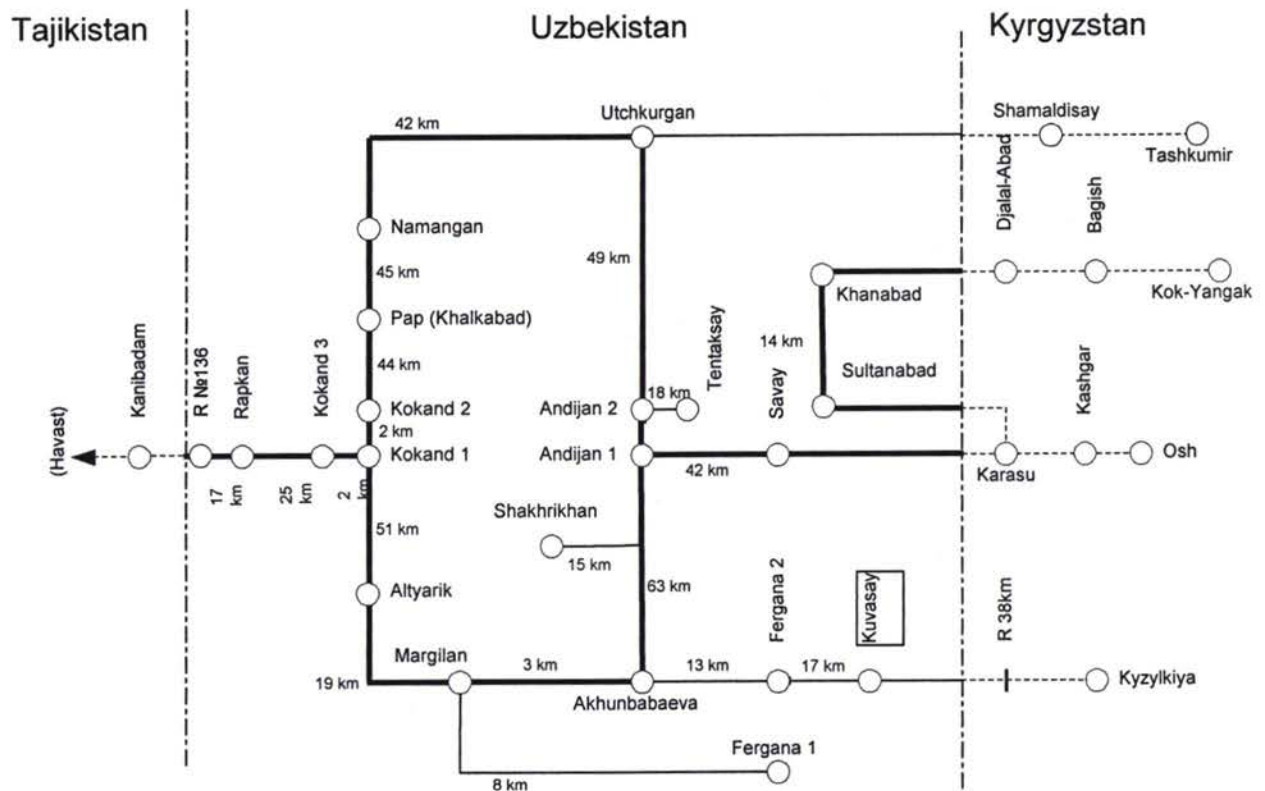
Fig. 14 Uzbekistan Railway Diagram 2.2



Legend:

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					
CTC lines					
CTC central place					

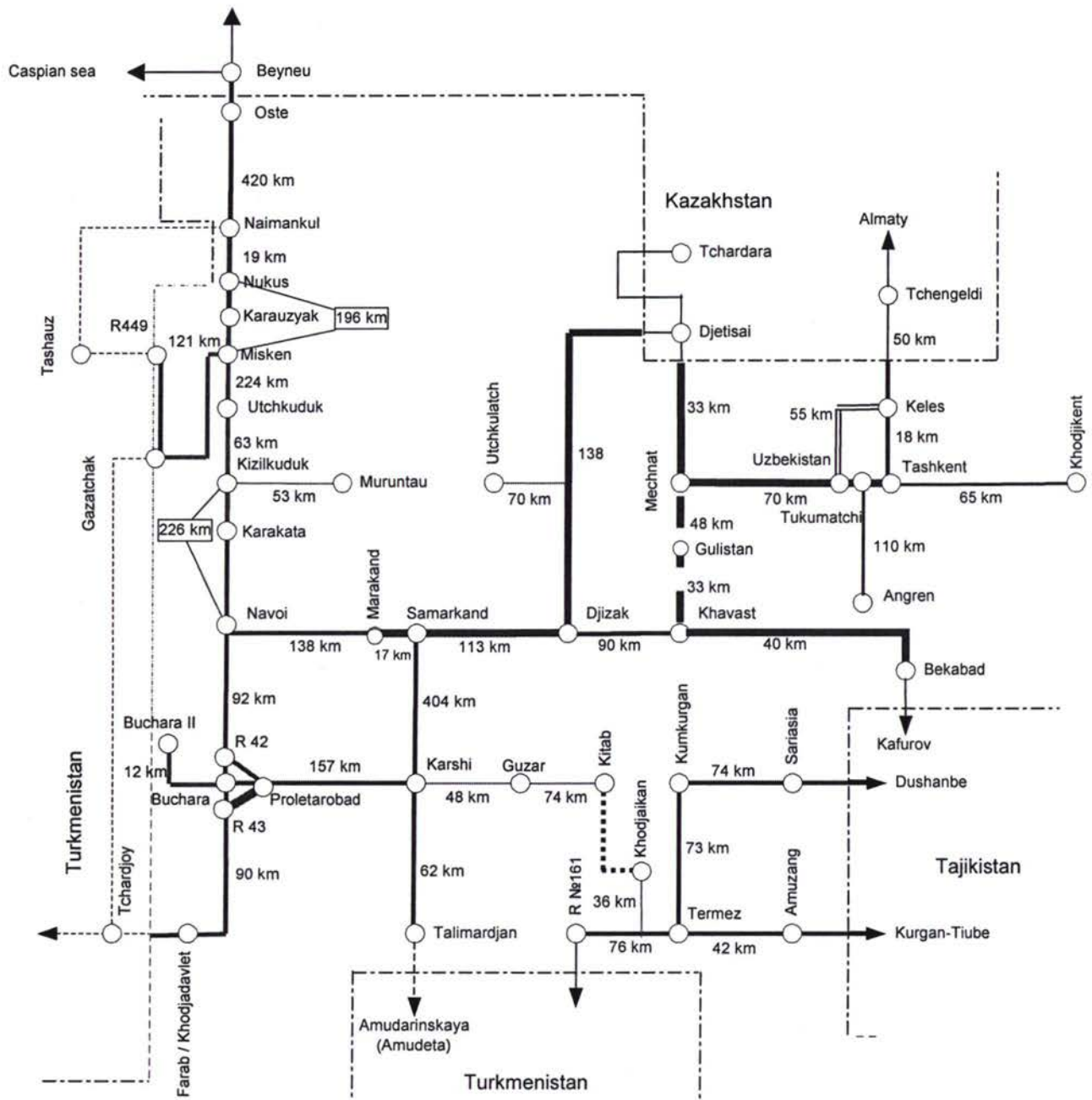
Fig. 15 Uzbekistan CTC lines 1



Legend:

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					
CTC lines					
CTC central place					

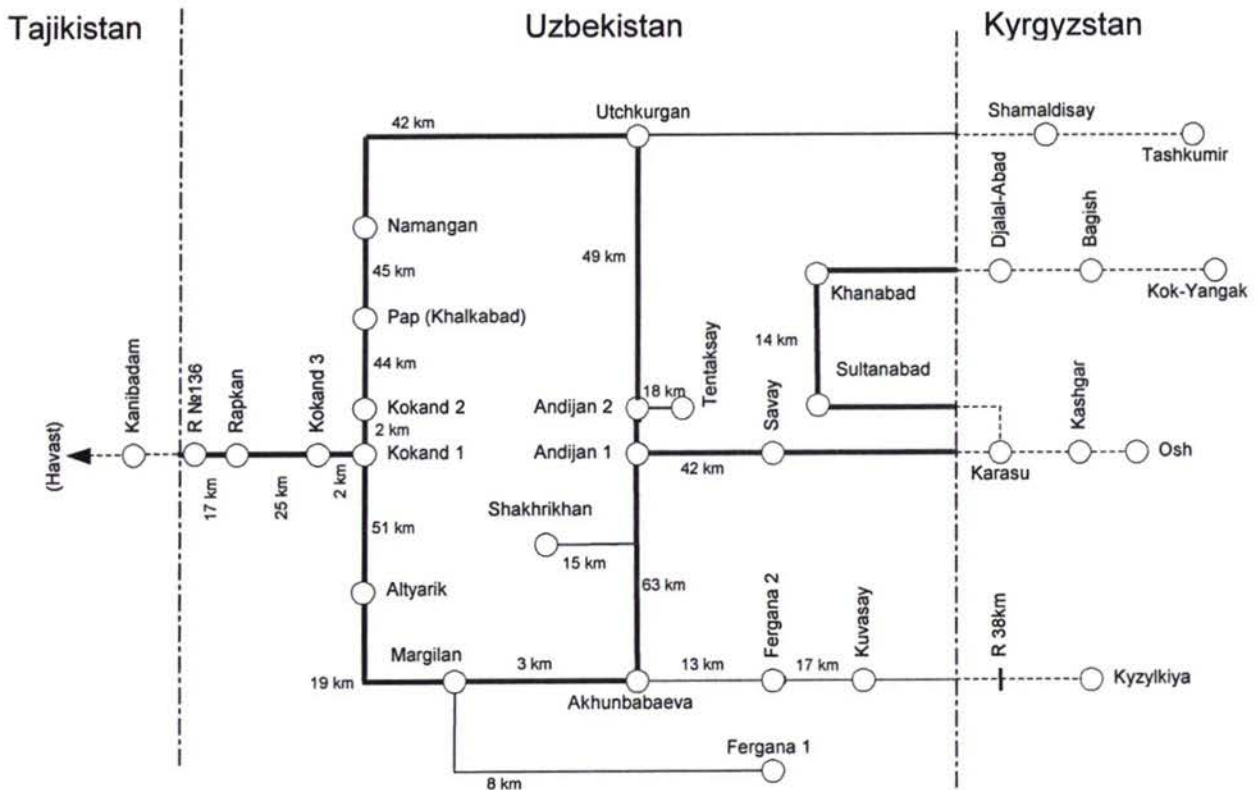
Fig. 16 Uzbekistan CTC lines 2



**Legend**

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					
Lines with automatic block system		Lines with semi-automatic block system		Lines with other block system	

