European Commission

Regional Balkans Infrastructure Study - Transport

Appendix 17 - Final Report

Project Monitoring
Description of Database

July 2003

REBIS transport
Joint Venture

European Commission

Regional Balkans Infrastructure Study - Transport

Appendix 17 - Final Report

Project Monitoring
Description of Database

July 2003

Report no.	2
Issue no.	Final
Date of issue	23 July 2003
Prepared	HEK
Checked	PCH
Approved	ELH

Table of Contents

1 Background and purpose

1.1 Background

An important task of the South Europe Transport Observatory (SEETO) is to monitor the traffic and physical conditions of the Core Network, and to monitor how projects are planned and implemented. This task requires the regular reporting of data from relevant transport authorities in the region, and an appropriate tool to process and store data, and to produce the required reports.

1.2 Purpose

In order to assist in fulfilling the above task, REBIS has developed a database aiming at:

- being comprehensive concerning the amount of information
- being user friendly
- giving sufficient output on the monitoring of key strategic information

1.3 Methodology and content

The EC Commission has recently prepared detailed data definitions for the collection of such data on the TINA network, and, subsequently, UNECE has agreed to use the same definitions in their work. The REBIS project has, therefore, adopted these data definitions in order to harmonise data collection and presentation.

The database is developed in Microsoft Access. In the first version it has been developed as a single user database to be located at the SEETO premises. The database will contain basic data on the current status as well as planned and ongoing projects on the core network. For each project the database provides information on type of project, state of the network after completion of the project, and project financing.

2 General information on the database

2.1 Organisation

In this first version, the database has been developed as a single user database, which is located at SEETO.

The SEETO is the authority responsible for the database and also serves as database operator when entering new data or creating reports.

The other partners of the project are the relevant authorities and institutions in the five countries, as well as in the EU including road authorities, rail authorities, ministries of transport etc. They can specify a request for data and then get reports from the SEETO.

The other partners also serve as data providers as they are responsible for delivering updated information on an annual basis. This will be carried out through a set of standard questionnaires, which are sent from the SEETO to the partners to be filled in and returned.

In the longer term, it is envisaged to establish a user interface via the Internet, enabling the national authorities to enter data directly into the database and to extract standard reports. The database has also been prepared for GIS application, which may be added at a later stage.

The database is programmed in English language only. No translations to the local languages of the REBIS countries have been made.

2.2 System architecture

The database is developed as a Microsoft Access desktop application. The database, thus, resides in a single file. The user interface consists of Access forms generated in Visual Basic for Applications. Application logic is likewise generated in Visual Basic for Applications. Data is stored in a relational database based on the Microsoft Jet database engine. Business rules are implemented in the Application Logic and database layers.

When the user accesses the user interface, the technical flow is as follows: The VBA forms receive input from the user. This input is handled by the Application Logic and appropriate queries to the database are executed. The database returns record sets that are handled by the Application Logic and passed on to the User Interface. Data is presented in forms or as a Report. Certain reports will be transferable to Microsoft Excel.

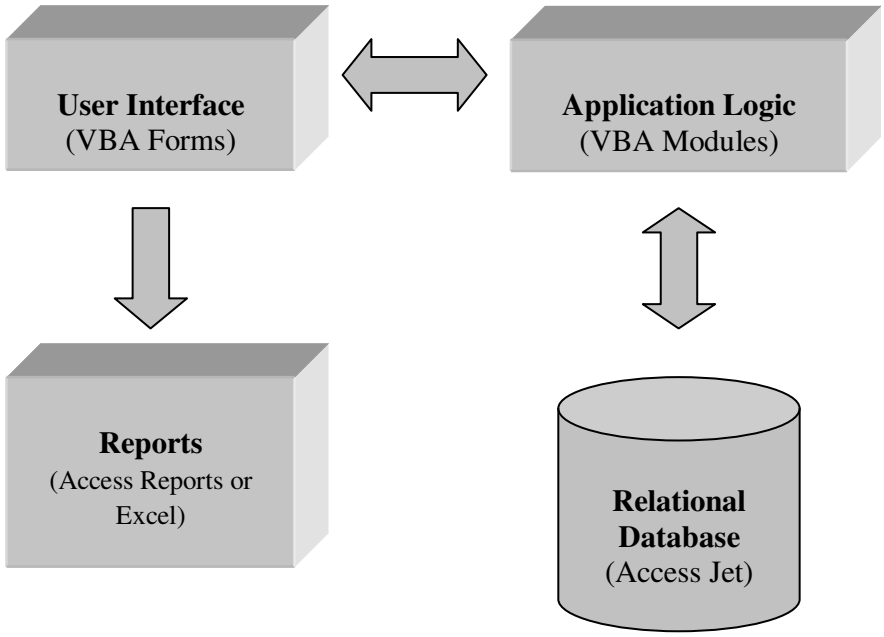


Figure 2.1 System architecture.

3 Specific content of the database

The database contains a table with general economic data plus a series of tables for each mode as described in the following sections. It is emphasised that the database is in accordance with the TERN database and other databases, such as e.g. TINA.

The mode-specific tables are, in general, structured in six sections for each mode:

A: *Code*, containing basic identification data of the link (country, route number etc.)

B: *Section*, containing more specific data on the actual link, such as link type, technical specifications, traffic etc.

C: *Measure*, describing the actual measure (project) on the link (new construction, upgrading etc.), if any

D: *Technical characteristics after implementation of the measure*, containing specific data as in section B, but for the status of the link after the implementation of the measure

E: *Implementation Report*, containing data on the implementation of the measure (status, time schedule etc.)

F: *Financing*, containing data on the financing of the measure (total investments, financing sources etc.)

The tables contain one record for each link in the network. Section A and B will be filled in for all links, whereas section C, D, E and F will be filled in only in case of actual projects on the link.

3.1 General data

A table containing general economic data has been constructed as follows:

Year	Index
1999	100
2000	102
2001	104
etc.	etc.

The purpose of this table is to give the user the opportunity to select his own basis year for a financial analysis. By default, the basis year is 1999, but the user might wish to use another year for reference. Giving an economic index for each year, this is possible.

The table is filled by a set of default values, but it is possible for the user to change them. This is relevant for future use, when the index needs to be adjusted according to the actual economic development.

A table of this kind is based on the assumption that the economic development is the same in the five countries, which might not seem realistic. However, the economic index must be seen as an average for the countries. Using specific development indices for each country would, on the other hand, lead to some definition problems when creating reports from the database.

3.2 Road

For roads, the database contains the following tables:

Table A contains the basic data of the link.

