

EUROPEAN UNION - TACIS

**Technical Assistance to the Southern Republics of the CIS
and Georgia - TRACECA**

TRADE AND TRANSPORT SECTORS

IMPLEMENTATION OF PAVEMENT MANAGEMENT SYSTEMS

PROJECT NO.: TELREG 9305

INCEPTION REPORT

February 1996

**KOCKS CONSULT GMBH
Consulting Engineers
Koblenz/Germany**

in association with

**TECNECON
Economic and Transport
Consultants/U. K.**

**PHØNIX
Pavement Consultants
DENMARK**

PROJECT SYNOPSIS

Project Title	:	Traceca Project - Implementation of Pavement Management Systems
Project Number	:	TELREG 9305
Country	:	The Southern Republics of the CIS and Georgia

Project objective[s] : The project aims to introduce Regional roads maintenance authorities to the latest Western pavement management techniques. It is to promote a reduction in road maintenance backlogs. The focus of this project will be on international transit routes with the specific objectives under the three main headings.

Technical

- Establishment of database
 - road and bridge conditions
 - traffic intensity/axle-loadings
 - forecasts of future traffic
- Formulation, testing and refining technical pavement maintenance strategies. Establishment of Pavement Management Systems in each Regional state
- Implementation of local authorities in Western road and bridge maintenance techniques and specifications as well as road safety standards
- Review of roads design standards

Economic

Expand the resources available for road maintenance by:

- demonstrating the real costs of road utilization, by users who at present pay little, and thus reinforce arguments for recurrent collections of revenue by charges (taxes) on users
- Description and economic analysis of road maintenance projects and programmes susceptible to attract IFI interest.

Transfer of Technology

Local personnel will be involved in all project tasks and trained in the techniques introduced with the aim to continue the activities after completion of the project.

Planned outputs :

Project activities : Project Preparation, co-ordinating meetings, with TRACECA, CU, Brussels, and recipient institutions in Almaty and Tashkent. Project commencement preparation with recipient institutions in Turkmenistan.

Target group[s] : --

Project starting date: 20 December 1995, delayed to 12 March 1996 due to winter conditions
Project duration : 12 months

Project Title	:	Traceca Project - Implementation of Pavement Management Systems	
Project Number	:	TELREG 9305	
Country	:	The Southern Republics of the CIS and Georgia	
		Local operator	EC Consultant
Name	:	Ministry of Transport and Communication, Department of Highways, Kazakhstan	KOCKS CONSULT GMBH
Address	:	86 Gogol Street Almaty, 480091 Kazakhstan	Stegemannstraße 32 - 38 56068 Koblenz Germany
Tel. number	:	(3272) 324769	xx49 - 261 - 1302-0 (operator) xx49 - 261 - 1302-143 (direct)
Fax number	:	1. (3272) 325361	xx49 - 261 - 1302 - 152
Telex number	:	--	862807
Contact person	:	Sergey L. Larichev	Werner P. Weiler
Signatures	:		

		Local operator	
Name	:	Concern UZAVTOYUL, Uzbekistan	
Address	:	68 'a' Pushkin Street 700000 Tashkent Uzbekistan	
Tel. number	:	68-25-26 and 36-15-95	
Fax number	:	68-27-11	
Telex number	:	--	
Contact person	:	Vohid Normatovich Azamov	
Signatures	:		

		Local operator
Name	:	Concern Turkmenautoellari, Turkmenistan
Address	:	744000 Ashgabat Turkmenistan
Tel. number	:	(3632) 245487
Fax number	:	(3632) 255379 and 511678
Telex number	:	--
Contact person	:	Vladimir Volodin
Signatures	:	

		Local operator
Name	:	We have requested the TACIS Coordinating Unit in Georgia, Armenia,
Address	:	Azerbaijan, Tadjikistan and Kyrgistan to identify the local operator.
Tel. number	:	As soon as they are identified, we will contact the local operator for
Fax number	:	commencement.
Telex number	:	
Contact person	:	
Signatures	:	