**Fig. 17 Uzbekistan Block types 1**



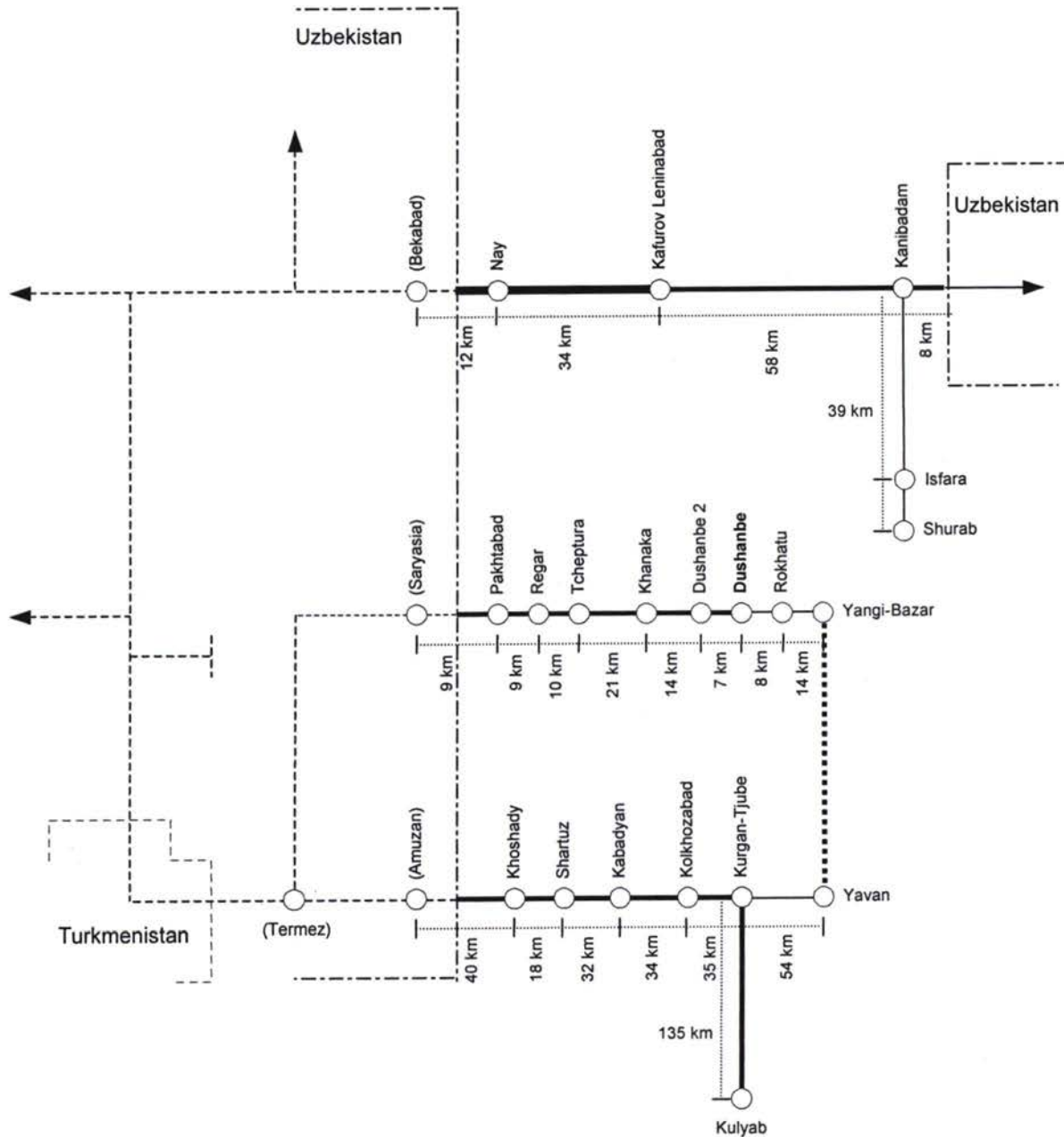
Legend:

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					
Lines with automatic block system		Lines with semi-automatic block system		Lines with other block system	

Fig. 18 Uzbekistan Block types 2

#	Line Section	With Automatic Block	With Semiautom. Block	Other type Block	Controlled by CTC	Without control	Lenth	No of Stations	Stations with Interlocking	Stations with MKD	Stations without Interlocking
1	Tashkent Junction	297,4	0	0	297,4	0	297,4	33	33	0	0
2	Tashkent - Khodjadavlet	689,7	0	42	149,7	582	731,7	66	64	0	2
3	Bukhara - Karshi	158,4	0	0	158,4	0	158,4	11	11	0	0
4	Marakand - Saryasia	467,5	121,7	35	62,6	561,6	624,2	37	36	0	1
5	Navoi - Nukus	0	444,3	332,2	0	776,5	776,5	30	13	12	5
6	Nukus - Beyneu	508,9	35,2	39,5	508,9	74,7	583,6	30	27	3	0
7	Misken - Shavat	129,8	0	23,6	129,8	23,6	153,4	10	10	0	0
8	Mekhnat - Djizak	122,1	0	70	122,1	70	192,1	8	7	0	1
9	Khavast - Andijan	154,4	165,9	28,2	0	348,5	348,5	31	22	7	2
10	Kokand - Andijan	0	185	27,5	0	212,5	212,5	15	10	3	2
	<b>TOTAL:</b>	<b>2.528,2</b>	<b>952,1</b>	<b>598,0</b>	<b>1.428,9</b>	<b>2.649,4</b>	<b>4.078,3</b>	<b>271</b>	<b>233</b>	<b>25</b>	<b>13</b>

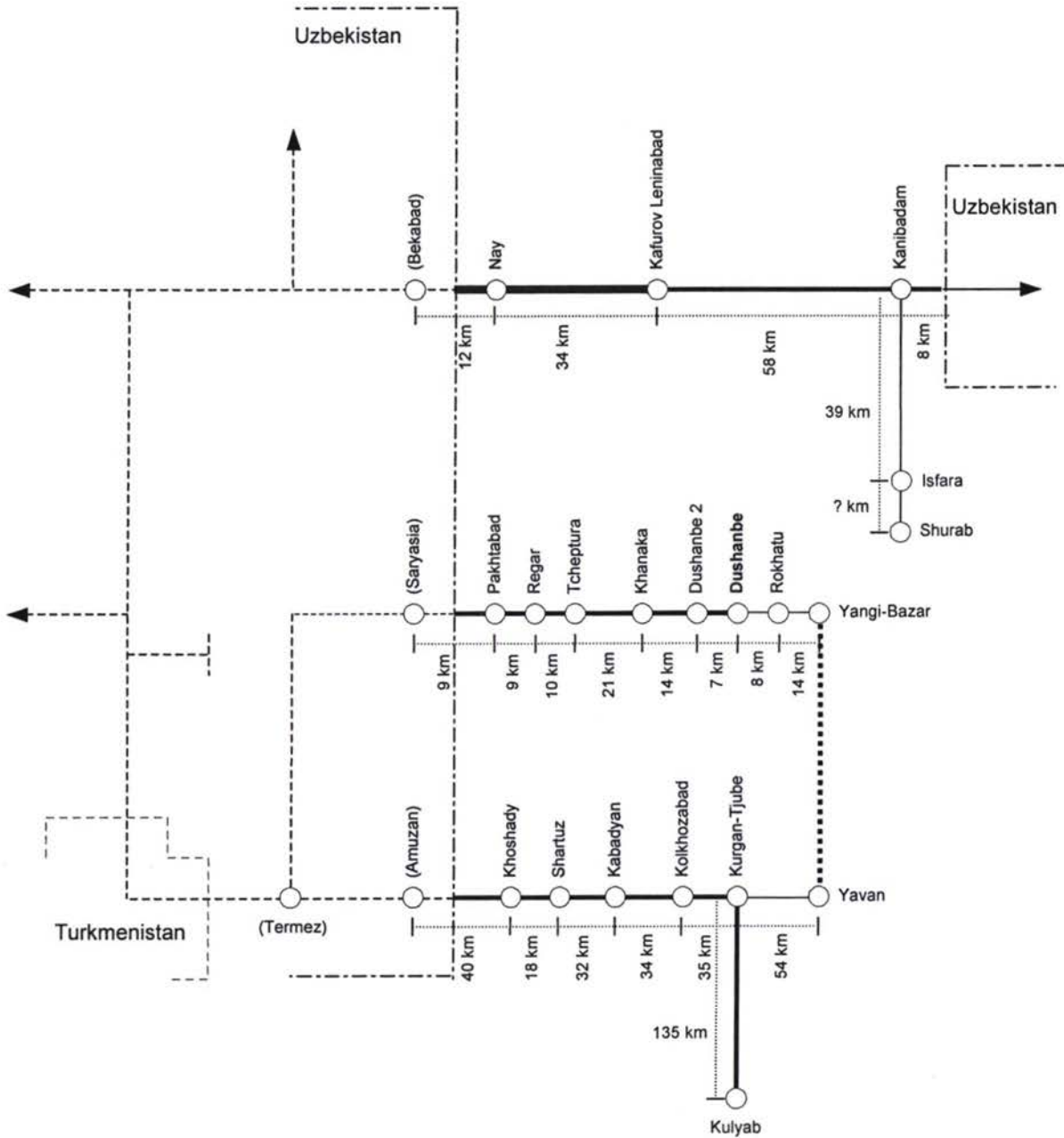
Fig. 19 Uzbekistan lines data



Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					

Fig. 20 Tajikistan Railway Diagram



Legend :

