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TRANSPORT DATABASE AND INFORMATION SYSTEMS DEVELOPMENT

Status report on the Trans-European North-South Motorway (TEM) Project Database

Note by the secretariat

Note: This document is based on the Report provided by the Project Central Office (PCO) of the Trans-European North-South Motorway (TEM) Project about the progress made in the development of the database.

A. SYSTEM DEVELOPMENT

1. The data collection and processing activities of the TEM Project started from its outset in 1977. For many years, it has been limited to basic data on the status of the TEM motorway network and the TEM Corridor, consisting of existing road links to be replaced by the TEM motorways in the future.

2. In the framework of the expanded Project activities in the mid-eighties, the need arose to collect additional data on principal geometric parameters of these links and, therefore, two databases (TEMSTAT 1 and TEMSTAT 2) were established. TEMSTAT 1 reflects the status of the existing and future TEM motorway network, while TEMSTAT 2 presents the status of the national road system, fulfilling the function of missing connections as well as of the remaining E-road (AGR) and TINA links.

3. In these databases, the following data were stored at the TEM Project Central Office (PCO) in Warsaw up to the year 2005:

- motorway/road number (international/national)
- lengths of sections (in operation, under construction, planned)
- number of carriageways/lanes
- lane and shoulder widths
- maximum longitudinal gradient
- lengths within built-up areas
- lengths of road having design speed less than 60 km/h
- lengths of missing climbing lanes
- lengths of bridges with bearing capacity less than 60 T
- number of at-level railway crossings
- number of underpasses with clearance less than 4.5 m
- estimated travel times (cars, trucks)
- traffic volumes (AADT) according to the last census.(split into trucks, buses and other motor vehicles)

The data collection and processing is based on the uniform reference system, consisting of sections, subsections and portions of subsections.

4. Based on the decision of the TEM Steering Committee at its twenty-sixth session (25-27 November 1996, Geneva), the extended TEMSTAT data collection commenced in 1997. Data thus obtained are being processed and analysed by the Project Central Office in Warsaw. The twenty-eighth session of the Steering Committee (22-26 November 1997, Geneva) further decided that the TEMSTAT forms, together with the reference system, would be revised and

updated annually and that a special co-ordination meeting of experts responsible for data supply would be convened every year.

5. In accordance with this decision, the TEMSTAT Coordination and Training meetings were held in Istanbul, Turkey (25-27 March 1998), in Prague, Czech Republic (30 March-1 April 1998), in Vilnius, Lithuania (7-9 April 1999), in Budapest, Hungary on 17-19 April 2000, on 18-20 April 2001, on 8-9 April 2002 and on 19-21 May 2003 and in Prague on 18-19 March 2004 and on 7-8 March 2005. The last meeting was held on 16-17 March 2006 also in Prague, Czech Republic.

6. At these meetings, the problems related to the TEMSTAT data collection and processing, to the reference system and mapping were being discussed and clarified on a country-by-country basis.

7. As from 1999, data on the status of the network as of 1 January each year are communicated to the TEM PCO by contact persons from the 13 participating countries electronically. This information is also used to describe the annual status of the TEM network (see Annex 1).

8. As regards the TEMSTAT maps, the TEM PCO is in position to produce these basic types of maps in the ArcView format:

- maps showing the present status of the TEM corridor and main (AGR, TINA) road network in the TEM region;

- maps showing the existing (in operation) and future (under construction, in design stage, planned) motorway network in the chosen time horizons;

- maps showing the present or forecasted traffic flows in the chosen time horizons.

All these maps cover either the whole TEM region, separate member countries or selected areas (e.g. vicinity of a big city or industrial agglomeration).

9. As from the year 2000 annually, on the basis of the data transferred by the member countries, the separate TEMSTAT road/motorway infrastructure maps of all TEM member countries mostly on the scale 1:750000 were launched by the TEM PCO and made available to the member countries in hard and electronic copies. By integration of individual TEMSTAT country maps, the map of the whole TEM region is also being produced.

10. Furthermore, as from the end of 2002, the TEMSTAT data transferred electronically by the member countries and processed by the TEM PCO are being interactively linked to the TEM mapping system, making it possible to introduce the reported annual infrastructure changes to the respective maps automatically and thus having transformed the TEMSTAT mapping system to the full-fledged GIS one.

11. In accordance with the TEM Programme of Work for the years 2001-2004, constituting an integral part of the TEM Co-operation Trust Fund Agreement, the elaboration of the TEM Master Plan commenced in October 2003. This activity was also included in the Short-term

Strategy for Further Integration of TEM in New European Transport Environment, approved by the Steering Committee at its thirty-sixth session held in Geneva on 4-6 December 2001, representing one of its most important outcomes.