A. Code		
Field name	**Description**	**Valid entries**
Country	Name of country	Albania, Bosnia and Herzegovina, Croatia, Kosovo, FYRO Macedonia, Serbia and Montenegro
Route number	Name of route, according to the REBIS numbering system	Integer
TERN	TERN number referring to map	Integer
Section	Name/description of section	Text string, max. 36 characters

Table B contains specific data on road type, condition and traffic.

B. Section		
Field name	**Description**	**Valid entries**
From	Name of city	Text string
To	Name of city	Text string
National road number	Road number according to national road classification	Official national classification, e.g. M1, A4
Length	Length of section in km	Integer
Type	Type of road according to pre-defined codes: O = Ordinary road (all-purpose roads, open to all kinds of traffic) H = High Quality Road (open to cars, buses and trucks only; connected to other roads through intersections) M = Motorways (with division between the two directions, open to motorized traffic only, entrances and exits at interchanges)	O / H / M
Lanes	Number of lanes per direction	Integer, 1-4
Responsibility	Code of authority responsible for the section: N = National level F = Federal level R = Regional P = Private road	N / F / R / P
Speed limit	Speed limit on section, in km/h	Integer, 50-130
Condition of road surface	Code for the condition of the road surface: 0 = No problems 1 = Need of new wearing course 2 = Need of pavement rehabilitation 3 = Need of overlay + new wearing course 4 = Need of complete new pavement	Integer, 0-4
Topography	Characteristics of the landscape: FX: Flat HX: Hilly MX: Mountainous Where X can be U (Urban) or R (Rural) or blank, if	F / H / M / FU / HU / MU / FR / HR / MR

B. Section		
Field name	**Description**	**Valid entries**
	unknown	
Current traffic	AADT (Annual Average Daily Traffic) in number of cars per day in the two directions together	Integer
Year	Year for which the current traffic is valid	Integer, 1990-2003
Heavy vehicles	Percentage of vehicles of more than 6 tonnes	Percentage
Traffic forecast	Expected number of vehicles	Integer
Forecast year	Year, for which the expected traffic volume is estimated	Integer, 2004-2050
Forecast source	Name of company or institution which has produced the traffic forecast	Text string

Section C describes the actual measure on the link, if any.

C. Measure		
Field name	**Description**	**Valid entries**
Construction of new link	Defines whether the section describes the construction of a new link, upgrading of an existing link, or no works on the link 0 = No works 1 = Construction of new link 2 = Upgrading of an existing	0-2
Traffic Management Systems	Measures related to Traffic Management Systems	Text string

Section D describes the link as it will look after the implementation of the measure.

D. Main technical characteristics of the link after the implementation of the measure		
Field name	**Description**	**Valid entries**
Category of link after the measure	Type of road after implementation of the measure: O = Ordinary road H = Highway M = Motorway	O / H / M
Number of lanes per direction	Number of lanes per direction after the implementation of the measure	Integer, 1-4
Speed limit	Speed limit, in km/h, after the implementation of the measure	Integer, 50-130

Section E describes the implementation of the measure.

E. Project's Implementation Report		
Field name	**Description**	**Valid entries**
Reported in 1998	Indication of whether the project was planned in 1998	Y / N
Project Status	Current status of the project: P: Planning Stage S: Design Study Stage U: Under Construction C: Completed	Single character, (P / S / U / C)
Starting date	The year in which the project has started / will start	Integer, 1995-2015
Estimated completed date	The year in which the project will be finished	Integer, 1995-2020

Section F describes the financing of the measure.

F. Financing		
Field name	**Description**	**Valid entries**
Basis year	The year which is used for price level of the financial input	Integer, 1999-2020
Total costs	Total expected costs for the project, in EUR, excluding VAT and in price level of the year mentioned above	Integer

F. Financing		
Field name	**Description**	**Valid entries**
Amount from TEN-T commitments	Amount from TEN-T commitments for the actual project, in EUR	Integer
Amount from the Cohesion Fund	Amount from the Cohesion Fund for the actual project, in EUR	Integer
Amount from the ERDF	Amount from the ERDF for the actual project, in EUR	Integer
EIB loans	Amount from EIB loans for the actual project, in EUR	Integer
Amount from other sources	Amount from other sources for the actual project, in EUR	Integer The sum of the various amounts must be equal to the total costs
Specification of other sources	Description of other sources which have provided the amount mentioned above	Text string

3.3 Rail

For railways, the database contains the following tables:

Table A contains the basic data of the link.

A. Code		
Field name	**Description**	**Valid entries**
Country	Name of country	Albania, Bosnia and Herzegovina, Croatia, Kosovo, FYRO Macedonia, Serbia and Montenegro
Route number	Name of route, according to the REBIS numbering system	Integer
TERN	TERN number referring to map	Integer
Section	Name/description of section	Text string, max. 36 characters

Table B contains specific data on type, condition and traffic.

B. Section		
Field name	**Description**	**Valid entries**
From	Name of city	Text string
To	Name of city	Text string

B. Section		
Field name	**Description**	**Valid entries**
Length	Length of section in km	Integer
Category of link	Category of link: H: High speed line U: Upgrade high speed line C: Conventional line	H / U / C
Freight trains per day	Average number of freight trains per day in both directions	Integer
Passenger trains per day	Average number of passenger trains per day in both directions	Integer
Volumes of freight	Annual volumes of freight on section, in tonnes	Integer
Number of passengers	Annual number of passengers on section	Integer
Tracks	Number of tracks on section	Integer, 1-4
Power supply voltage	Voltage used for electrical trains (if any) on the link	Integer
Track gauge	Track gauge in mm	Integer
Axle load	The maximum possible axle load on the link, in tonnes	Integer
Command-control and signalling characteristics	Name of existing command-control or signalling systems along the line	Text string
Speed limit, freight	Speed limit for freight trains, in km/h	Integer, 50-130
Speed limit, passengers	Speed limit for passenger trains, in km/h	Integer, 50-200
Topography	Characteristics of the landscape: FX: Flat HX: Hilly MX: Mountainous Where X can be U (Urban) or R (Rural) or blank, if unknown	F / H / M / FU / HU / MU / FR / HR / MR
Traffic forecast, freight	Expected amount of freight per year	Integer
Traffic forecast, passengers	Expected amount of passengers per year	Integer
Forecast year	Year, for which the expected traffic volume is estimated	Integer, 2004-2050
Forecast source	Name of company or institution which has produced the traffic forecast	Text string

Section C describes the actual measure on the link, if any.