	Traceca	Primary	Secondary	Other countries	New lines
Double track					
Single track					
State border					
Automatic block					
Semi automatic block					
Another block system					

Fig. 21 Tajikistan Block Types



#	Line Section	With Automatic Block	With Semiautom. Block	Other type Block	Controlled by CTC	Without control	Lenth	No of Stations	Stations with Interlocking	Stations with MKD	Stations without Interlocking
1	Bekabad - Kanibadam	195,5	39	0	0	234,5	234,5	11	9	2	0
2	Saryasia - Yangi-Bazar	0	97	0	0	97	97	10	5	5	0
3	Amuzang - Javan - Kuljab	0	54,5	300,5	0	355	355	13	8	0	5
	<b>TOTAL:</b>	<b>195,5</b>	<b>190,5</b>	<b>300,5</b>	<b>0,0</b>	<b>686,5</b>	<b>686,5</b>	<b>34</b>	<b>22</b>	<b>7</b>	<b>5</b>

Fig. 22 Tajikistan line data

## **Annex 10.1.2    COMPUTER-BASED STATION INTERLOCKING SYSTEMS**

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## 0 ACRONYMS

ATP	Automatic Train Protection
CBIS	Computer-Based Interlocking System
CENELEC	European Committee for Electrotechnical Standardization (Comite Europeen De Normalisation Electrotechnique)
CTC	Centralized Traffic Control
E	Enable, remotely controlled station
E-MI	Part of the station is remotely controlled, part is locally managed by MI
EN	European Norm
ERTMS	European Railway Traffic Management System
FS	Italian State Railways (Ferrovie dello Stato)
IT	Intervention time
LC	Level Crossing
MI	Movement Inspector
MTBF	Mean Time Between Failures
OT	Operator Terminal
PC	Personal Computer
PCB	Printed Circuit Board
RAMS	Reliability, Availability, Maintainability, Safety
RAW	Route with Automatic Working
RT	Recovery Time
SE	Station of Entry
TD	Train Dispatcher
TDE	TD Exclusion
TLC	Telecommunications
TSE	Temporary Station of Entry
MD	Mimic Diagram
FK	Functional Keyboard
OT	Operator Terminal

## 1. INTRODUCTION

The scope of this Annex is to indicate the functionalities which must be guaranteed by the system adopted for the signaling and safety installations (interlocking devices) in the stations involved in the project.

## 2. GENERAL

The signaling must satisfy the following basic requirements regarding the station equipment:

- remotely controllable from a distant operating center
- easily modifiable in case of subsequent changes to the track plan or the doubling of the line
- easily interfaceable to the existing train protection systems based on track circuit automatic block and to the possible future Level 1 or 2 ERTMS systems
- easily maintainable due to the high level of diagnostics intrinsic to the equipment and to the component and part modularity
- Interfaceable with the wayside equipment currently use by the state Railway.

Concerning the train protection wayside equipment, the automatic block system will be kept and expanded along the entire line.

The possible introduction of a system complying with ERTMS requirements may become desirable in the future. The ease of interfacing with the ERTMS systems should therefore be kept present while defining the station equipment.

Considering the above requirements, it is advisable to use the electronic equipment which is based on computer-supported safety architecture and containing both digital and analogue electronic interfaces to the controlled signaling devices.

## 3. EQUIPMENT CHARACTERISTICS

The electronic equipment shall consist of the following subsystems:

- Centralized command/control program operating through the safety architecture with a redundant computer (2 out of 2 or 2 out of 3)
- Operator interface including: high-performance video screen, functional keyboard for the safety commands, personal computer or workstation with a monitor, keyboard and mouse
- Supporting functions which activate the data acquisition related to the system and equipment for both diagnostic and statistical and fiscal purposes, linking to the remote control system, other possible services an supervision functions for the traffic management support
- Power supply, control and diagnostics of the wayside devices and of cables through the modular digital and/or analogue interfaces capable of data interchange with the centralized program by means of the concentrators based on computer safety architectures.

### 3.1 RAM standards and requirements

The described equipment must comply with the applicable CENELEC standards:

- EN 50121 Railway applications. Electromagnetic compatibility
- EN 50124 Co-ordination of Insulation
- EN 50125 Railway applications. Environmental conditions for equipment. Equipment on board rolling stock.
- EN 50126 Railway applications. The specification and demonstration of reliability, availability, maintainability an safety (RAMS)
- EN 50128 Procedures and requirements for the development of railways safety software

- EN 50129 railway application. Safety related electronic systems for signaling
- Due to the importance of the reliability, availability and maintainability (RAM) related performance, we are giving the guidelines to be used as a base in contract specification. The indices declared by the manufacturer must equal or exceed those required for the three characteristics of reliability, maintainability and availability during the entire lifetime of the equipment, provided that system is maintained as scheduled. The values to be guaranteed are referred to:
- The entire equipment
  - Its main subassemblies.

### 3.1.1 Reliability requirements for the main equipment

Beside the overall system reliability, the supplier must declare and guarantee the reliability (MTBF) of the single pieces of equipment within the supply. The main functional and physical subassemblies under review and their respective minimum MTBF values required by the most European railways are listed in the table below for reference purposes:

**Table 3.1.1: Reliability standards**

Subsystem	MTBF (hours)
Movement logic	100.000
Device controller	300.000
Operator terminal	70.000

### 3.1.2 Maintainability requirements

The aspect of the project related to the ease of inspectability and maintainability of systems must be well studied, taking into account the configuration, location and characteristics of the components and subsystems.

The values shown in the Table 3.1.2 will be assumed in the computation of the system maintainability index, where:

IT: Intervention Time, i.e. the time elapsed between the signaling of failure and the arrival of the maintenance team on site

RT: recovery time, i.e. the time required for the decisive intervention against the malfunction, including the times required to:

- Diagnose the failure
- Isolate the failure
- Replace/repair the failed component
- Functional test of the replace/ repaired component to establish the operating state.

**Table 3.1.2: Standards of maintainability**

Subsystem	IT (minutes)	RT (minutes)
Central equipment	Variable	30
Area Manager	Variable	30
Wayside equipment	Variable	30

### 3.1.3 Availability requirements

Beside the availability of the entire system, the supplier must also declare and guarantee the availability of the single main pieces of equipment listed below.

The equipment under examination and the proposed minimum availability values required by most European railways are as follows:

Subsystem	Availability	Unavailability (minutes/year)
Movement logic	0.999990	5
Area Manager	0.999990	5
Device controller	0.999990	5
Operator interface	0.999960	21
Auxiliary functions	0.999950	26

## 4. DIAGNOSTICS

### 4.1 Diagnostics of the computer-based system

The main function of the diagnostics is to control the functional state of various subsystems or nodes of the computer-based system and to automatically disconnect and unavailable node or reconnect to the network a node which was recovered into normal operation.

The diagnostics at the stem level must:

- Periodically execute diagnostic programs on-line which target single system elements and recover them as needed
- Inform the operator on the results of the diagnostics run at various levels.

Beside the diagnostic messages being made available, there must be detailed alarms related to the single node or its modules.

These alarms must be easily retrievable and interpretable by the maintenance operator.

### 4.2 Yard device diagnostics

The analogue values shall be acquired with a frequency exceeding the greatest possible frequency of the variation of the value examined.

The values acquired and elaborated by the system must be retrievable using simple procedures and a portable terminal. The latter will be capable of displaying the date in both graph and table forms. The terminal will also be capable of storing procedures for on-line configuration of diagnostic parameters (alarm levels, sampling frequencies, graph types, etc). The alarms detected by the diagnostic systems shall be communicated to the operator (peripheral or central) in charge of the maintenance.

The acquired and elaborated values pertaining to the diagnostics and all controls shall be made available to the external systems through a serial communication line.

## 5. TYPES OF EQUIPMENT

The functional block diagram related to the various application types of our project are described in the following text.

### 5.1 Remotely controlled station, normally unattended

The electronic equipment controls the functions of the station devices and movement management in full safety.

The supervision, diagnostics, maintenance and support function are taken care of the central line Control System. All the diagnostics and event recording information is relayed to the Center by the equipment for further processing.

No operator terminal is foreseen. Local management of traffic in case of disconnection from the Central Pace will be ensured by the interface operator (functional keyboard and mimic diagram).

Fig 5.1 shows the functional block diagram adopted

### 5.2 Remotely controlled station, normally attended

This case is referred to the stations remotely controlled by a centralized control in which the presence of the Movement Inspector is required by the service needs.

The operator interface in this case is complete. It includes the Operator terminal, Functional Keyboard and Mimic Diagram.

The scope of the Operator Terminal (OT) that includes video and mouse is to make the operator access the system functions more easily and directly.

The typical movement functions such as route definition, single device controls: points, signals, LCs, abnormal situation and alarm management functions, as well as the form and messaging functions can be activated from the OT.

Fig. 5.2 shows the functional block diagram of the CBSIS system for the reviewed type.