Date of report : 29 February 1996
Reporting period : 21.12.1995 to 15.02.1996
Author of report: W. P. Weiler, Project Manager (Kocks Consult GmbH)

EC Co-ordinating unit (name)(signature)(date)
EC Delegation (name)(signature)(date)
TACIS Bureau (Task (name)(signature)(date)

1. Background

Under the terms of the contract, the Consultant shall commence the implementation of the tasks within two weeks from the effective date of the contract. The effective date of the contract is 7 December 1995. A project inception report shall be issued within two months of the commencement of the project, e. g. not later than 20 February 1996.

The inception report will summarize initial findings and propose modifications to the methodology and work plan. In particular it is aimed to adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of efforts, and addressing unstilled needs.

2. The Situation

The cold winter weather in the southern CIS states has effectively prevented the commencement of the services. Even Uzbekistan and Turkmenistan, the low elevation southernmost countries have had extended periods of frost and snow, Kazakhstan is also extremely cold still, and so are the mountainous countries. For the purposes of this project, the roads are required to be inspected, condition surveys and inventories need to be taken, and measurements by deflection of the road surface by Falling Weight Deflectometer are required to establish the residual pavement life. For this tasks, the road surface needs to be free of snow and ice, and there must not be any frost in the ground. Deflection measurements can effectively be carried out when grounds temperatures are above + 5°C. On the other hand, the road inventories and deflection measurements are key activities, which need to be done prior to other services (data entry, assessment, maintenance strategies, pricing, evaluation). This effectively prevents the services to commence until winter conditions are over.

3. The Preparations for Commencement

Following the commencement meeting on 05.12.1995 with the TACIS CU in Brussels, the consultancy partners met on 12.12.1995 at Koblenz, to plan and coordinate the project commencement. It was decided to prepare the following:

- Personnel planning
- Contacting the recipient countries' project representatives (RCPR) for
 - introduction
 - information on commencement
 - reporting the required counterpart input, personnel and logistics
 - proposing to prepare all administrative arrangements for installation of the PMS/BMS unit, and for sustainable operation (budget, logistics, etc.)
 - informing the RCPRs about information and data required, and timing of availability
 - commencement planning

A listing of the requests to the RCPRs in Turkmenistan, Uzbekistan and Kazakhstan is attached.

The TACIS offices in the aforementioned states were requested to issue letters of invitation for the project personnel for the purpose of obtaining visas. The invitation letters are received.

4. Consultants Personnel

Due to personal reasons Dr. Waldemar Meier is not available to work in the CIS states. Resulting from a recruitment drive (12 candidates) we propose Mr. Johann Rogalski as engineering coordinator. He is proposed to contribute his roads engineering expertise from his education in the former USSR, and to translate the western technology to the local counterparts. Mr. Rogalski will be guided by Mr. Ulrich Willems, the team leader, and other team members.

5. Consultant's Project Manager's Visit to the Project Area

From 05.02.1996 to 10.02.1996 the project manager visited the RCPR in Almaty and Tashkent for introduction, time planning and project preparation. The RCPR in Ashgabat was also contacted and was informed about the commencement planning. The response was favorable to the project. Lists of the pre-requisites were sent to the RCPRs as attached.

For the purpose of determination of the actual commencement date, and for preliminary information on the condition of the road Almaty - Bishkek - Tashkent the road was inspected on 06.02.1996 by the Consultant's Project Manager. The road was under snow and ice, and only shorter sections of pavement could be seen. The preliminary information will be used in locating the pilot sections.

It is very important that also the socio-economic data are available at the time of commencement. From experience, road data are accessible from within the RCPC's Ministry/Institutions, whereas socio-economic data are under the aegis of other Ministries. It is therefore requested that a letter of introduction and recommendation is issued from the highest possible authority at the time of commencement of the services to the Consultant's staff for granting access to the socio-economic data. We have experienced considerable administrative delay (up to 6 weeks) on a similar assignment, before such letters materialized, and without such letters the relevant data were not accessible to the Consultants.