12. The draft TEM Master Plan document covering 13 TEM member countries and 8 non TEM countries was finished and its findings and conclusions were submitted to the forty-third TEM Steering Committee session held on 13-15 June 2005 in Vienna for examination and decision on further steps to be taken. Following a detailed discussion, the presented draft Master Plan report was endorsed. The most important outputs of this document represent the evaluation and prioritization of 319 TEM Master Plan projects based on multi-criteria methodology valued at approximately 50 billion Euro. The final TEM Master Plan report was launched in September 2005.

13. Among other major achievements of the TEM Master Plan include the proposal of a wider TEM Master Plan Backbone Network, inventory of border crossing problems with recommendations for ameliorative actions as well as specific truck and coach transport infrastructure considerations, accompanied by the set of 30 maps, some of them covering all the 21 countries involved.

14. The TEM Steering Committee, at its forty-fourth session which took place in Geneva on 5-7 December 2005, approved a list of TEM Master Plan follow-up actions for year 2006 focused on its implementation.

15. The elaboration and implementation of the TEM Master Plan resulted in the need of additional data collection necessary for priority projects' identification and evaluation in line with the approved evaluation methodology, elaborated by the external consultants that is apparent from the attached tables (Annexes 2-4).

Annex 1

STATUS OF TEM NETWORK (as of 1.01.2005)

COUNTRY	Total length	PROGRAMMED (in study, preliminary design and design phases)		UNDER CONSTRUCTION		IN OPERATION		COMPARATIVE INDICATORS		
	km	one carriageway	both carriageways	one carriageway	both carriageways	one carriageway	both carriageways	% of total TEM length	CONSTRUCTION PROGRESS (% of length under construction)	DEGREE OF COMPLETION (% of length in operation)
Column No.	1	2	3	4	5	6	7	8	9	10
AUSTRIA	485	-	-	35	22	35	428	2.1	8.1	91.9
BOSNIA and HERZEGOVINA	331	-	319	-	-	-	12	1.4	-	3.6
BULGARIA	925	-	617	-	15	19	274	4.0	1.6	30.7
CROATIA	1,465	31	508	6	161	88	742	6.3	11.2	53.7
CZECH REPUBLIC	987	-	359	26	85	-	543	4.2	9.9	55.0
GEORGIA	1,053	-	1045	-	-	-	8	4.5	-	0.8
HUNGARY	1,658	638	276	15	101	67	522	7.1	6.6	33.5
ITALY	1,519	-	-	-	4	-	1515	6.5	0.3	99.7
LITHUANIA	731	204	12	-	-	254	466	3.1	-	81.1
POLAND	3317	312	2178	-	135	86	607	14.2	4.1	19.6
ROMANIA	3026	-	2631	-	202	-	201	13.0	6.7	6.6
SLOVAKIA	932	-	527	3	45	577	355	4.0	5.0	69.1
TURKEY	6,896	-	378	-	293	3,659	2,566	29.6	4.2	63.7
TOTAL	**23,325**	**1,185**	**8,850**	**85**	**1,063**	**4,785**	**8,239**	**100.00**	**4.7**	**45.6**

TEMSTAT 1 Rev.

Annex 2

STATUS OF THE TEM NETWORK (Existing and Programmed)

COUNTRY: ……..

DATE: …….

SECTION	SUBSECTION AND PORTION OF SUBSECTION	E ROAD NUMBER	NATIONAL MOTORWAY/EXPRESSWAY NUMBER	PART OF TEM MASTER PLAN BACKBONE NETWORK	RELATED MASTER PLAN PROJECT		FROM	TO	ROAD TYPE (PRESENT/FUTURE)	LENGTH IN KM	NUMBER OF LANES (PRESENT/FUTURE)	IN OPERATION (KM)		UNDER CONSTRUCTION (KM)		PROGRAMMED (KM) (PLANNED OR DESIGNED)		YEAR OF START/YEAR OF COMPLETION	TOLL COLLECTION TYPE	AADT VOLUME IN 2005	PERCENTAGE OF TRUCKS AND BUSES IN 2005	AADT VOLUME IN 2010	PERCENTAGE OF TRUCKS AND BUSES IN 2010	AADT VOLUME IN 2015	PERCENTAGE OF TRUCKS AND BUSES IN 2015	AADT VOLUME IN 2020	PERCENTAGE OF TRUCKS AND BUSES IN 2020	ESTIMATED CONSTRUCTION COSTS (MILL.EURO)	PROJECT FUNDING (SECURED/INSECURED)	FUNDING SOURCE
					PROJECT ID	PRIORITY CATEGORY/CLASS						ONE CARRIAGEWAY	TWO OR MORE CARRIAGEWAYS	ONE CARRIAGEWAY	TWO OR MORE CARRIAGEWAYS	ONE CARRIAGEWAY	TWO OR MORE CARRIAGEWAYS														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

TEMSTAT 2 Rev.

Annex 3

STATUS OF NON-MOTORWAY (NON-EXPRESSWAY) SECTIONS OF E - NETWORK

COUNTRY: …….. DATE:…….. PAGE:……..