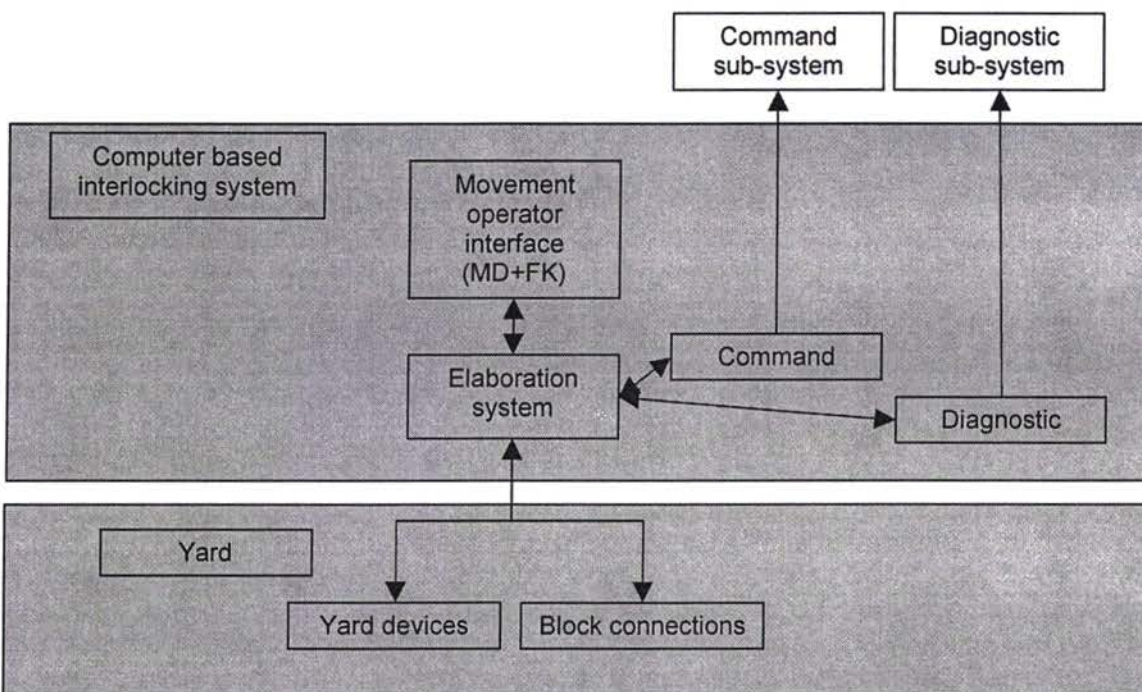


Figure 5.1



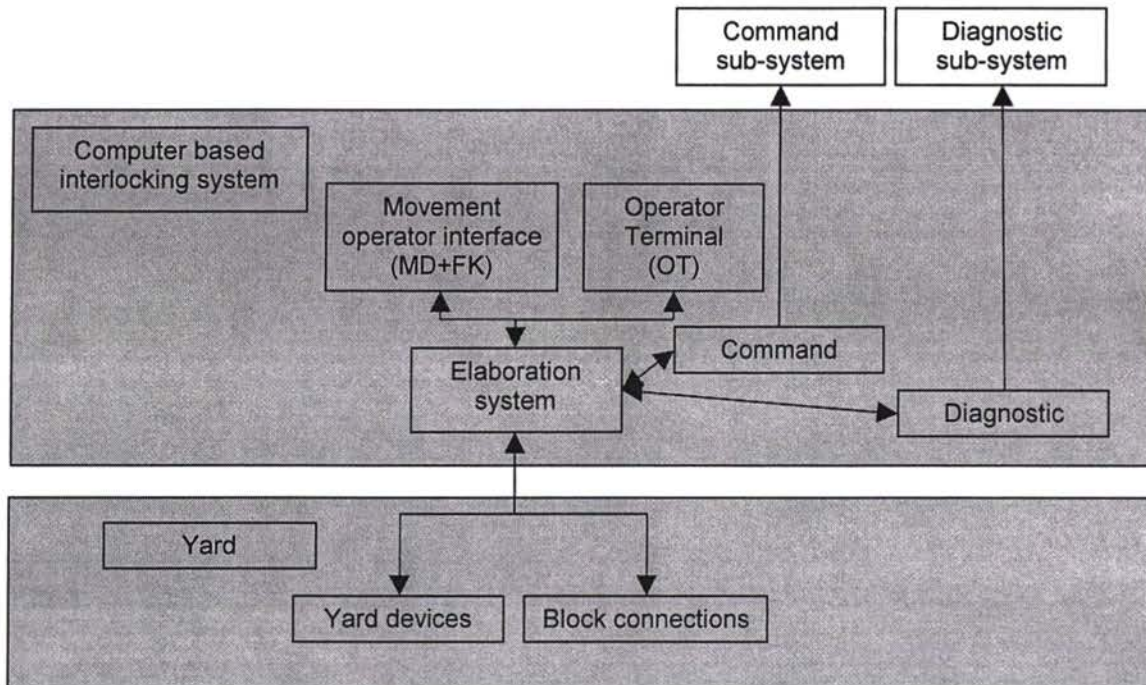


Figure 5.2

## 6. OPERATING MODES

The station Equipment may operate under the operating modes listed and summarized below;

- ❖ E (enabled and remotely controlled): in this mode the equipment receives the instruction from a central remote control location
- ❖ E-MI (management is distributed between the local Movement inspector, MI, and the Train Dispatcher, TD): in this mode the wayside is divided into two sections:
  - the remotely controlled section
  - the section managed by the MI.

The remotely controlled area normally includes the route tracks to which one or two priority tracks are added.

The TD can remotely control only the routes within his jurisdiction; he cannot control the single devices nor dispatch trains with closed signals.

The routes involving both areas are controlled jointly between the TD and MI.

- ❖ SE (Station of Entry): In this mode the equipment is controlled locally, but the departing routes require the TD confirmation to the departing train jurisdiction. In the case of the equipment which is not remotely controlled, located at an extremity of a remotely controlled line, the mode becomes SE.
- ❖ If the equipment is remotely controlled, the mode becomes TSE (Temporary Station of Entry).
- ❖ TDE (TD Exclusion): On this mode the instructions and confirmations originating in the remote control system are excluded.
- ❖ TDE (TD Exclusion): IN this mode the instructions and confirmations originating in the remote control system are excluded.
- ❖ RAW (Route with Automatic Working): in this mode the switches along route tracks and those which make the route tracks independent from the remaining tracks, are blocked to make the station and extension of the line. The rout instructions are activated directly by the train.

The operation mode proposed for the stations normally unattended is E/TDE/RAW.

The operation modes proposed for the stations of normally unattended with modest volume of traffic managed and at the beginning of the remotely controlled sections are E/SE/TDE/RAW.

## 7. SYSTEM UPGRADEABILITY REQUIREMENTS

The equipment will have to comply with some design, construction and functional requirements in order to achieve high flexibility of the system and to be able to modify it easily after it has been put into service. It must be possible to build a station system (equipment + yard) in a step-by-step manner, to reduce to the minimum the impact to the service and the organization of the station.

The supplier of the equipment described here must therefore have and make available to the Beneficiaries adequate computer tools for the design and testing of both hardware and application software for the system. The instruments shall have been validated and approved by a European railway institution or certified by a recognized certifying body. Factory testing or the modified system must be made possible by means of a "mirror" system equipped with the simulators for programs and distant locations for the commercial and control of the wayside entries. The equipment shall allow the station configuration to be changed:

ON LINE, with an interruption of the service for approximately 30 min, required for the modification of program or of yard equipment which do not call for the variation of tracks and devices.

ON LINE, with a service interruption of up to an hour, required for every type of modification implemented and tested in factory.

The modified version must be capable of being installed and activated only for the time required by the field testing.

The current version of the system must be reactivable after each test of the modified version, until the final activation of the latter. The field testing will be limited to the off-line testing of the power supplies and of the correct connections with the new devices, and to a functional system test. They will be conceived to be carried out, as far as possible, during inactivity of the entire system or of the components under testing.

## 8. MAINTENANCE

It will be possible to transfer all diagnostic data collected by the computerized system to a dedicated diagnostics and maintenance system, giving the maintenance manager a computer-aided failure and maintenance management.

The subsystem shall have an interface for the maintenance technician who will access the information related to the state of the system or of single elements and the information related to the maintenance of the devices, system components and subsystems at regular intervals.

The interface will also be used by the maintenance manager to exchange confirmation and modules with the person in charge of movement.

The subsystem shall elaborate the data acquired from on-line measurements and those related to the single system components stored in the general files of the maintenance subsystem.

The diagnostics and maintenance system shall make available its data to the area maintenance center through a serial data communication.

The diagnostics and maintenance system shall:

- ❖ Determine the current state of the system (system equipment, telecommunication equipment, peripheral installations and infrastructure, etc);
- ❖ Support the research technician in failure locating and repair;
- ❖ Support planning management and the carrying out of the maintenance activities;
- ❖ Elaborate failure statistics related to its consistence and jurisdiction;

- ❖ Manage the system “configuration”;
- ❖ The subsystem functions may fit into two major groups:
  - Diagnostics and Maintenance of installations;
  - Diagnostics and Maintenance of the system.

The Diagnostics and Maintenance of installation include all automatic or operator activities carried out through the subsystem instruments and involving all equipment, devices, auxiliary system, etc of a station, generally known as installations or infrastructure.

The Diagnostics and Maintenance of the CBIS system refers to the equipment and software installed in it and the connection network. The subsystem will be capable of exchanging data with external systems in order to either receive diagnostic/ maintenance information useful in CBIS –related activities or to make available diagnostic or maintenance information from its files.

## **8.1 Diagnostics and maintenance of installations**

### **8.1.1 Goals**

The Installation Diagnostics shall monitor the state of:

- signaling installations
- TLC equipment and network
- auxiliary Technological installation.

There are two main subsystem goals:

- provide suitable instruments for the activation of maintenance work and for the operation support during an intervention, with a special consideration to the implications of such activities for the traffic;
- make available in real time the information on the state of installations and infrastructure to the external system which now manage maintenance at the NETWORK level.

Achieving the first goal will allow the preparation of the information base needed to achieve the second one, since the information pertaining to both aspects is generally the same, even if subsequent processing and the related instruments may serve different purposes.