6. Equipment

Equipment as follows is required:

- (a) One Falling Weight Deflectometer (in possession of Phønix, partner to the consultancy association). This equipment will be bought by the project.
- (b) One axle weight bridge (in possession of Phønix), will be bought by the project, incl. additional dunning pads for weighing up to triple axle lorries).

- (c) Computers, printers, etc. The specification is attached. We propose to buy the hardware in the recipient states (or neighboring states where such hardware is not available in the recipient state), for reasons of service and updating. We request exemptions from the requirement to tender for the supplies. It is considered not practical to tender in the recipient states, as such procedures stipulated in the EU Procurement Guidelines for Supply Tenders are unknown in the CIS, and would not be fulfilled, also due to inavailability of bank guarantees, etc.
- (d) Software: The PMS is owned by Phønix and will be bought by the project.
- (e) Bump Integrator: It is in possession of KOCKS CONSULT, and will be bought by the project.
- (f) Tripmeter: It is also in the possession of KOCKS, and will be bought by the project.
- (g) Small measuring device, office equipment incl. fax machine: Will be bought without tender procedure.
- (h) The consultancy agreement provides for 'vehicle hire'. It would be favorable to the recipient countries if 2 vehicles can be bought, used and handed over to the recipient countries at the end of the project. We request exemption from the rules for tendering for buying 2 saloon type cars in the recipient countries.

7. Planned Commencement

The commencement of services in the recipient countries is planned with the departure of the team leader, the engineering coordinator, and the transport economist on 12.03.1996. The PMS project engineer will follow on 19.03.1996, and the FWD engineer will follow on 26.03.1996. Other personnel will follow on request of the team leader, when he has confirmed that data and information is available as requested, and that the local PMS unit has been established. Our equipment will be shipped to Tashkent. We will commence the services in Turkmenistan and in Tashkent, and will commence in Kasakhstan and Kyrgyzstan soon after, when the climate is favorable. Other countries will soon be contacted by the Project Manager for commencement planning.

Economic Contribution

8. Background Economic Data

The Consultants are in the process of obtaining relevant background economic data on the TRACECA countries. The main sources for such data are the World Bank, the International Monetary Fund and the European Bank for Reconstruction and Development and a number of studies produced by these organizations have been or are being obtained for use in the Project. The main use for such data will be as background material for the production of generalized traffic forecasts.

9. Traffic Estimates

Estimates of base year road traffic by vehicle type in each of the study countries are required for two purposes:

- to provide a basis for the detailed engineering and economic analyses to be undertaken as part of the pavement management studies on each of the sample road sections and
- to provide information on traffic levels by vehicle type over the whole road network for use in the road user charges studies in each country

In view of the extremely limited study time being made available in each country for studies of this type, particularly road user charge studies, it is of the utmost importance that the maximum available traffic information be made available to the Consultants at the commencement of the study. This traffic data could include the results of routine and ad hoc traffic surveys conducted by the highway agencies in recent years as well as surveys carried out as part of other consultancy studies. The availability of this data at the commencement of the study will enable the Consultants to make a rapid initial assessment of the scope of the traffic surveys required to fill gaps in the information base.

The traffic data required is classified volume count data which should, ideally, show daily traffic on given road sections broken down by vehicle type. The analyses required for this study will use the following vehicle categories:

- passenger cars
- light utility vehicles, minibuses, vans and small trucks
- large buses
- 2-axle trucks
- 3-axle trucks
- 4 or more axle trucks

Where the available traffic count data does not provide this type of vehicle breakdown, an adjusted breakdown will be made based on the results of the traffic surveys to be undertaken and on the results of moving observer counts carried out by the Consultants.