C. Measure		
Field name	**Description**	**Valid entries**
Element of infrastructure	Defines whether the measure is related to a rail link or a station. 0 = No measure 1 = Link 2 = Station	Integer, 0-2
Type of measure	Defines whether the measure is an upgrade of existing facilities (link or station) or a construction of new ones. 0 = No works 1 = Construction of new facilities 2 = Upgrading of existing facilities	Integer, 0-2
Type of measure on link	Specifies the type of upgrading of link: 1 = Additional track(s) 2 = Change of alignment 3 = Electrification 4 = Signalling 5 = Telecommunications 6 = Traffic control systems 7 = Loading gauge extension 8 = Increase of axle load 9 = Interchanges 10 = Access to significant node (airport, terminal etc.)	Integer, 0-10 Only relevant if the measure is related to a link, and the type is upgrading.
Other measure on link	Description of any other measure on a link than those mentioned above.	Text string
Name of Station	The name of the station which is the object of the measure	Text string. Only relevant if the measure is related to a station
Type of measure on station	Specifies the type of upgrading of a station: 1 = Construction/upgrading of passenger terminal 2 = Construction/upgrading of freight terminal 3 = Construction/upgrading of intermodal terminal 4 = Construction/upgrading of station facilities 5 = Improvement of tracks within the station	Integer, 0-5, multiple values allowed Only relevant if the measure is related to a station
Other measure on station	Description of any other measure on a station than	Text string

C. Measure		
Field name	**Description**	**Valid entries**
	those mentioned above	
Traffic Management Systems	Measures related to Traffic Management Systems	Text string

Section D describes the link as it will look after the implementation of the measure.

D. Main technical characteristics of the link after the implementation of the measure		
Field name	**Description**	**Valid entries**
Number of tracks	Number of tracks after the implementation of the measure	Integer, 1-4
Speed limit, freight	Speed limit for freight trains, in km/h, after the implementation of the measure	Integer, 50-130
Speed limit, passengers	Speed limit for passenger trains, in km/h, after the implementation of the measure	Integer, 50-200
Power supply voltage	Voltage used for electrical trains (if any) on the link after the implementation of the measure	Integer
Track gauge	Track gauge in mm after the implementation of the measure	Integer
Axle load	The maximum possible axle load on the link, in tonnes after the implementation of the measure	Integer
Command-control and signalling characteristics	Name of existing command-control or signalling systems along the line after the implementation of the measure	Text string

Section E describes the implementation of the measure.

E. Project's Implementation Report		
Field name	**Description**	**Valid entries**
Reported in 1998	Indication of whether the project was planned in 1998	Y / N
Project Status	Current status of the project: P: Planning Stage S: Design Study Stage U: Under Construction C: Completed	Single character, (P / S / U / C)
Starting date	The year in which the project has started / will start	Integer, 1995-2015
Estimated completed date	The year in which the project will be finished	Integer, 1995-2020

Section F describes the financing of the measure.

F. Financing		
Field name	**Description**	**Valid entries**
Basis year	The year which is used for price level of the financial input	Integer, 1999-2020
Total costs	Total expected costs for the project, in EUR, excluding VAT and in price level of the year mentioned above	Integer
Amount from TEN-T commitments	Amount from TEN-T commitments for the actual project, in EUR	Integer
Amount from the Cohesion Fund	Amount from the Cohesion Fund for the actual project, in EUR	Integer
Amount from the ERDF	Amount from the ERDF for the actual project, in EUR	Integer
EIB loans	Amount from EIB loans for the actual project, in EUR	Integer
Amount from other sources	Amount from other sources for the actual project, in EUR	Integer The sum of the various amounts must be equal to the total costs
Specification of other sources	Description of other sources which have provided the amount mentioned above	Text string

3.4 Airports

For airports, the database contains the following tables:

Table A contains the basic data of the airport.

A. Code		
Field name	**Description**	**Valid entries**
Country	Name of country	Albania, Bosnia and Herzegovina, Croatia, Kosovo, FYRO Macedonia, Serbia and Montenegro
City	Name of city, which the airport serves	Text string
Airport code	The international three letter code for the airport	Text string, three characters
Airport category	Category of airport: I = International C = Community R = Regional	I / C / R

Table B contains specific data on type, condition and traffic.

B. Node		
Field name	**Description**	**Valid entries**
Main activity	The main activity of the airport: P = Passenger F = Freight B = Both	P / F / B
Runways	Number of runways in the airport	Integer, 0-20
Max. length of runway	Length of the longest runway, in metres	Integer
Amounts of freight	Annual amounts of freight handled in the airport, in tonnes	Integer
Number of passengers	Annual number of passengers in the airport.	Integer
Freight capacity	Theoretical capacity of freight per year, in tonnes	Integer
Passenger capacity	Theoretical capacity, in number of passengers per year	Integer
Traffic forecast, freight	Expected volume of freight per year	Integer
Traffic forecast, passengers	Expected number of passengers per year	Integer

B. Node		
Field name	**Description**	**Valid entries**
Forecast year	Year, for which the expected traffic volume is estimated	Integer, 2004-2050
Forecast source	Name of company or institution which has produced the traffic forecast	Text string

Section C describes the actual measure on the node, if any

C. Measure		
Field name	**Description**	**Valid entries**
Element of measure	Defines whether the measure is related to runways or terminals. 0 = No measure 1 = Runway 2 = Freight terminal 3 = Passenger terminal	Integer, 0-3
Type of measure	Defines whether the measure is an upgrade of existing facilities or construction of new ones. 0 = No works 1 = Construction of new facilities 2 = Upgrading of existing facilities	Integer, 0-2
Other measure	Description of any other measure than those mentioned above	Text string
Traffic Management Systems	Measures related to Traffic Management Systems	Text string

Section D describes the node as it will look after the implementation of the measure.

D. Main technical characteristics of the node after the implementation of the measure		
Field name	**Description**	**Valid entries**
Main activity	The main activity of the airport: P = Passenger F = Freight B = Both	P / F / B
Runways	Number of runways in the airport	Integer, 0-20
Max. length of runway	Length of the longest runway, in metres	Integer
Freight capacity	Theoretical capacity of freight per year, in tonnes	Integer
Passenger capacity	Theoretical capacity, in number of passengers per year	Integer

Section E describes the implementation of the measure.

E. Project's Implementation Report		
Field name	**Description**	**Valid entries**
Reported in 1998	Indication of whether the project was planned in 1998	Y / N
Project Status	Current status of the project: P: Planning Stage S: Design Study Stage U: Under Construction C: Completed	Single character, (P / S / U / C)
Starting date	The year in which the project has started / will start	Integer, 1995-2015
Estimated completed date	The year in which the project will be finished	Integer, 1995-2020

Section F describes the financing of the measure.