### **8.1.2 Support to the maintenance activities**

The support to the maintenance personnel will be provided by:

- the diagnostic function of fault finding, including an efficient management of fault location and indication of malfunction. All anomalies originated by failures shall be detected and indicated on a timely basis to the operator involved;
- graphic and/or alphanumeric display of scheduled maintenance of devices, unavailability of installations, of predictive fault evaluations, etc;
- operator guidance for the replacement and recovery of failed components using procedure guiding and the possibility to access the technical documentation of all the equipment in the system;
- auxiliary maintenance management functions (statistics, forms, records, etc).

### **8.1.3 On-line diagnostics**

These functions shall detect faults and malfunctions on the monitored systems by performing specific tests on the state signaling (controls and messages) coming from remote locations.

These tests may also involve single components which will be reflected both on the database structure, acquired on corresponding levels, and on the messaging and type of display managed from the workplaces.

Any reference parameters for the sensing of faults and anomalies (thresholds, tolerance limits, etc) typical of the monitored installations shall be determined by the manufacturer).

#### **8.1.4 Predictive diagnostics**

Predictive type of processing will be possible for certain installations, i.e. starting from the current conditions and using specific parameters and models of the installation or equipment, useful indications will be obtainable in order to prevent wear-induced or other failures.

The acquired or processed data shall be used to:

- Signal current or predicated failures and anomalies,
- Show in the real time the operating conditions of the installations,
- Build records to be used in future processing, either on or off-line, for instance in support of maintenance management procedures, to achieve the on-condition maintenance.

#### **8.1.5 Alarm management**

When a malfunction occurs, the subsystem shall generate alarms and start recording procedures related to the situation (alarm recognition, communication, etc).

Alarms shall be displayed in different colors, with or without blinking, depending on the presumed gravity of the failure, possible interference with the regular service, being "recognized" or "not recognized" by the operator.

### **8.2 Supporting instruments**

The instruments for the support to the repair activities integrated in the subsystem will be the following:

- On-line operator guidance;
- Use of the technical documentation;
- Remote diagnostics and remote maintenance.

These instruments shall be accessible from any involved location equipped with the adequate peripherals.

#### **8.2.1 On-line guidance**

Once the anomaly has been signaled, the system shall supply the operator with all available information using guided procedures, in order to pinpoint the failed component or section of installation by examination of various schematic diagrams in increase detail down to the single PCB.

After the failed component had been found and replaced during maintenance, the system shall check the recovery of the functions and continue with its full operation.

The operational instructions will have to be configured and displayed automatically by the system when some diagnostic events occur.

#### **8.2.2 Consulting the technical documentation**

The manufacturer shall store the technical documentation (diagrams, drawings, specifications, manuals, etc) in memory using suitable formats, so that the diagnostics and maintenance operator can read them on video displays after starting the appropriate procedure.

### 8.3 Preventive maintenance

The management of the maintenance shall be activated by the procedures made available by the Beneficiaries and not included in the CBIS supply. The procedures shall interface with the Maintenance and Diagnostics subsystem. The interfacing shall be used for:

- System data communication
- Access to the system-resident functions
- Planning of the Diagnostics and Maintenance subsystem through the terminal.

Beside the procedures defined by the programmed maintenance of devices and devices, the planning and maintenance functions shall use the measurement of the characteristic values for each device. The measured values shall be related to the calibration values in order to indicate deviations from the tolerances.

Preventive maintenance shall use an electronic file containing the history records of the supervised device and parts of the system.

The history records shall be subdivided into:

- Static data consisting of the electrical calibration values for each device (operating voltage, current draw, operation time, shunting value, etc) and those from the list of planned maintenance and their frequency, grouped in tables;
- Dynamic data referred to the operating values for each device (hours of operation/ON hours, number of operation/ switching ON, etc) and the data related to the maintenance operations (dates of intervention, etc).

The preventive maintenance deadlines shall derive from the subsystem by correlating static and dynamic data.

### 8.4 Costs assessment

In order to settle the cost of the computer-based station interlocking systems we used following criteria.

We estimated investment values by average and current market prices of material and labour which are especially referred to EU prices being about innovative electronic equipment.

In order to arrive to the basic price of a CBSIS we valued that processing which, regardless of plant sizes, are, in any case, presents and somehow proportional to the number of the controlled devices.

These valuations has been referred to two size plants. Both are referred to a station of a single track line equipped by automatic block and with a level crossing located in line.

The first size is relevant to a interlocking which manages 3 tracks, the second to a interlocking which manages 5 tracks

Once settled basic price we added the costs due to each really installed device

Subtotals are refreshed by the percentage of prices up-dating (presently 20%).

Finally we take into account that the market prices could change in the range showed in the table.

<b>BASIC COSTS (€)</b>	<b>SIZE 1</b>	<b>SIZE 2</b>
BASIC PRICE	232.240	335.697
CONTROLLERS PRICES	178.177	209.165
SUB TOTAL	410.417	544.862
PRICES UPDATING 20%	82.083	108.372
<b>ESTIMATED TOTAL</b>	<b>493.000</b>	<b>653.234</b>
TOTAL VARIATION RANGE	+/- 20%	+/-20%

To the totals must be added wayside devices costs only in the case of new outdoor equipments.

Of course to the estimated total, if necessary, must be added power supply and remote control equipment costs.

Such possible costs are the same of those of traditional all relay interlockings plants.

## **Annex 10.1.3 EUROPEAN BLOCK AND ATP SYSTEMS**

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## SYNTHESIS OF FUNCTIONALITY OF BLOCK AND ATP SYSTEMS UTILISED ON EUROPEAN NETWORKS

### 1) ASFA (Spain)

ASFA is an ATP (Automatic Train Protection) system and of cab signalling installed on many RENFE lines (gauge 1676 mm), on FEVE lines (metric gauge) and on the new NAFA line (European gauge).

Asfa works on all the lines considered for interoperability.

The ground-board link is based on resonant circuits magnetically coupled able to transmit nine different data.

A ground resonant circuit is tuned on a frequency which represents signal meaning.

As far as safety is concerned the system is not "fail-safe" but safe enough to develop suitable supervision of the driver showing him signalling conditions, and compelling him to note possible restrictive signals.

Main characteristics

- 9 frequencies - Range: from 55 kHz to 115 kHz
- on board 3 different types of trains can be selected
- Supervision:
  - Recognition of restrictive signal by the driver in 3 seconds.
  - Continuous supervision of the speed (160 km/h or 180 km/h) after going past restrictive signal.
  - Speed control (60 km/h, 50 km/h or 35 km/h on the basis of train type) after going past a transponder located 300 m past the signal.
  - route of the train in the case of closed signal .
  - Line speed.
- Reaction:
  - Emergency brake is set on in the event that any supervision is evaded
  - Emergency brake can be set off when train is stationary

### 2) ATB (Nederland)

ATB exist in 2 base versions: ATB first generation e ATB new generation.

**Description of ATB first generation:**

The system is made up of coded track circuits and of an on board equipment informatic (ACEC) or of a conventional electronics (GRS).

Data transmission between coded tracks circuits and on board equipment has carried out through inductive coupled aeriels located over the rails.

Main characteristics

- Data transmission to trains:
  - Carrier frequency :75 Hz
  - Speed codes :AM modulated
  - Speed codes :(40,60,80,130,140) km/h
  - 1 way out code
- Any train characteristic on board (Speed code detected on run)
- On driver display:
  - Speed corresponding to the speed code.
  - Acoustic signal in the event of code changed
  - Sound of a bell in the case system needs brakes
- Supervision:
  - Speed (continuous)

- Reaction:
  - Emergency brake is activated in the event of over speed and in the event that the driver does not intervene after a warning acoustic signal

#### **Description of ATB New Generation:**

The system is made up of transponder (balise) along the tracks and of an on board equipment. Besides an "infill" function based on a cables loop is available

The data transmission is between the activated balise and the on board aerial.

The system feels direction, the balises are assembled nearly in the middle of rails.

The on board ATBNG equipments are fully interoperables with ground ATB equipments of first generation.

#### **Main characteristics**

- Data transmission to trains:
  - 100 kHz +/- 10 kHz (FSK)
  - 25 kbit/sec
  - 119 bit utilised for each telegram
- Train characteristic put in by the driver
  - Train length
  - Train maximum speed
  - Train brake characteristics
- On driver display:
  - Maximum line speed
  - Speed set out
  - Prescribed distance
  - Braking curve
- Supervision:
  - Line speed
  - Speed restrictions
  - Stops
  - Dynamic braking curve
- Reaction:
  - Optical warning
  - Acoustic warning
  - The emergency brake is activated in the event of the elusion of any traffic supervision and in the event that the driver does not intervene after a warning acoustic signal

### **3) BACC (Italy)**

The Codified Currents Automatic Block (BACC) is installed over all the lines where the admitted speed is over 200 km/h in FS network and on others lines which are the greatest part of those considered to carry out interoperability.

The system is made up of codified track circuits that work at 2 carrier frequency in order to manage two class of train. On board equipments are informatics.

Data transmission between coded tracks circuits and on board equipment has carried out through inductive coupled aerials located over the rails.

#### **Main characteristics**

##### **Data transmission to trains:**

- Carrier frequency 50 Hz
  - Speed codes AM modulated
  - 5 Speed codes AM modulated

- Carrier frequency 178 Hz
  - Speed codes AM modulated
  - 4 speed adjoined codes
- On board 2 different types of trains can be selected (Speed code detected on run)
- On driver display :
  - Speed corresponding to the speed code
  - Meaning of the signal
- Supervision:
  - Speed(continuous)
  - Stops
- Reaction:
  - Emergency brake in the event of over speed

#### **4) Crocodile (Belgium, France, Luxemburg)**

It is installed on the main lines of RFF, SNCB e CFL.

Crocodile works on all lines taken into consideration in order to interoperability.

The system is based on an iron bar placed in the middle of the rails put in physical contact with a brush on board of the train. The bar carries a voltage of +/- 20V dc on the base of signal meaning.