It is not proposed to repeat the traffic studies which were carried out by the Consultant in Armenia and Turkmenistan in 1994 and 1995 respectively. It is also hoped to be able to obtain via TACIS the results of the study carried out for it in Azerbaijan in 1995 by consultants Wilbur Smith. If the traffic data in this study prove to be sufficiently comprehensive, it should be possible to strictly limit the amount of traffic work which needs to be undertaken in that country.

10. Traffic Forecasts

The approach to be adopted for the production of traffic forecasts will be as described in the Consultant's technical proposal.

11. Analysis of Road User Costs

The road user costs to be used in the project will be based on the application of the World Bank's HDM-III Vehicle Operating Cost Sub-Model (VOCM). The Transport Economist is having technical meetings with the developers of the Pavement Management System (PMS) model to be used in the project to facilitate the integration of the use of VOCM results in the PMS and their use in the subsequent economic analyses.

12. Existing data on the number of licensed vehicles

As in the case of traffic data, it is important that all available statistics on the size of the vehicle fleet by vehicle category in each country be made available to the Consultants at the beginning of the project. It is important to note that these statistics should include public (government) vehicles. The Consultants found in Turkmenistan, for example, that there were two estimates of the total number of licensed vehicles, one from the Traffic Police and one from the Ministry of Statistics. These estimates differed significantly because of the uncertainty surrounding the number of public (government) vehicles. It is possible that a similar situation may exist in some of the other TRACECA countries. Reasonably accurate information on the number of licensed vehicles is absolutely crucial to the estimation of road user charges.

13. Existing information on vehicle registration and licence fees and other vehicle and automotive fuel taxes

It will considerably assist the rapid progress of work on the road user part of the project if all available information on existing road user charges and taxes could be made available to the Consultants at the commencement of their work.

OVERALL PLAN OF OPERATIONS

Project title: Tracaca Project - Implementation of Pavement Management System		Project number: TELREG 9305		Country: The Southern Republics of the CIS and Georgia		Page: 1										
Planning period: 12/1995 - 12/1996 delayed to 3/1996 due to winter conditions		Prepared on: 2/1996		EC Consultant: KOCKS CONSULT GMBH												
Project objectives: Implementation of Pavement and Bridge Management System																
No	MAIN ACTIVITIES	TIME FRAME												INPUTS		
		1996												PERSONNEL	EQUIPMENT AND MATERIAL	OTHER
1	2	3	4	5	6	7	8	9	10	11	12	EC	Counterpart			
	Region: Central Asia															
	State 1 (CA)															
1.	Commencement Meeting	x											1 week			
2.	Logistics, Data Collection	xx											1.5 weeks	2 weeks	Photocopier	
3.	Road Network Location	x											0.5 weeks	0.5 weeks		
	Roads (Team 1)															
4.	Road Cond. Survey + Standard Def.						x						6 weeks	3 weeks	Bump Integrator, Tripmeter, PCs, Car	
5.	Traffic Survey + Evaluation						x						3 weeks	3 weeks	Axle Weighbridge System	
6.	FWD Survey + Evaluation												2 weeks	2 weeks	Phenix FWD, PCs	
7.	Maintenance Strategy						x						1 week	1 week		
8.	Road + Usage Costing						x						1 week	1 week		
9.	VOC's (HDM)						xxx						3 weeks	3 weeks	PCs, software, printer	
	Bridges															
10.	Bridge Cond. Survey + Standard Def.						xxx						5 weeks	5 weeks	Car	
11.	Maintenance Strategy + Costing						xx						2 weeks	2 weeks		
	PMS / BMS Model															
12.	Adoption PMS + BMS							xx					2 weeks	2 weeks	PCs, software, printer	
13.	Model Optimization							xx					2 weeks	2 weeks		
14.	Training + Seminars							x					1 week	2 weeks	Teaching materials, copier	
TOTAL																
												32 weeks				