F. Financing		
Field name	**Description**	**Valid entries**
Basis year	The year which is used for price level of the financial input	Integer, 1999-2020
Total costs	Total expected costs for the project, in EUR, excluding VAT and in price level of the year mentioned above	Integer
Amount from TEN-T commitments	Amount from TEN-T commitments for the actual project, in EUR	Integer
Amount from the Cohesion Fund	Amount from the Cohesion Fund for the actual project, in EUR	Integer
Amount from the ERDF	Amount from the ERDF for the actual project, in EUR	Integer
EIB loans	Amount from EIB loans for the actual project, in EUR	Integer
Amount from other sources	Amount from other sources for the actual project, in EUR	Integer The sum of the various amounts must be equal to the total costs
Specification of other sources	Description of other sources which have provided the amount mentioned above	Text string

3.5 Seaports

For seaports, the database contains the following tables:

Table A contains the basic data of the seaport.

A. Code		
Field name	**Description**	**Valid entries**
Country	Name of country	Albania, Bosnia and Herzegovina, Croatia, Kosovo, FYRO Macedonia, Serbia and Montenegro
City	Name of city, which the seaport serves	Text string
Seaport code	Letter code for the seaport	Text string
Seaport category	Category of seaport, referring to Art. 12 of Decision No. 1346/2001/EC which amends the TEN guidelines of 1996	Text string

Table B contains specific data on type, condition and traffic.

B. Node		
Field name	**Description**	**Valid entries**
Main activity	The main activity of the sea-port: P = Passenger F = Freight B = Both	P / F / B
Berths, freight	Number of berths for freight transport	Integer
Berths, passengers	Number of berths for passenger transport	Integer
Max. depth	Maximal depth of the largest berth, determining the maximal size of ship, in metres	Integer
Short sea shipping facilities	Indication of whether the seaport is equipped with transhipment facilities for short sea shipping	Y / N
Intermodal transport	Indication of whether the seaport is equipped with transhipment facilities for intermodal transport	Y / N
Containers per year	No. of containers per year, in TEU equivalents	Integer
Volume of freight	Annual volume of freight handled in the seaport, in tonnes	Integer
Number of passengers	Annual number of passengers in the seaport	Integer
Traffic forecast, containers	Expected amount of containers, in TEU equivalents	Integer
Traffic forecast, freight	Expected volume of freight per year	Integer
Traffic forecast, passengers	Expected number of passengers per year	Integer
Forecast year	Year, for which the expected traffic volume is estimated	Integer, 2004-2050
Forecast source	Name of company or institution which has produced the traffic forecast	Text string

Section C describes the actual measure on the node, if any.

C. Measure		
Field name	**Description**	**Valid entries**
Element of measure	Defines whether the measure is related to water (berths) or landside facilities (terminals) 0 = No measure 1 = Berth / port basin 2 = Freight terminal 3 = Passenger terminal	Integer, 0-3
Type of measure	Defines whether the measure is an upgrade of existing facilities or construction of new ones 0 = No works 1 = Construction of new facilities 2 = Upgrading of existing facilities	Integer, 0-2
Other measure	Description of any other measure than those mentioned above	Text string
Traffic Management Systems	Measures related to Traffic Management Systems	Text string

Section D describes the node as it will look after the implementation of the measure.

D. Main technical characteristics of the node after the implementation of the measure		
Field name	**Description**	**Valid entries**
Main activity	The main activity of the airport: P = Passenger F = Freight B = Both	P / F / B
Berths, freight	Number of berths for freight transport	Integer
Berths, passengers	Number of berths for passenger transport	Integer
Max. depth	Maximal depth of the largest berth, determining the maximum size of ship, in metres	Integer
Short sea shipping facilities	Indication of whether the seaport is equipped with transhipment facilities for short sea shipping	Y / N
Intermodal transport	Indication of whether the seaport is equipped with transhipment facilities for intermodal transport	Y / N

Section E describes the implementation of the measure.

E. Project's Implementation Report		
Field name	**Description**	**Valid entries**
Reported in 1998	Indication of whether the project was planned in 1998	Y / N
Project Status	Current status of the project: P: Planning Stage S: Design Study Stage U: Under Construction C: Completed	Single character, (P / S / U / C)
Starting date	The year in which the project has started / will start	Integer, 1995-2015
Estimated completed date	The year in which the project will be finished	Integer, 1995-2020

Section F describes the financing of the measure.

F. Financing		
Field name	**Description**	**Valid entries**
Basis year	The year which is used for price level of the financial input	Integer, 1999-2020
Total costs	Total expected costs for the project, in EUR, excluding VAT and in price level of the year mentioned above	Integer
Amount from TEN-T commitments	Amount from TEN-T commitments for the actual project, in EUR	Integer
Amount from the Cohesion Fund	Amount from the Cohesion Fund for the actual project, in EUR	Integer
Amount from the ERDF	Amount from the ERDF for the actual project, in EUR	Integer
EIB loans	Amount from EIB loans for the actual project, in EUR	Integer
Amount from other sources	Amount from other sources for the actual project, in EUR	Integer The sum of the various amounts must be equal to the total costs.
Specification of other sources	Description of other sources which have provided the amount mentioned above	Text string

3.6 Inland waterways

For inland waterways, the database contains the following tables:

Table A contains the basic data of the waterway.

A. Code		
Field name	**Description**	**Valid entries**
Country	Name of country	Albania, Bosnia and Herzegovina, Croatia, Kosovo, FYRO Macedonia, Serbia and Montenegro
Route number	Name of route, according to the REBIS numbering system	Integer
TERN	TERN number referring to map	Integer
Section	Name/description of section	Text string, max. 36 characters

Table B contains specific data on type, condition and traffic.

B. Section		
Field name	**Description**	**Valid entries**
From	Name of city	Text string
To	Name of city	Text string
Length	Length of section in km	Integer
Category of link	Category of link according to ECMT classes	Text string
Maximum draught of vessel	Maximum draught of a vessel on the waterway, in cm	Integer
Capacity	Maximum capacity of the link, in terms of the maximum level of container stacks possible	Integer
Volume of freight	Annual volume of freight on section, in tonnes	Integer
Number of containers	Annual number of containers on section, in TEU equivalents.	Integer
Traffic forecast, freight	Expected amount of freight per year	Integer
Traffic forecast, containers	Expected number of containers per year, in TEU equivalents	Integer
Forecast year	Year, for which the expected traffic amount is estimated	Integer, 2004-2050
Forecast source	Name of company or institution which has produced the traffic forecast	Text string

Section C describes the actual measure on the link, if any.