There is a warning and the driver must recognize it. If he does not that an automatic braking starts.

Crocodile does not control speed or distance: It takes only a supervision action

The on board and ground unities are of conventional type

Main features

- Bar fed at +/- 20V dc
- Any train characteristic on board
- Supervision:
  - recognition by the driver
- Reaction:
  - the emergency brake is activated in the event that the driver does not recognise after a warning acoustic signal

#### **5) Ebicab (Sweden, Norway, Portugal, Bulgaria)**

There are two versions of Ebicab: Ebicab 700 ed Ebicab 900.

**Description of Ebicab 700:**

ATP "fail-safe" standard system in Sweden, Norway, Portugal, Bulgaria.

Same software in Sweden and Norway that allows trains running across the two State to cross the borders without drivers and locomotives change in spite of the difference of signalling and regulations.

Different software is used in Portugal and Bulgaria.

The system is made of ground equipments, transponders and signal codifiers with electronic apparatus and computer equipments on board.

The data transmission is between passive (not fed) balises located on the tracks (2-5 for each signal) and one aerial on board located under the vehicle which feeds also the balise on its transit.

The balise and the on board aerial are inductive coupled.

Main features

- Balises:

- 27.115 MHz
- AM(synchronisation impulses)
- Impulses frequency: 50 kHz
- Data transmission to trains:
  - 4.5 MHz
  - 50 kb/s
  - 12 bit available on 32 total2
- Link
  - Signals are connected
  - Panels connection is not necessary (for instance warning and speed panels are not connected)
  - 50% of not connected balises is acceptable in order safety conditions
- Train characteristics as follow can be set by the driver :
  - Maximum train speed
  - Train length
  - Train braking features
  - Special train characteristics to allow either over speed or speed restriction on some sections
- On driver display:
  - Maximum line speed
  - Set out speed
  - Information in order to signal distance to cover and speed to respect: 5 block sections can be supervised
  - Speed restriction besides first signal.
  - Service braking time : three warnings
  - Failures of track and on board equipments
  - Value of last late
  - Pressure inside brake tube
  - Information about last overcome balise
  - Auxiliary information
- Supervision:
  - Line speed on the base of track and train characteristics
  - Putting into effect speed restrictions for special trains
  - Multiples aims
  - Permanent, temporary or emergence speed restrictions can be activated with disconnected balises
  - Stops
  - Dynamic braking curve
  - Condition of control equipment of level crossing and landslide
  - Signal to stop, 40 km/h is supervised as far as the main successive signal
- Reaction:
  - Acoustic warning signal when train overcome of 5 km/h maximum speed, service brake when train overcome of 10 km/h maximum speed.
  - Service brake can be released by the driver when the speed comes back in set limits.
  - Emergency brake is utilised only in the event of real emergency for instance when service braking is not enough.
  - Service brake can be released only when train has stopped.
  - Ebicab brake in a way independent enough from driver intervention

- Options put into effect:
  - Block radio system “ ETCS level 3 type ”
  - Ground- train communication

#### **Description of Ebicab 900:**

The system is made of ground equipments, transponders and signal codifiers with electronic apparatus and computer equipments on board.

The data transmission is between passive (not fed) balises located on the tracks (2-4 for each signal) and one aerial on board located under the vehicle which feeds also the balise on its transit.

The balise and the on board aerial are inductive coupled.

Main features

- Balises:
  - 27 MHz
  - AM(synchronisation impulses)
  - Impulses frequency: 50 kHz
- Data transmission to trains:
  - 4.5 MHz
  - 50 kb/s
  - 255bit
- Link
  - Signals are connected
  - Panels connection is not necessary (for instance warning and speed panels are not connected)
  - 50% of not connected balises is acceptable in order safety conditions
- Train characteristics as follow can be set by the driver :
  - Train identification
  - Maximum train speed
  - Train length
  - Train braking features
  - Train speed type (only if speed is from 140 and 300 km/h)
- On driver display:
  - Maximum line speed
  - Set out speed
  - Over speed
  - Efficiency
  - ASFA warning
  - Brake realize
  - Circulation beside allowed limit
  - End
  - Warning acoustic signal
  - Brake notice
  - Red pilot light
  - Alphanumeric Monitor
- Supervision:
  - Line speed on the base of track and train characteristics
  - Putting into effect speed restrictions for special trains
  - Multiples aims
  - Permanent, temporary or emergence speed restrictions can be activated with disconnected balises

- Stops
- Dynamic braking curve
- Condition of control equipment of level crossing and landslide
- Signal to stop, 40 km/h is supervised as far as the main successive signal
- Reaction:
  - Acoustic warning signal when train overcome of 3 km/h maximum speed, service brake when train overcome of 5 km/h maximum speed.
  - Service brake can be released by the driver when the speed comes back in set limits.
  - Emergency brake is utilised only in the event of real emergency for instance when service braking is not enough.
  - Service brake can be released only when train has stopped.
  - Ebicab brake in a way independent enough from driver intervention

## **6) Indusi/PZB (Austria, Germany) (Induktive Zugsicherung/Punktförmige Zugbeeinflussung)**

ATP system which works on all lines of Austria and Germany taken into consideration in order to interoperability.

Resonant circuits magnetically coupled ground-on board transmit 1 information of 3 to the train.

As far as safety is concerned the system is not "fail-safe" but safe enough to develop suitable supervision of the driver. It does not show him signalling conditions but only that train is supervised.

Main features

- 3 frequencies
  - 500 Hz
  - 1 000 Hz
  - 2 000 Hz
- Train characteristics that can be settled by the driver:
  - Braking characteristics (percentage and braking type for 3 categories of supervision)
- Supervision:
  - Hardware Version(not for Germany):
    - 500 Hz: Immediate speed supervision
    - 1 000 Hz: Recognition of the restrictive signal meaning, speed supervision depends on train type
    - 2 000 Hz: Immediate stop
  - Microprocessor version:
    - 500 Hz: Immediate speed supervision and then supervision of the braking curve
    - 1 000 Hz: Recognition of the restrictive signal meaning, speed supervision depends on the program with different braking curves, supervision by limited time and speed values for a limited distance; braking curves(on time and distance) activated by 1000 Hz
    - 2 000 Hz: Immediate stop
- Reaction:
  - The emergency brake is activated in the event of the elusion of any traffic supervision and in the event that the driver does not intervene after a warning acoustic signal.

- Emergency brake can be realized only on special conditions

## 7) KVB (France)

Standard ATP system in France on RFF network. Technically similar to Ebicab. In part installed on high speed lines in order to put in action some kinds of transmission and the supervision of temporary speed restrictions whose speed level are not supplied by TVM codes.

The system is made up with balises located along the track and include encoders and on board computer equipments. The system is overlaid on conventional signalling equipments. The data transmission is between passive (not fed) balises located along the tracks (2-4 for each signal) and one aerial on board located under the vehicle which feeds also the balise on its transit.

The balise and the on board aerial are inductive coupled.

Main features

- Balise
  - 27.115 MHz
  - AM(synchronisation impulses)
  - Impulses frequency: 50 kHz
- Data transmission to trains:
  - 4.5 MHz
  - 50 kbit/sec
  - 12 bit analogical available
  - 172 bit digital available
- Except block trains train characteristics must be set by the driver:
  - Maximum train speed
  - Train length
  - Train braking features
  - Train speed type
- On driver display:
  - Supervision of the speed
  - speed of the realise of the braking
- Supervision:
  - Line speed
  - Stops
  - Dynamic braking curve
  - Speed restrictions
- Reaction:
  - Warning to the driver. Emergency brake is activated in the event of the elusion of any traffic supervision. Emergency brake can be realised only when train stops.

## 8) LZB (Germany, Austria, Spain) (Linienförmige Zugbeeinflussung)

ATC system installed in Germany on all lines which overcome 160Km/h and are significant parts of the lines considered in order to interoperability.

LZB is also installed on some lines in Austria and in Spain

The system is built up of round sections which present:

- adaptation to the interlockings systems and transmission of relevant data
- data elaboration and Man Machine Interface (MMI) in LZB central place

- Data transmission to/from other LZB central places
- Data transmission to/from trains

On board equipments hold an integrated Indusi function. Data transmission between round and on board equipments is possible through a round inductive cable loop and a aerial on board.

Main features.

- Data transmission to trains
  - 36 kHz  $\pm$  0,4 kHz (FSK)
  - 1 200 Bit/sec
  - 83,5 positions per telegram
- Data transmission to trains
  - 56 kHz  $\pm$  0,2 kHz (FSK)
  - 600 Bit/sec
  - 41 positions per telegram
- Train characteristics can be set by the driver :
  - Maximum train speed
  - Train length
  - Train braking features
- On driver display:
  - Valid operational way
  - Data transmission conditions
  - Maximum allowed speed
  - Set out speed
  - Distance to the goal
  - Auxiliary indications
- Supervision:
  - Line speed (maximum speed, permanent, temporary or emergence speed restrictions)
  - Train maximum speed
  - Stops
  - Run way
  - Dynamic speed curve
  - Auxiliary functions
- Reaction:
  - Emergency brake is activated in the event of the elusion of any traffic supervision.
  - Emergency brake can be realised in case of overspeed when the speed comes back under settled limits Operational regulations of LZB system:
  - DB use LZB as an ATC fail-safe system; signalling along the way are not required, in the case they there are as trains not equipped shall circulate, they are invalid for train managed by LZB

## 9) SELCAB (Spain)

ATC system is installed on Madrid-Siviglia high speed line as extension of LZB in stations areas. The on board equipments LZB 80 (Spain) can manage also SELCAB data. Data transmission between on board and round equipments is by mean a semi-continuous cable loop on round and ferrite aerial on board.