OVERALL PLAN OF OPERATIONS

Project title: Trececa Project - Implementation of Pavement Management System	Project number: TELREG 9305	Country: The Southern Republics of the CIS and Georgia
Planning period: 12/1995 - 12/1996 delayed to 3/1996 due to winter conditions	Prepared on: 2/1996	EC Consultant: KOCKS CONSULT GMBH
Project objectives: Implementation of Pavement and Bridge Management System		

No	MAIN ACTIVITIES	TIME FRAME												INPUTS			
		1996												PERSONNEL	EQUIPMENT AND MATERIAL	OTHER	
		1	2	3	4	5	6	7	8	9	10	11	12				EC Consultant
	Region: Central Asia																
	State 2 (CA)																
15.	Commencement Meeting														1 week		
16.	Logistics, Data Collection		x												1.5 weeks	2 weeks	Photocopier
17.	Road Network Location		x												0.5 weeks	0.5 weeks	
	Roads (Team 1)																
18.	Road Cond. Survey + Standard Def.						x								6 weeks	3 weeks	Bump Integrator, Tripmeter, PCs, Car
19.	Traffic Survey + Evaluation						x								3 weeks	3 weeks	Axle Weighbridge, System
20.	FWD Survey + Evaluation						x								2 weeks	2 weeks	Ph2nix FWD, PCs
21.	Maintenance Strategy						x								1 week	1 week	
22.	Road + Usage Costing						x								1 week	1 week	
23.	VOC's (HDM)						xxx								3 weeks	3 weeks	PCs, Software, Printer
	Bridges																
24.	Bridge Cond. Survey + Standard Def.						xxx								5 weeks	5 weeks	Car
25.	Maintenance Strategy + Costing						xx								2 weeks	2 weeks	
	PMS / BMS Model																
26.	Adoption PMS + BMS								x						2 weeks	2 weeks	PCs, Software, Printer
27.	Model Optimization								x						1 weeks	1 weeks	Teaching Materials, Copier
28.	Training + Seminars								x						2 weeks	1 weeks	
	TOTAL														31 weeks		

OVERALL PLAN OF OPERATIONS

Project title: Tracaca Project - Implementation of Pavement Management System		Project number: TELREG 9305		Country: The Southern Republics of the CIS and Georgia		Page: 3											
Planning period: 12/1995 - 12/1996 delayed to 3/1996 due to winter conditions		Prepared on: 2/1996		EC Consultant: KOCKS CONSULT GMBH													
Project objectives: Implementation of Pavement and Bridge Management System																	
No	MAIN ACTIVITIES	TIME FRAME												INPUTS			
		1996												PERSONNEL		EQUIPMENT AND MATERIAL	OTHER
		1	2	3	4	5	6	7	8	9	10	11	12	EC Consultant	Counterpart		
Region: Central Asia																	
State 3 (CA)																	
29.	Commencement Meeting					x								1 week			
30.	Logistics, Data Collection					xx								1,5 weeks	2 weeks		Photocopier
31.	Road Network Location					x								0,5 weeks	0,5 weeks		
Roads (Team 1)																	
32.	Road Cond. Survey+Standard Def.					xx	x							6 weeks	3 weeks		Bump Integrator, Tripmeter, PCs, Car
33.	Traffic Survey + Evaluation					xx	x							3 weeks	3 weeks		Axle Weighbridge, System
34.	FWD Survey + Evaluation					xx	x							2 weeks	2 weeks		Phonix FWD, PCs
35.	Maintenance Strategy													1 week	1 week		
36.	Road + Usage Costing						x							1 week	1 week		
37.	VOC's (HDM)						xxx							3 weeks	3 weeks		PCs, Software, Printer
Bridges																	
38.	Bridge Cond.Survey+Standard Def.					x	xxxx							5 weeks	5 weeks		Car
39.	Maintenance Strategy + Costing						xx							2 week	2 weeks		
PMS / BMS Model																	
40.	Adoption PMS + BMS										xx			2 weeks	2 weeks		PCs, Software, Printer
41.	Model Optimization										x			1 weeks	1 weeks		Teaching Materials, Copier
42.	Training + Seminars										x			2 weeks			
TOTAL														31 weeks			