C. Measure		
Field name	**Description**	**Valid entries**
Element of infrastructure	Defines whether the measure is related to a link or a terminal. 0 = No measure 1 = Link 2 = Terminal	Integer, 0-2
Type of measure	Defines whether the measure is an upgrade of existing facilities (link or terminal) or a construction of new ones. 0 = No works 1 = Construction of new facilities 2 = Upgrading of existing facilities	Integer, 0-2
Type of measure on link	Specifies the type of upgrading of link: 1 = Widening 2 = Deepening 3 = Enlargement of locks 4 = Other improvements of locks 5 = Height under bridges 6 = River crossing 7 = Ship lift 8 = Water regulation	Integer, 0-8 Only relevant if the measure is related to a link, and the type is upgrading.
Other measure on link	Description of any other measure on a link than those mentioned above	Text string
Name of terminal	The name of the terminal which is the object of the measure	Text string. Only relevant if the measure is related to a terminal
Measure on terminal	Description of measure on a terminal	Text string
Traffic Management Systems	Measures related to Traffic Management Systems	Text string

Section D describes the link as it will look after the implementation of the measure.

D. Main technical characteristics of the link after the implementation of the measure		
Field name	**Description**	**Valid entries**
Category of link	Category of link according to ECMT classes	Text string
Maximum draught of vessel	Maximum draught of a vessel on the waterway, in cm	Integer
Capacity	Maximum capacity of the link, in terms of the maximum level of container stacks possible	Integer

Section E describes the implementation of the measure.

E. Project's Implementation Report		
Field name	**Description**	**Valid entries**
Reported in 1998	Indication of whether the project was planned in 1998	Y / N
Project Status	Current status of the project: P: Planning Stage S: Design Study Stage U: Under Construction C: Completed	Single character, (P / S / U / C)
Starting date	The year in which the project has started / will start	Integer, 1995-2015
Estimated completed date	The year in which the project will be finished	Integer, 1995-2020

Section F describes the financing of the measure.

F. Financing		
Field name	**Description**	**Valid entries**
Basis year	The year which is used for price level of the financial input	Integer, 1999-2020
Total costs	Total expected costs for the project, in EUR, excluding VAT and in price level of the year mentioned above	Integer
Amount from TEN-T commitments	Amount from TEN-T commitments for the actual project, in EUR	Integer
Amount from the Cohesion	Amount from the Cohesion	Integer

F. Financing		
Field name	**Description**	**Valid entries**
Fund	Fund for the actual project, in EUR	
Amount from the ERDF	Amount from the ERDF for the actual project, in EUR	Integer
EIB loans	Amount from EIB loans for the actual project, in EUR	Integer
Amount from other sources	Amount from other sources for the actual project, in EUR	Integer The sum of the various amounts must be equal to the total costs.
Specification of other sources	Description of other sources which have provided the amount mentioned above	Text string

4 Use of the database

The current version of the database is a single user database located on a personal computer. The SEETO is the operator of the database with the full responsibility for updating and maintaining the database and for providing reports to interested partners.

The use of the database is fairly simple and self-explaining. This chapter gives an introduction to the user interface, showing the routines for input and output and describing the possible reports.

The initial screen of the database is shown below:

Figure 4.1 Initial screen.

There are two basic functions: Edit or input of new data and creation of reports.

4.1 Edit or input of new data

It is possible to enter and edit data manually into the database, but the most feasible way is to transfer data from an Excel spreadsheet into the database.

The operator of the database is the only one who has access to entering data, and a manual input of data will only be relevant in exceptional cases. However, it is likely that the operator needs to edit a few data, which can be done manually via the input screen.

When the Edit or Input function is chosen, the screen in Figure 4.2 is shown.

Figure 4.2 Edit or input of new data.

Here the user must specify the relevant mode. It is only possible to input data for one mode. If the user has data for more than one mode, it is necessary to run the import routine one time for each mode.

After selecting the mode, the screen in Figure 4.3 will appear:

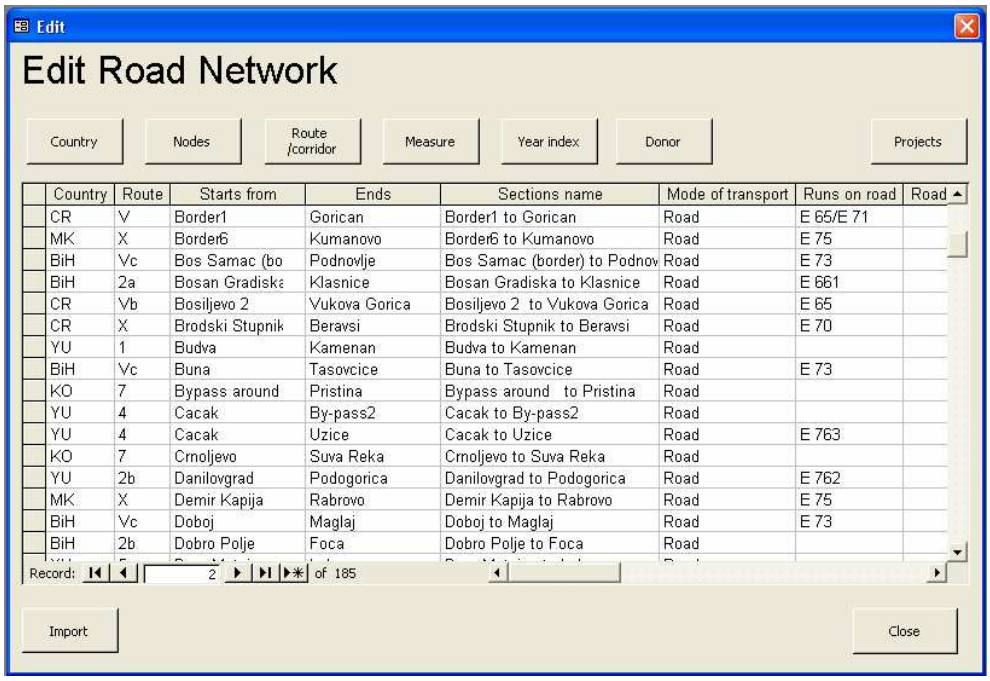


Figure 4.3 Initial screen for data editing.

4.1.1 Edit existing data

Here it is possible to edit the existing data or enter new data. All data are validated during the input, according to the rules described earlier. Thus, if a certain field requires an integer input, a string of characters will not be accepted.

As a further protection against typing errors, all names of countries, nodes, routes/corridors, measures, donors and year indices must be pre-defined by using the buttons on top of the screen. When entering for example the name of a node, the user will get a drop-down list of available node names.

In the example in Figure 4.4 below, the user wants to change the node Gorican, and by clicking on the field he gets a list of all available nodes.