Main features

- Data transmission to trains:



- 36 kHz  $\pm$  0,4 kHz (FSK)
- 1 200 Bit/sec
- 83,5 positions per telegram
- Train characteristics that can be set by the driver:
  - Maximum train speed
  - Train length
  - Train braking features
- On driver display:
  - Maximum allowed line speed/ present speed
  - Settled speed
  - Distance from goal
  - Auxiliary indications
- Supervision:
  - Line speed
  - Stops
  - Run way
  - Dynamic braking curve
  - Dynamic braking curve
- Reaction:
  - Emergency brake is activated in the event of the elusion of any traffic supervision.
  - Emergency brake can be realised in case of overspeed when the speed comes back under settled limits

## 10) TBL 1/2/3 (Belgium, U. K.)

TBL is an ATC system installed on NMBS/SNCB lines

The system is made up with balises along the track near each signal and with a on board equipment.

TBL1 is a warning system, TBL2/3 is a cab signalling system.

TBL2/3, foresees balise "in-fill " and also a cable infill loop.

The ground section is called TBL2 in the case it interfaces relay interlocking systems and TBL3 in the case it interfaces a computer based system. The on board equipment is called TBL2 and includes TBL2, TBL1 Crocodile functions

Data transmission is between active balises located along the track and same aerial located on board

Main features

- Data transmission to trains:
  - 100 kHz  $\pm$  10 kHz (FSK)
  - 25 kbit/sec
  - 119 bit available for telegram(TBL2/3)
  - 5 data available on 40 bit for telegram (TBL1)
- Train characteristics as follow can be set by the driver (TBL2)
  - Train identification and language selection
  - Maximum train speed
  - Train length
  - Train braking features
- On driver display:
  - Maximum speed (braking curves)
  - Set out speed
  - Present speed

- Maximum allowed line speed/ present speed
- Settled speed
- Distance from goal
- Auxiliary indications
- Supervision:
  - Line speed on the base of track and train characteristics
  - Putting into effect permanent and temporary speed restrictions
  - Multiples aims
  - Dynamic braking curve
  - Stops
  - Way of run
  - Driver supervision
  - Auxiliary functions
- Reaction:
  - Acoustic and optic warning signal
  - Emergency brake is activated in the event of the elusion of any traffic supervision

## 11) TPWS (U.K.)

TPWS system has the aim to improve safety, mainly in junctions. . TPWS may be installed to all the lines considered in order to interoperability.

The system insures following functions:

- Warning to the driver at the normal braking distance in the event of following restrictive conditions
  - Not open signals
  - Permanent speed restrictions
  - Temporary speed restrictions
- Train protection on following circumstances
  - Overcoming line allowed maximum speed or special speed restrictions (speed restriction)
  - Excessive speed near a stop signal (speed restriction)
  - Overcoming a red signal (train stop).

The system is based on permanent magnets and coils which generate magnetic field on the track. The system is considered fail safe and includes measures and principles in order to minimize wrong behaviours of the driver.

## 12) TVM (France, Belgium)

TVM is installed on RFF high speed lines.

The older version (TVM 300) is installed on the line Paris-Lyon (LGV SE) and on the lines Paris-Tours/Le Mans (LGV A).

The most recent version (TVM 430) on Paris-Lille-Calais (LGV N) line, on the SNCB section towards Brussels, on the line Lion-Marseille/Nimes (LGV Méditerranée) and on Eurotunnel. TVM 430 version is compatible with TVM 300.

TVM 300 e TVM 430 are based on coded tracks circuits as continuous transmission tools and on loop or balises (type KVB o TBL) as means of discontinuous transmission.

Main features

- Data transmission to trains thought track circuits
  - Several carrier frequencies (1,7, 2,0, 2,3, 2,6) kHz
  - Speed codes FSK

- 18 speed codes (TVM 300)
- 27 Bit (TVM 430)
- Data transmission to trains through inductive loop:
  - TVM 300: 14 frequencies (from 1,3 to 3,8 kHz)
  - TVM 430: PSK signals, 125 kHz, 170 bit
- On driver display:
  - speed orders connected with coloured signalisations
- Supervision:
  - Speed (continuous)
  - Braking based on:
    - feet curve (TVM 300)
    - parabolic curve (TVM 430)
  - Stops
- Reaction:
  - Emergency braking is activated in the event of over speed.

### 13) ZUB 123 (Denmark)

Zub 123 is an ATC system widely installed on Danish lines considered in order to actuate interoperability. The system is made up as follows:

- Ground equipments:
- One transponder located outside track
- Sometimes utilised cable loop as infill
- On board equipments (considered fail safe):
- Unity of data elaboration, line coupling coils, odometer, tachometer, monitor in cab.

Main features

- 3 frequencies:
  - 50 kHz: control channel
  - 100 kHz: energy channel
  - 850 kHz: data channel
- Data transmission:
  - Time Division Multiplex (until 96 available bits)
  - Data computer elaborated
- On driver display:
  - Maximum allowed line speed/ present speed
  - Settled speed
  - Distance from goal
  - Auxiliary indications
- Supervision
  - Line speed
  - Stops
  - Speed restrictions
  - Dynamic braking curve
- Reaction:
  - Emergency brake is activated in the event of the elusion of any traffic supervision
  - Service brake can be released by the driver when the speed comes back in set limits.

## 14) EVM (Hungary)

EVM is installed on the main lines of Hungarian Railways (MAV). These line are taken in consideration in order to actuate interoperability .Most of locomotives are equipped. The ground equipments are made of coded block circuits which switch a carrier frequency for data transmission. The carrier frequency is 100% AM coded.

Data transmission between coded tracks circuits and on board equipment has carried out through inductive coupled aerials located over the rails.

Main characteristics

- Data Transmission track-trains
  - Carrier frequency: 75 Hz
  - AM codes (100%)
  - 7 codes (6 speed codes)
- On the driver display:
  - Aspect on board of the signal
    - Signalling aspects (stop, allowed speed reaching -15,40,80,120,max-notransmission/failure, shunting mode)
- Supervision:
  - Speed limit
  - Speed control each 1550 m in the event of  $v_{real} < v_{set}$  out
  - Supervision control each 200 m in the event of  $v_{real} > v_{set}$  out
  - Aspect relevant to stop
  - Speed restrictions
  - Shunting mode
- Reaction
  - Emergency brake is activated in the event of:  
The driver does not intervene;
    - the speed limit is not respected after the supervision signal
    - the stop signal has been overcome at a speed superior 15 Km/h
    - in shunting mode after overcoming 40 km/h

## 15) LS (Czech Republic, Slovakia)

LS is installed on all the main lines of the Czech and Slovak State Railway (CD and ZSR). These line are taken in consideration in order to actuate interoperability.

The ground equipment are made of track coded systems.

The carrier frequency is 100% AM coded. Most of locomotives hold on board equipment, in part modernized (computer based)

Data transmission between coded tracks circuits and on board equipment has carried out through inductive coupled aerials located over the rails.

Main characteristics

- Train data transmission:
  - carrier frequency: 75 Hz
    - AM codes
    - 4 speed codes (included stop aspect)
- On driver display
- Aspect on board of the signal
  - Signalling aspects (stop, speed restrictions, attention –speed limit100Km/h, maximum speed)
- Supervision:
  - Speed limit

- No distance supervision
- Reaction:
  - Emergency brake is activated in the event of the driver does not intervene when speed limit is overcome

## 16) ZUB 121 (Switzerland)

Only in order to inform are described the main functionalities of the system utilised by Switzerland (European country not U. E. members).

It is the system widely installed on Swiss lines of SBB and BLS taken in consideration to improve interoperability

The system is made of:

- Line equipments
  - Establish the run direction on which the system intervenes
  - A transponder installed in the middle of the track decentralized compared with the coupling loop establishes the run direction on which the system intervenes
- On board equipment
  - Brake unity
  - Coupling coil installed on the boogie, which receives the data from the line
  - The odometer and the tachometer.
  - Cab panel and monitor.
  - An input / output interface to radio installed on the train in order to transmit data inserted by the driver.
- Characteristics
  - 3 frequencies:
    - 50 kHz: check channel
    - 100 kHz: energy channel
    - 850 kHz: data channel
  - Data transmission
    - Multiplex time sharing.
    - Data elaboration on board not "fail-safe"
  - On driver display:
    - Any control
    - Signal : go from a loop
    - Maximum allowed line speed/ present speed
    - Settled speed
    - Emergency brake on
- Realise bottom
- Supervision:
  - Speed limit
  - Speed control each 1550 m in the event of  $v_{real} < v_{set}$  out
  - Supervision control each 200 m in the event of  $v_{real} > v_{set}$  out
  - Aspect relevant to stop
  - Speed restrictions
  - Shunting mode
- Reaction
  - Emergency brake is activated in the event of:  
The driver does not intervene;
    - the speed limit is not respected after the supervision signal
    - the stop signal has been overcome at a speed superior 15 Km/h
    - in shunting mode after overcoming 40 km/h

- Supervision:
  - Speed lines
  - Stops
  - Speed restrictions
  - Dynamic brake curve
  - Radio channels control
- Reaction:
  - Brake is activated when the train gets the speed limit

## **Annex 10.3.1 Example of Operational instructions**

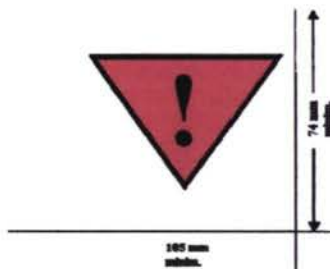
## DANGEROUS GOODS

### Example of Operational instructions

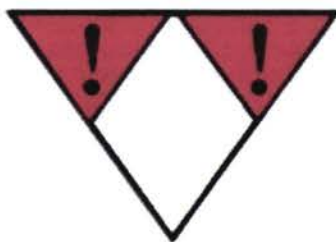
### Notions about wagons with shunting restriction or placing out needs

