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TRANSPORT DATABASE AND INFORMATION SYSTEMS DEVELOPMENT

TEM Database and Corridor Mapping

Transmitted by TEM PCO

A. SYSTEM DEVELOPMENT

1. In the framework of the TEM Project, the data collection and processing 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 connection with the Programme of Upgrading the Corridor links, launched in the mid-eighties, the need arose to collect additional data on principal geometric parameters of these links. From this time on, the following data has been stored in the TEM Project Central Office (PCO) in Warsaw:
 - 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.
3. At the same time, the first reference system of the TEM Corridor, consisting of sections, subsections and portions of subsections was introduced.
 4. In 1995, the decision to extend and restructure basically this TEM original database was taken. In accordance with the main objectives of the TEM Project, two TEM databases (TEMSTAT 1 and TEMSTAT 2) have been established. TEMSTAT 1 reflects the status of existing and future TEM motorway network, while TEMSTAT 2 presents the status of the national road system, fulfilling the function of missing connections.
 5. The original reference system was also upgraded and extended to the whole E-road (AGR) network in the member countries. An advanced uniform reference system with the arrangement of links based on the AGR numbering was introduced at the same time.
 6. On the basis of the decision of the twenty-sixth session of the Steering Committee (25-27 November, 1996, Geneva), the TEMSTAT data collection commenced in 1997. Data thus obtained were processed and analysed by the PCO. Taking into account the results of this analysis, the twenty-eighth session of the Steering Committee (22 – 26 November 1997, Geneva) decided that the TEMSTAT forms together with the reference system would be revised and updated annually and that a special training and co-ordination meeting of experts responsible for data supply would be convened.
 7. In accordance with this decision, the TEMSTAT Coordination and Training meetings were held in Istanbul, Turkey (25 – 27 March 1998), in Prague, the Czech Republic (30 March – 1 April, 1998), in Vilnius, Lithuania (7 – 9 April 1999) and in Budapest, Hungary on 17 - 19 April 2000 and on 18 – 20 April 2001.
 8. On 5 June 1998, the Co-operation Agreement had been signed between the UNECE TEM Project and WTB TINA (Transport Infrastructure Needs Assessment) Secretariat in Vienna, according to which the TEM PCO delivered the data on the TEM network and the AGR network, specified in Annex 2 to the Agreement. The TINA Secretariat allocated to the UNECE TEM Project a financial grant for implementing these tasks, which was used for co-financing of the above coordination and training meetings.

B. SYSTEM DESCRIPTION.

9. The examples of the TEMSTAT 1 and 2 data collection forms are attached to this report as its Annexes 1 and 2. Data, describing the status of the network as of 1 January each year, are communicated to the TEM Project Central Office in Warsaw by contact persons from the 13 participating countries and from Slovenia electronically (as from 1999).
10. To facilitate and guarantee the uniformity of data collection, processing and reporting, the instructions for entering the forms were elaborated and distributed in 1997.

11. The traffic data reported relate always to the last year's volumes and to the neighbouring 5-year periods, thus making it possible to create fresh time series each year for the purposes of traffic forecasting.

C. TEM GIS MAPPING

12. The maps of the TEM network produced in the past have been of a general nature, showing the status of the motorway system in the TEM region and its interlinkages with the European Union's TERN network, Pan-European Transport Corridors and the TINA (Transport Infrastructure Needs Assessment) network. The maps and related problems were described in the documents TEM/WP.158 of 20 October 1998 and TEM/WP.173 of 1 December 1999.
13. With the introduction of new hardware and mounting of the ArcView 3.1 software in the TEM Project Central Office in Warsaw in 1999, the possibilities of creating maps have been substantially extended.
14. In general, three basic types of maps are taken into consideration:
 - maps showing the present status of the TEM corridor and main 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 can cover either the whole TEM region, separate member countries or selected areas (e.g. vicinity of a big city or industrial agglomeration).

15. The detailed data on the status of each section of the TEM motorway network and the TEM corridor (existing road links to be replaced by a motorway in the future), being collected in the framework of the TEMSTAT 1 and TEMSTAT 2 activities together with the reference system introduced, make it possible to produce all these three types of maps in a sufficiently detailed way.
16. On the basis of the data transferred by the member countries, the TEM Project Central Office elaborated separate draft network maps of all member countries mostly in the scale 1:750000. These country maps both in hard and electronic (diskette) copies were handed over to the representatives of all member countries and returned to the TEM Project Central Office corrected by 31 July 2001. The final TEMSTAT network country maps will be submitted to the thirty-sixth session of the TEM Steering Committee to be held in December 2001 at Geneva for examination.
17. By integration of individual TEMSTAT country maps, the map of the whole TEM region can be produced, the PowerPoint example of which would be displayed at the session.
18. In 2002, the TEMSTAT data processed by the TEM Project Central Office will be interactively linked to the TEM mapping system, thus making it possible to introduce the reported annual infrastructure changes to the respective maps automatically.