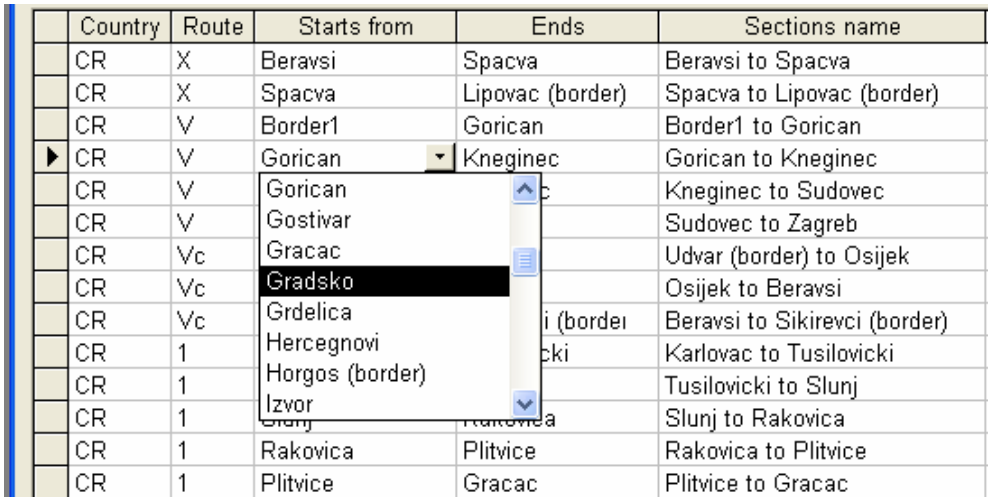


Figure 4.4 Example of drop-down list with node names.

If the user needs to specify a new node, it is necessary to define it in the following way: In the initial edit screen (Figure 4.3) the user clicks the button "Nodes", which leads to the following screen:

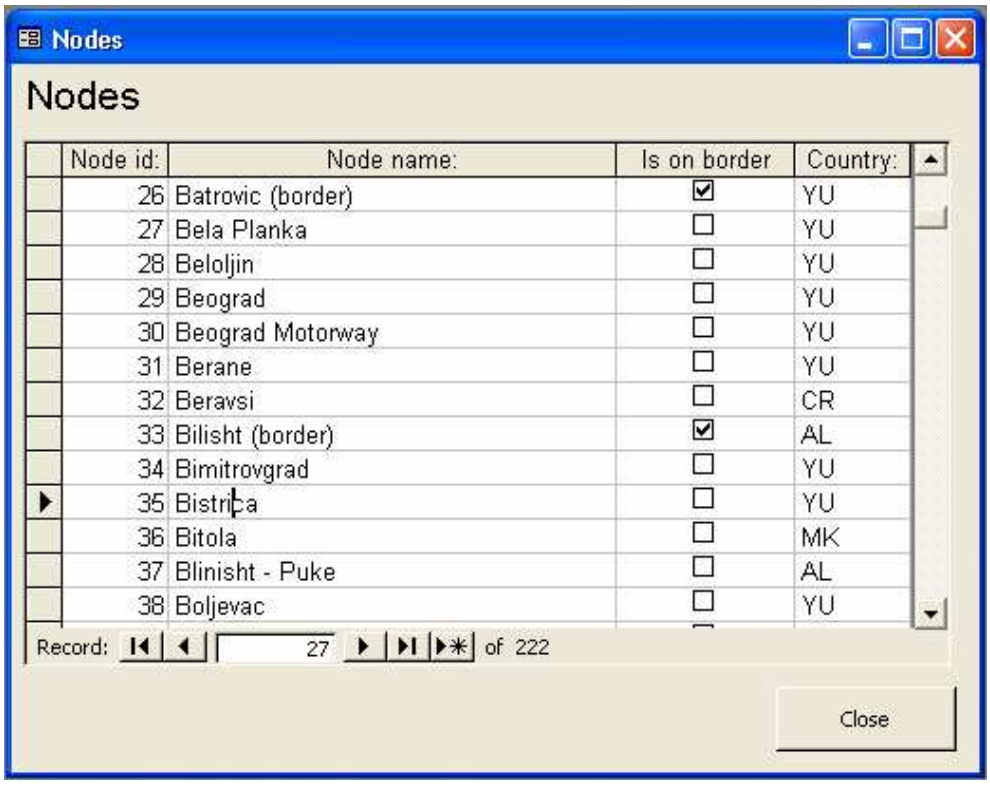


Figure 4.5 Specification of nodes.

Here it is possible to edit the name of existing nodes or to enter new nodes. When entering new nodes, the user must specify the country and indicate whether the node is located on a border. The node id is updated automatically.

New nodes are entered at the bottom of the list, which can be reached by scrolling down or by clicking the button with an arrow and an asterisk (▶✳).

After the update, the new node will appear in the drop-down list.

Names of countries, routes, measures and donors are updated in a similar way.

A special feature is the use of year indices. As all financial information is given in current prices, it is necessary to have a calculation tool for comparing the information. In Figure 4.3, when clicking on the button year index, the following screen will appear:

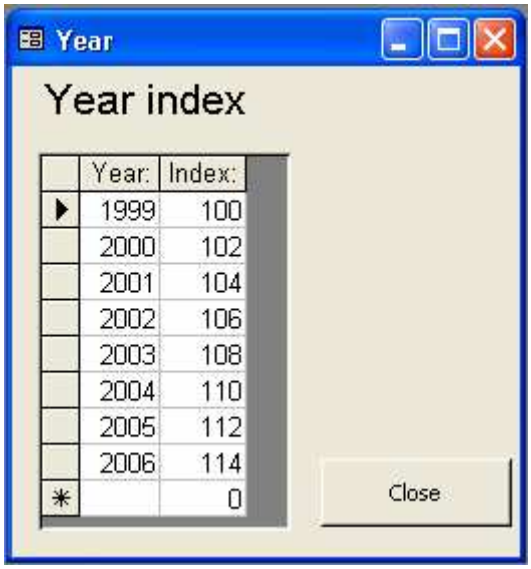


Figure 4.6 Year Index table.

The year indices express the financial development in the REBIS region. By default, the year 1999 is used as the basis year with index 100. The indices of the subsequent years express the economic growth. Obviously, the indices for the years 2000-2002 can be based on the actual growth, whereas the indices for the following years need to be based on forecasts. As new forecasts are being elaborated, it is advisable to update the year indices regularly.

The table with year indices is used for all modes. Thus, when editing the indices while working on one mode, it will have consequences for the other modes as well. The reason for this is that the indices express the general economic growth in the region. It would be possible to use mode-specific indices (or country-specific), but it would make the database more complicated to use, and it would require a thorough financial analysis to update the indices.

4.1.2 Input from a file

Input of data from an Excel spreadsheet is the most appropriate way of entering data. Data are put into a pre-defined spreadsheet, containing the same variables as the database in an organised set-up.