#### Art. 1

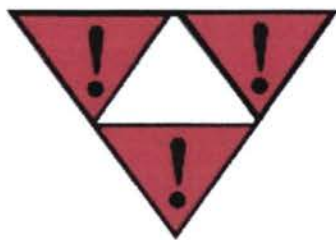
#### Labels of shunting restriction



**M. 249** (n. 13 RID) wagons that can be shunted pushing with caution, avoiding in any case crushes at speed superior than 7 Km/h



**M. 249 bis:** wagons that can be shunted without particular restrictions even if with caution avoiding, in any case, bumps



**M.249 ter (n. 15 RID):** wagons that can be shunted only with accompaniment of the hooked engine caution avoiding, in any case, bumps



**M. 250:**shuntig with no allowed transit on throw saddle



## **Art. 2**

### **Transport of dangerous goods**

1. Materials and objects which by their nature can compromise train safety or harm the staff ,damage other goods or railways equipment are defined dangerous goods.
2. The dangerous goods can be forwarded with passenger train only by order of the movement inspector applying the appropriate Instruction.  
To forward with goods trains more wagons holding radioactive or explosive materials movement inspector must give specific orders on the basis of the appropriate Instruction.
3. On the wagons loaded with dangerous goods the labels of danger foreseen with reference to the load. nature must be attached. On the tank wagons or carrying tanks holding such goods must be always attached the label orange coloured with the identification numbers of the danger and of the material.
4. In case of a failure to a wagon holding dangerous goods must be immediately warned the movement inspector indicating the labels of danger attached and in case of tanks the identification numbers of the danger and of the material written on the label orange coloured.
5. It is forbidden to approach the wagons loaded by explosives, gas, flammables smoking or carrying free flames.
6. It is forbidden to introduce into the maintenance shops       wagons       still loaded with dangerous goods.

**Art. 3**

**Danger labels, shunting restrictions, spacing out**

**1. Danger labels- meaning:**

N° 1



N° 1.4



N° 1.5



**Subject to explosion**

N° 01



**Danger of explosion**

N° 2



**Not flammable not toxic gas**

N° 2



N° 3



**Danger of fire**  
**Liquid inflammable materials**

N° 3



**Danger of fire  
(flamable firm)**

N° 4.1



**Spontaneous  
flamable**

N° 4.2



**Danger of flammable gas  
in case of water contact**

N° 4.3



N° 4.3



N° 5.1



**Oxidizing substances**

N° 5.2



**Organic peroxides**

N° 0.5



**Danger of fire  
activation**

N° 6.1



**Toxic material**

N° 6.1A



**Harmful  
material**



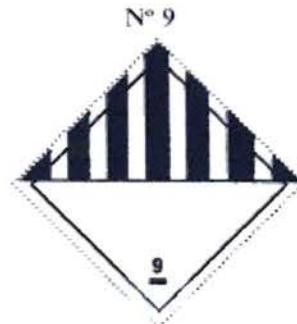
Materia radioattiva



Note: the wagons loading radioactive goods usually show the label n. 7 or one among the labels n. 7A,7B, 7C that, as far as shunting movements and spacing out are concerned, have the same meaning



corrosive material



materials that present a danger different from those shown on the other labels

## 2. Shunting restrictions

For wagons with danger labels n° 1, 1.5, 7D, 15 are forbidden pushing and gravity shunting and the movements must be effectuated only by engine connection and without any bump. For wagons with danger labels n° 1.4, 3, 4.1, 4.2, 4.3, 5, 13 are allowed pushing and gravity shunting on condition that are effectuated with caution avoiding, in any case, bumps at a speed higher than 7 km/h.

## 3. Placing out

In the forming of the trains the wagons of established dangerous goods must be spaced out as follow:

- wagons with danger labels n°1, 1.5 must be spaced out with almost one covered wagon with 4 axes or with 2 covered wagons with 2 axes, loaded with not dangerous good from the wagons with labels N°3, 4.1, 4.2, 4.3, 5.1, 5.2, 05;
- wagons with danger labels n°1,1.5, 01 must be spaced out with almost one covered wagon empty or loaded with not dangerous good from the wagons with labels N° 7D\*;
- wagons with danger labels n° 5.1, 5.2, 05 must be spaced out with almost one covered wagon empty or loaded with not dangerous good from the wagons with labels N°3, 4.1, 4.2, 4.3;
- wagons with danger labels n° 01 and wagons with danger labels n° 3, 4.1, 4.2, 4.3, 5.1, 05 e 7D\* must be spaced out with almost one covered wagon empty or loaded with not dangerous good;
- tank wagons or loading tanks with the labeln°4.3 and those marked
- with a strip horizontal orange coloured must be placed out with almost a wagon loaded with not dangerous goods or empty from wagons loaded with beams;
- wagons with danger labels n°1, 1.4, 1.5, 01, 7D\* and tank wagons or loading tank with danger labels N°3,4.1,4.2,4.3, 5.1, 5.2, 05 e 13 must be placed out from the engine with almost a wagon loaded with not dangerous goods or empty;
- wagons with danger labels n°1, 1.5, e 01 must not be located in rear of the train.

**Placing out  
each other of  
wagons**

**From the  
engine**

**From the rear  
of the train**

#### Art. 4

##### Signalisation of tanks loading dangerous goods

The tanks must present on both sides, a table orange coloured of cm 30x 40 with the numbers of danger identification (upper part) of the material.

Example of orange signalisation:



The danger identification number is settled by two or three figures: Usually the figures show following dangers: :

2 Emission of gases caused by a compression or a chemical reaction

3 Flammability of liquid materials (vapours) and gases

4 Flammability of firm substances

5 Oxidizing substances

6 Poisonous substances

7 Radioactive materials

8 Corrosion substances

9 Instability (danger of spontaneous violent reaction)

The repetition of a figure shows a deeper danger. When the danger of a good is indicated with one figure this figure must be completed by zero.

When. the danger identification number is preceded with a X that means that the material interacts dangerously with water. For such materials water cannot be used without experts approval.

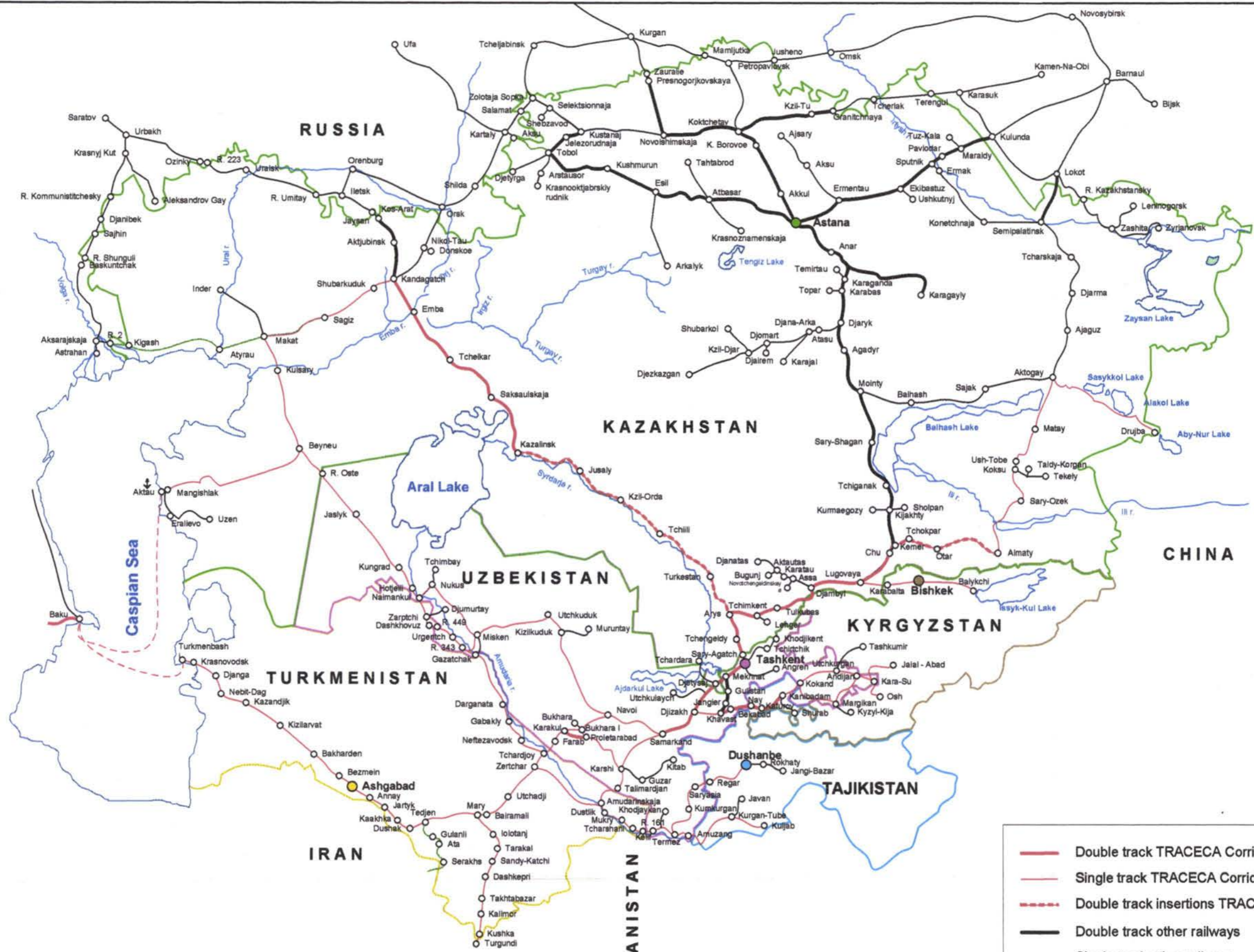
**Annex 10.3.2      Scheme of operating and  
projected crude oil pipelines in  
Kazakhstan**

### Scheme of operating and projected crude oil pipelines in Kazakhstan



Source: "Organizational - technical aspects of transportation of oil and mineral oil by rail" S. E. Bekjanova.





**CENTRAL ASIAN RAILWAY NETWORK**