OVERALL PLAN OF OPERATIONS

Project title: Traceca Project - Implementation of Pavement Management System		Project number: TELREG 9305		Country: The Southern Republics of the CIS and Georgia		Page: 5										
Planning period: 12/1995 - 12/1996 delayed to 3/1996 due to winter conditions		Prepared on: 2/1996		EC Consultant: KOCKS CONSULT GMBH												
Project objectives: Implementation of Pavement and Bridge Management System																
No	MAIN ACTIVITIES	TIME FRAME												INPUTS		
		1996												EQUIPMENT AND MATERIAL		
		1	2	3	4	5	6	7	8	9	10	11	12	PERSONNEL		OTHER
														EC Consultant	Counterpart	
Region: Central Asia																
State 5 (CA)																
57.	Commencement Meeting													1 week		
58.	Logistics, Data Collection						x		xx					1,5 weeks	2 weeks	Photocopier
59.	Road Network Location								x					0,5 weeks	0,5 weeks	
Roads (Team 1)																
60.	Road Cond. Survey + Standard Def.								xxx					6 weeks	3 weeks	Bump Integrator, Tripmeter, PCs, Car
61.	Traffic Survey + Evaluation								xxx					3 weeks	3 weeks	Axle Weighbridge, System
62.	FWD Survey + Evaluation								xx					2 weeks	2 weeks	PhØnix FWD, PCs
63.	Maintenance Strategy									x				1 week	1 week	
64.	Road + Usage Costing									x				1 week	1 week	
65.	VOC's (HDM)									xx				3 weeks	3 weeks	PCs, Software, Printer
Bridges																
66.	Bridge Cond.Survey + Standard Def.								xxx					5 weeks	5 weeks	Car
67.	Maintenance Strategy + Costing								xx					2 week	2 weeks	
PMS / BMS Model																
68.	Adoption PMS + BMS											xx		2 weeks	2 weeks	PCs, Software, Printer
69.	Model Optimization											x		1 weeks	1 weeks	Teaching Materials, Copier
70.	Training + Seminars											x		2 weeks	1 weeks	
TOTAL														31 weeks		