19. The mapping software mounted in the Project Central Office will be also exploited to create the TEM Master Plan maps, representing the part of the new Project Short-term Development Strategy, approved by the thirty-fifth session of the Steering Committee held on 30 May – 1 June this year in Trieste, Italy.

 20. Moreover, in the course of the last TEMSTAT Coordination and Training Meeting held on 18 – 20 April this year in Budapest, Hungary, the TEM experts together with the members of the WERD (Western European Road Directors) Subgroup on TERN (Trans-European Road Network) of the European Union examined the possibilities of establishment of the general concept of data collection for TERN and TEM networks and exchanged information about the present state of development of the respective reference systems.
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TEMSTAT1

STATUS OF THE TEM NETWORK (Existing and Programmed)

COUNTRY: CZECH REPUBLIC

DATE: brezen 2001

PAGE: 1

SECTION	SUBSECTION	PORTION OF SUBSECTION	E ROAD NUMBER	NATIONAL MOTORWAY / EXPRESSWAY NUMBER	FROM:	TO:	PRESENT CATEGORY	FUTURE CATEGORY	LENGTH in KM	PRESENT NUMBER OF LANES	FUTURE NUMBER OF LANES	ONE CARRIAGEWAY IN OPERATION (KM)	TWO OR MORE CARRIAGEWAYS IN OPERATION (KM)	ONE CARRIAGEWAY UNDER CONSTRUCTION (KM)	TWO OR MORE CARRIAGEWAYS UNDER CONSTRUCTION (KM)	ONE CARRIAGEWAY PROGRAMMED (KM)	TWO OR MORE CARRIAGEWAYS PROGRAMMED (KM)	ESTIMATED YEAR OF COMPLETION	MODE OF PAYMENT	TRAFFIC VOLUME 1990	TRAFFIC VOLUME 1995	TRAFFIC VOLUME 2000	TRAFFIC FORECAST VOLUME ?	OBSERVATIONS
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
CZ 01	01	01	50	D5	Rozvadov (D/CZ)	Plzen West Sulkov	M	M	62	2x2	2x2	-	62	-	-	-	-	-	V	-	-	-	x)	x)
CZ 01	02	01	50	D5	Plzen West Sulkov	Plzen South (E53 junction)	-	M	8	-	2x2	-	-	-	8	-	-	2005	-	-	-	-	-	
CZ 01	02	02	50	D5	Plzen South (E53 junction)	Plzen South East (E49 junction)	-	M	4	-	2x2	-	-	-	-	-	4	2005	-	-	-	-	-	
CZ 01	03	01	50	D5	Plzen South East (E49 junction)	Plzen East Ejpovice	-	M	8	-	2x2	-	-	-	-	-	8	2005	-	-	-	-	-	
CZ 01	04	01	50	D5	Plzen East Ejpovice	Zdice	M	M	40	2x2	2x2	-	40	-	-	-	-	-	V	-	-	-	-	
CZ 01	05	01	50	D5	Zdice	Praha (Ring Expressway)	M	M	28	2x2	2x2	-	28	-	-	-	-	-	V	12,580	17,290	-	x)	

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

COUNTRY: BOSNIA HERZEGOVINA

DATE: September 1998

PAGE: 1

SECTION	SUBSECTION	PORTION OF SUBSECTION	E ROAD NUMBER	NATIONAL ROAD NUMBER	TEM NETWORK (CORRIDOR) LINK	FROM:	TO:	LENGTH in KM	NUMBER OF LANES	LANE WIDTH in M	HARD SHOULDER WIDTH in M	MAX. LONGITUD. GRADIENT in %	Estimated travel time - car (in minutes)	Estimated travel time - truck (in minutes)	Length of Road within Built-up Areas (in km)	Length of Road Having Design Speed < 60 km/h (in km)	Length of Missing Climbing Lanes (in km)	Number of Bridges with Bearing Capacity < 60 t	Number of at-level railway crossings	Number of Underpasses with Vertical Clearance < 4,5 m	TRAFFIC VOLUME 1990	TRAFFIC VOLUME 1995	LAST YEAR TRAFFIC VOLUME	TRAFFIC FORECAST VOLUME 2000	OBSERVATIONS
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
BH 01	01	01	65	2	Y	Neum (HR/ BIH)	Neum (BIH / HR)	9,9	2	3,5	2,5	4	7	10	1,0									5 500	
BH 02	01	01	59	5	Y	Izacic (HR / BIH)	Bihac (E761 junction)	14	2	3,5		6	12	14	0,5	2,0								6 000	
BH 02	02	01	59	11	Y	Bihac	BIH / HR border	17	2	3,0		6	14	20	1,0									6 000	
BH 03	01	01	73	17	Y	Bos. Samac (HR/BIH)	Doboј	66	2	3,5	2,5	4	44	57	5,0									18 000	
BH 03	02	01	73	17	Y	Doboј	Zenica (E661 junction)	77	2	3,5	2,5	3	58	77	0,5									16 000	