The data must be placed in the exact columns of the relevant variables in order to ensure a correct input to the database. Further, it is necessary that all lines contain data, which means that blank lines are not allowed. The database will validate the input data, rejecting any data of wrong type or with a value outside of the actual range.

The data can be imported in the initial screen for editing (Figure 4.3) by clicking the button "Import" in the bottom left corner, which leads to the following screen.

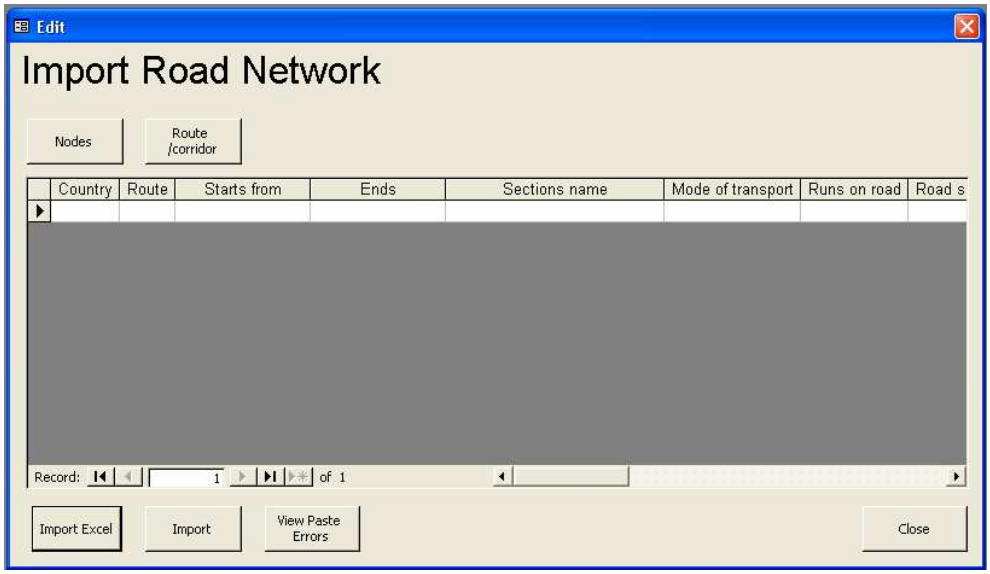


Figure 4.7 Import from a file.

Here it is possible to import data from an Excel spreadsheet by clicking the button "Import Excel", which will lead to a scroll down list for finding the correct file.

If any errors are found during the import, they will be highlighted on the screen in red colour. Then the user can either adjust the data manually or delete the record from the input.

The operator of the database will initiate an annual update by sending questionnaires to the relevant partners in the five countries. The questionnaires are sent in an electronic version together with an instruction note. The questionnaires must be filled in by the partners and returned to the operator before a fixed date. Then the operator will validate the data and enter them into the database.

In the update process, any existing data on the relevant links or nodes will be crossed out. This means that historic data are not stored in the database.

4.2 Output of data

The database provides a series of standard reports showing the status of the existing networks, the projects and the financing.

The initial screen for report data is shown below. Here the user needs to specify which mode is to be investigated. Reports can be created for one mode only. If the user wants data on two or more modes, he will have to create the reports one by one. The reason for this is that the reports summarize basic information on the network, which does not make sense, if more than one mode are analysed at the same time.

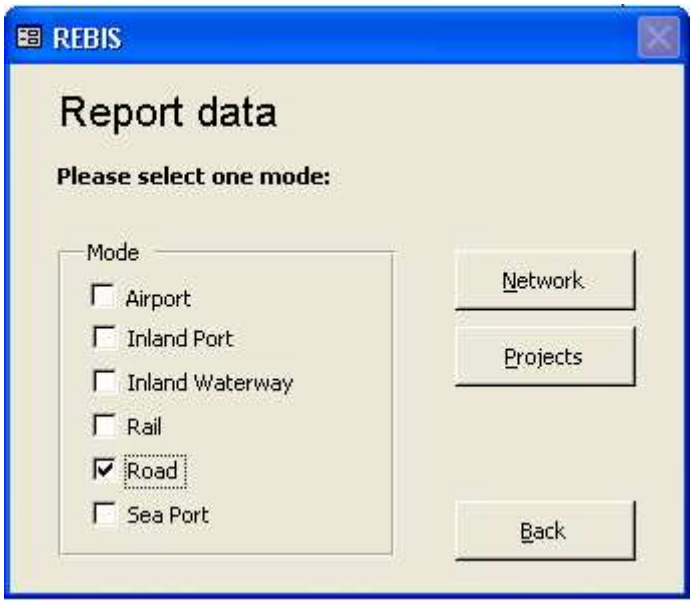


Figure 4.8 Report data, selection of mode.

After selecting the mode, the user needs to specify some key issues on the reports:

- **route no.:** Here the user can specify one or more (or all) routes to be investigated
- **country:** Here the user can choose any combination of countries to investigate
- **links / nodes:** Here the user can specify which links or node to include: All links or nodes, those with upgrading planned or those with plans of new construction

- **project stage:** Finally, the user can specify the relevant project stage. There are four pre-defined stages: Planning phase, design phase, construction phase or completion phase.

It is possible to choose any combination of the key issues. For example, one can look at road projects in Croatia and Albania, which involve construction of new links and which are in the design or construction phase.