SECTION	SUBSECTION AND PORTION OF SUBSECTION	E ROAD NUMBER	NATIONAL ROAD NUMBER	PART OF TEM MASTER PLAN BACKBONE NETWORK	RELATED MASTER PLAN PROJECT		FROM	TO	LENGTH IN (KM)	NUMBER OF LANES (PRESENT/FUTURE)	LANE WIDTH (M))	HARD SHOULDER WIDTH (M)	MAX. LONGITUDINAL GRADIENT (%)	LENGTH OF ROAD WITHIN BUILT-UP AREAS (KM)	LENGTH OF ROAD HAVING DESIGN SPEED LESS THAN 60KM/H (KM)	LENGTH OF MISSING CLIMBING LANES (KM)	NUMBER OF BRIDGES WITH BEARING CAPACITY LESS THAN 60T	NUMBER OF AT-LEVEL RAILWAY CROSSINGS	NUMBER OF UNDERPASSES WITH VERTICAL CLEARANCE LESS THAN 4,5 M	AADT VOLUME IN 2005	PERCENTAGE OF TRUCKS AND BUSES IN 2005	AADT VOLUME IN 2010	PERCENTAGE OF TRUCKS AND BUSES IN 2010	AADT VOLUME IN 2015	PERCENTAGE OF TRUCKS AND BUSES IN 2015	AADT VOLUME IN 2020	PERCENTAGE OF TRUCKS AND BUSES IN 2020	CONSTRUCTION COSTS OF RELATED MASTER PLAN PROJECT (MILL.EURO)	FUNDING OF RELATED MASTER PLAN PROJECT (SECURED/INSECURED)	FUNDING SOURCE OF RELATED MASTER PLAN PROJECT
					PROJECT ID	PRIORITY CATEGORY/CLASS																									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Annex 4

DRAFT UNIFORM QUESTIONNAIRE FOR TEM MASTER PLAN IMPLEMENTATION MONITORING
(to be used for Master Plan projects of the first 3 priority classes only)

Country: ……. Year: ……

No.	Type	Criterion	Data	Note
1	Project identification	Project Master Plan ID [1]		
2		Master Plan priority (category/class)	/	
3		TEM portion of subsection No. [2]		
4		E road number [3]		
5		Project identification (from/to) [4]	/	
6		Network position [5]		
7	Project description	Road type (present/future) [6]	/	
8		Nature of project [7]		
9		Project stage [8]		
10		Toll collection type [9]		
11		Project length in km		
12		No. of lanes (present/future) [10]	/	
13		Year of (start/completion) [11] (MP/actual) [12]	/	
14	Traffic volumes	AADT in 2005 (MP/2005 census) [13]	/	
15		% of trucks and buses 2005 (MP/census) [13]	/	
16		AADT in 2010 (MP/2010 forecast) [14]	/	
17		% of trucks and buses 2010 (MP/forecast) [14]	/	
18		AADT in 2015 (MP/2015 forecast) [14]	/	
19		% of trucks and buses 2015 (MP/forecast) [14]	/	
20		AADT in 2020 (MP/2020 forecast) [14]	/	

[1] For new project (not included in Master Plan), instead of this Questionnaire, Master Plan TEMPLATE 2A (Road and related infrastructure Project Fiche) has to be used;

[2] For projects not located on the TEM network, "data" box remains void;

[3] For projects not located on the AGR (E-road) network, "data" box remains void;

[4] Could be replaced by another type of description, e.g. "bypass of ……";

[5] Please indicate whether the project is located on one or more of these networks: TEM, TEN-T, BB =Master Plan backbone, MA=High Level Group multimodal axes;

[6] Highway, expressway (controlled access) or motorway;

[7] New construction, reconstruction, upgrading or repavement;

[8] Planning, study, design or construction;

[9] Electronic solely, combined (manual + electronic), manual solely, vignette or none;

[10] Please indicate dual carriageway by inserting "x" between separated lanes;

[11] If completion year differs from the year of putting into operation, please indicate the latter year (operation);

[12] MP=Master Plan;

[13] Master Plan 2005 forecast/results of 2005 census (if the latter is not available, indicate MP forecast data only);

[14] Master Plan forecast/recent national forecast;

21		% of trucks and buses 2020 (MP/forecast) [14]	/	
22	Fundung & Economy	IRR (%) (MP/actual) [15]	/	
23		Total project cost (mill.euro) (MP/actual) [12]	/	
24		Total construction cost (mill.euro) (MP/actual)	/	
25		Project funding - % secured (MP/actual) [12]	/	
26		Project funding - % yet insecured (MP/actual)	/	
27		Funding source(s) [16]		

[15] Internal Rate of Return (if not available, insert the best estimate and indicate “actual estimate” in the “Note” box;

[16] NT=national budget, BK=bank loan, GR=grant, PR=private, TL=toll revenue.