OVERALL PLAN OF OPERATIONS

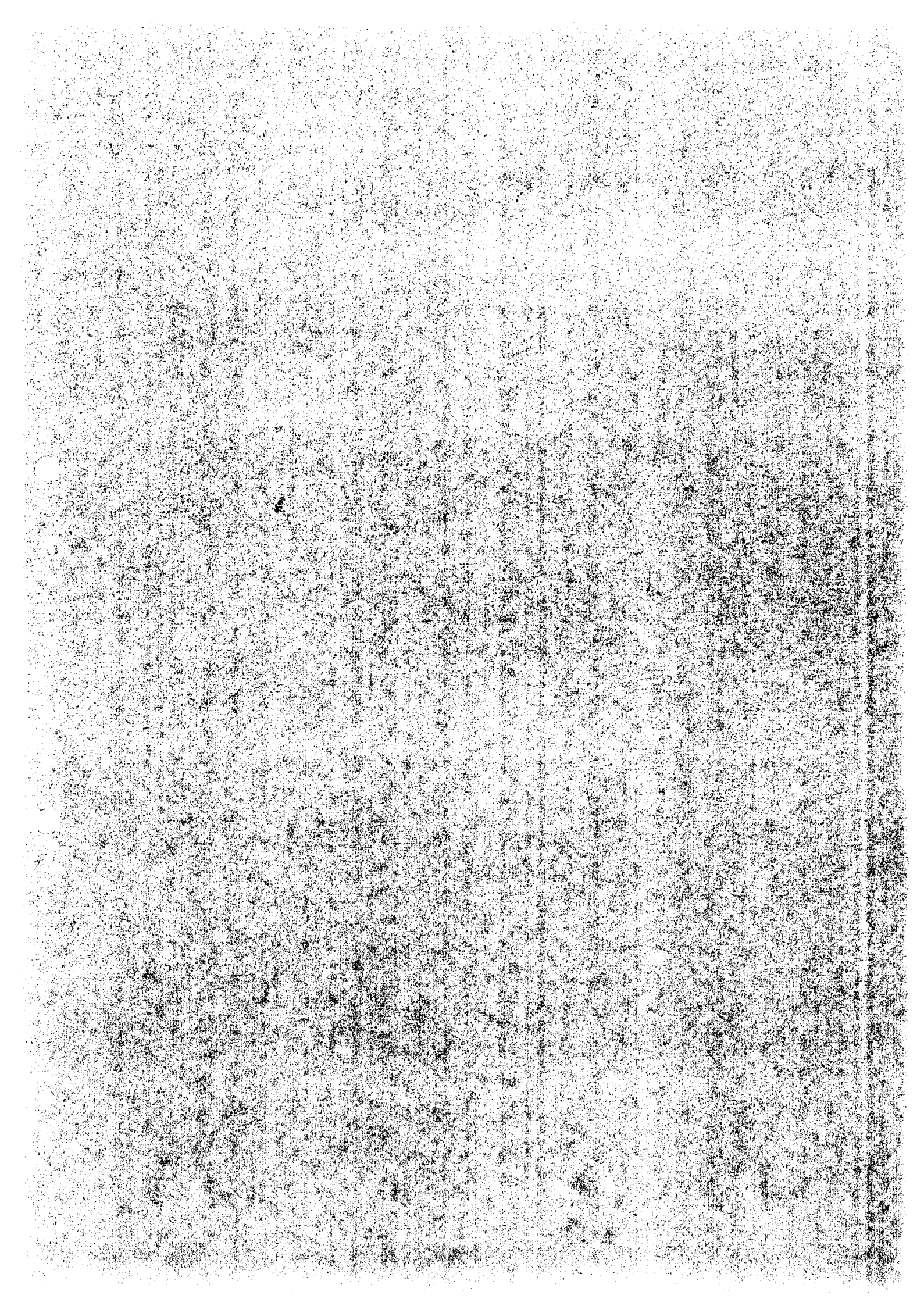
Project title: Tracœca Project - Implementation of Pavement Management System		Project number: TELREG 9305		Country: The Southern Republics of the CIS and Georgia		Page: 6											
Planning period: 12/1995 - 12/1996 delayed to 3/1996 due to winter conditions		Prepared on: 2/1996		EC Consultant: KOCKS CONSULT GMBH													
Project objectives: Implementation of Pavement and Bridge Management System																	
No	MAIN ACTIVITIES	TIME FRAME												INPUTS			
		1996												PERSONNEL		EQUIPMENT AND MATERIAL	OTHER
		1	2	3	4	5	6	7	8	9	10	11	12	EC Consultant	Counterpart		
Region: Caucasus																	
State 1 (C)																	
71.	Commencement Meeting													1 week			
72.	Logistics, Data Collection		x											1,5 weeks	2 weeks	Photocopier	
73.	Road Network Location				x									0,5 weeks	0,5 weeks		
Roads (Team 2)																	
74.	Road Cond. Survey + Standard Def.					xxx								6 weeks	3 weeks	Bump Integrator, Tripmeter, PCs, Car	
75.	Traffic Survey + Evaluation				xxx									3 weeks	3 weeks	Axle Weighbridge, System	
76.	FWD Survey + Evaluation					xx								2 weeks	2 weeks	Phœnix FWD, PCs	
77.	Maintenance Strategy					x								1 week	1 week		
78.	Road + Usage Costing								x					1 week	1 week		
79.	VOC's (HDM)								xx	x				3 weeks	3 weeks	PCs, Software, Printer	
Bridges																	
80.	Bridge Cond. Survey + Standard Def.								xx	xxx				5 weeks	5 weeks	Car	
81.	Maintenance Strategy + Costing									xx				2 week	2 weeks		
PMS / BMS Model																	
82.	Adoption PMS + BMS										xx			2 weeks	2 weeks	PCs, Software, Printer	
83.	Model Optimization										x			1 weeks	1 weeks	Teaching Materials, Copier	
84.	Training + Seminars										x			2 weeks			
TOTAL														31 weeks			