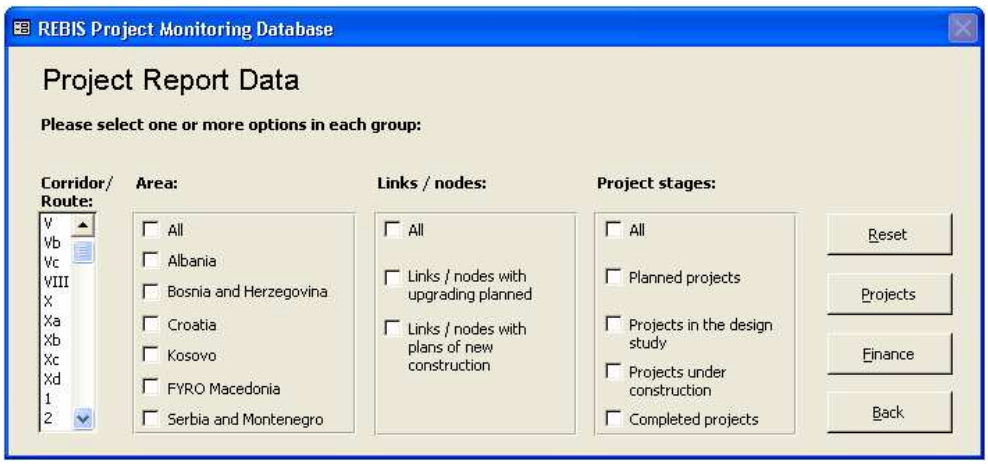
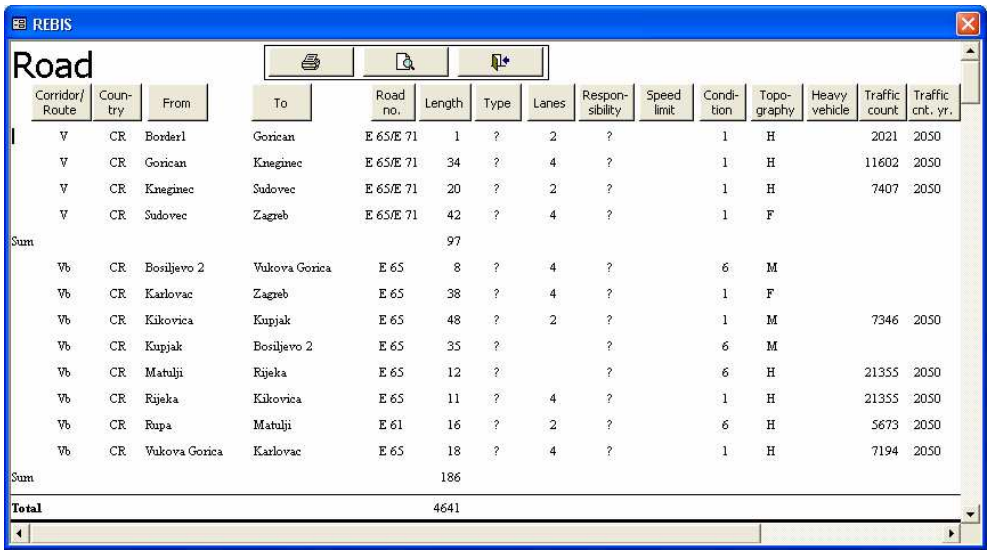


Figure 4.9 Report data, selection of area, type and stage of project.

Once the choices have been made, the user can click on "Projects" or "Finance", which will result in a report in screen format as shown below.


REBIS

Road

Corridor/ Route	Country	From	To	Road no.	Length	Type	Lanes	Responsibility	Speed limit	Condition	Topography	Heavy vehicle	Traffic count	Traffic cnt. yr.
V	CR	Border1	Gorican	E 65/E 71	1	?	2	?		1	H		2021	2050
V	CR	Gorican	Kneginec	E 65/E 71	34	?	4	?		1	H		11602	2050
V	CR	Kneginec	Sudovec	E 65/E 71	20	?	2	?		1	H		7407	2050
V	CR	Sudovec	Zagreb	E 65/E 71	42	?	4	?		1	F			
Sum					97									
Vb	CR	Bosiljevo 2	Vukova Gorica	E 65	8	?	4	?		6	M			
Vb	CR	Karlovac	Zagreb	E 65	38	?	4	?		1	F			
Vb	CR	Kikovica	Kupjak	E 65	48	?	2	?		1	M		7346	2050
Vb	CR	Kupjak	Bosiljevo 2	E 65	35	?		?		6	M			
Vb	CR	Matulji	Rijeka	E 65	12	?		?		6	H		21355	2050
Vb	CR	Rijeka	Kikovica	E 65	11	?	4	?		1	H		21355	2050
Vb	CR	Rupa	Matulji	E 61	16	?	2	?		6	H		5673	2050
Vb	CR	Vukova Gorica	Karlovac	E 65	18	?	4	?		1	H		7194	2050
Sum					186									
Total					4641									

Figure 4.10 Project report as it appears on the screen.

By using the buttons on top of the page the user can sort data according to any criteria he wants. Once data are sorted in the preferred way, the report can be printed in the proper format, which is shown below.

Road

Route	Coun-try	From	To	Road no.	Length	Type	Lanes	Respon-sibility	Speed limit	Condi-tion	Topo-graphy	Heavy vehicles	Traffic count	Traffic cnt. yr.	Traffic forecast	Foreca st year	Forecast source	Pro-ject
V	CR.	Bosiljevo 2	Gorican	E 65/E 71	1	?	2	?		1	H	2021	2030	3254	2030	Unknown	No
V	CR.	Gorican	Krapinac	E 65/E 71	34	?	4	?		1	H	11402	2030	18290	2030	Unknown	No
V	CR.	Krapinac	Sulovec	E 65/E 71	20	?	2	?		1	H	7407	2030	11739	2030	Unknown	No
V	CR.	Sulovec	Zagreb	E 65/E 71	42	?	4	?		1	F							No
Sum					97													
Vb	CR.	Bosiljevo 2	Vrbovec Gorica	E 65	8	?	4	?		4	M							No
Vb	CR.	Karlovac	Zagreb	E 65	38	?	4	?		1	F							No
Vb	CR.	Kikovica	Krapjak	E 65	48	?	2	?		1	M	7344	2030	11587	2030	Unknown	No
Vb	CR.	Krapjak	Bosiljevo 2	E 65	35	?		?		4	M							No
Vb	CR.	Matulji	Rijaka	E 65	12	?		?		4	H	21355	2030	33801	2030	Unknown	No
Vb	CR.	Rijaka	Kikovica	E 65	11	?	4	?		1	H	21355	2030	33801	2030	Unknown	No
Vb	CR.	Rupa	Matulji	E 61	14	?	2	?		4	H	5473	2030	8948	2030	Unknown	No
Vb	CR.	Vrbovec Gorica	Karlovac	E 65	18	?	4	?		1	H	7194	2030	11344	2030	Unknown	No
Sum					184													
Vc	BA	Bos. Samac (border)	Podnovlje	E 73	44	?	2	?		3	F	4084	2030	11339	2030	Unknown	No
Vc	BA	Buna	Jasenica	E 73	23	?	2	?		2	M							No
Vc	BA	Doboj	Maglaj	E 73	28	?	2	?		3	M							No
Vc	BA	Jablanica	Zaljina (Mostar)	E 73	37	?	1	?		3	M							No
Vc	BA	Konjic	Jablanica	E 73	25	?	2	?		3	M							No
Vc	BA	Maglaj	Zenica	E 73	72	?	2	?		2	M							No

3. juni 2003 Page 1 of 7

Figure 4.11 Project report as it appears on print.

This report can be printed on paper to be used for further reporting regarding the projects.

The SEETO can create reports on request by any relevant authority, such as ministries or transport authorities, or for example donors like EU and the World Bank.

In the long term perspective, there will be an Internet site, from which any user can extract reports from the database. It will be possible for the authorities to put in new data via the Internet site. Finally, there will be a GIS application, facilitating graphic presentations of the transport network, for example a map of the network with planned projects in one colour, projects under construction in another colour etc.