OVERALL PLAN OF OPERATIONS

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Project objectives: Implementation of Pavement and Bridge Management System																	
No	MAIN ACTIVITIES	TIME FRAME												INPUTS			
		1996												PERSONNEL		EQUIPMENT AND MATERIAL	
		Day															
		1	2	3	4	5	6	7	8	9	10	11	12	EC Consultant	Counterpart		
	Region: Caucasus																
	State 2 (C)																
85.	Commencement Meeting													1 week			
86.	Logistics, Data Collection					x								1,5 weeks	2 weeks	Photocopier	
87.	Road Network Location													0,5 weeks	0,5 weeks		
	Roads (Team 2)																
88.	Road Cond. Survey + Standard Def.							xxx						6 weeks	3 weeks	Bump Integrator, Tripmeter, PCs, Car	
89.	Traffic Survey + Evaluation							xxx						3 weeks	3 weeks	Axle Weighbridge, System	
90.	FWD Survey + Evaluation							xx						2 weeks	2 weeks	Ph2nix FWD, PCs	
91.	Maintenance Strategy								x					1 week	1 week		
92.	Road + Usage Costing								xxx					1 week	3 weeks	PCs, Software, Printer	
93.	VOC's (HDM)													3 weeks			
	Bridges																
94.	Bridge Cond.Survey + Standard Def.								xx		xxx			5 weeks	5 weeks	Car	
95.	Maintenance Strategy + Costing										xx			2 weeks	2 weeks		
	PMS / BMS Model																
96.	Adoption PMS + BMS												xx	2 weeks	2 weeks	PCs, Software, Printer	
97.	Model Optimization												x	1 weeks	1 weeks	Teaching Materials, Copier	
98.	Training + Seminars												x	2 weeks			
		TOTAL												31 weeks			

OVERALL PLAN OF OPERATIONS

Project title: Traceca Project - Implementation of Pavement Management System		Project number: TELREG 9305		Country: The Southern Republics of the CIS and Georgia		Page: 8												
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		1996												PERSONNEL		EQUIPMENT AND MATERIAL	OTHER	
		1	2	3	4	5	6	7	8	9	10	11	12	EC Consultant	Counterpart			
	Region: Caucasus																	
	State 3 (C)																	
99.	Commencement Meeting								x					1 week			Photocopier	
100.	Logistics, Data Collection								xx					1,5 weeks	2 weeks			
101.	Road Network Location								x					0,5 weeks	0,5 weeks			
	Roads (Team 2)																	
102.	Road Cond. Survey + Standard Def.								xx	x				6 weeks	3 weeks		Bump Integrator, Tripmeter, PCs, Car	
103.	Traffic Survey + Evaluation								xx	x				3 weeks	3 weeks		Axle Weighbridge, System	
104.	FWD Survey + Evaluation									xx				2 weeks	2 weeks		PhØnix FWD, PCs	
105.	Maintenance Strategy													1 week	1 week			
106.	Road + Usage Costing										x			1 week	1 week			
107.	VOC's (HDM)										xxx			3 weeks	3 weeks		PCs, Software, Printer	
	Bridges																	
108.	Bridge Cond.Survey + Standard Def.													5 weeks	5 weeks		Car	
109.	Maintenance Strategy + Costing										xxxx			2 weeks	2 weeks			
	PMS / BMS Model																	
110.	Adoption PMS + BMS												xx	2 weeks	2 weeks		PCs, Software, Printer	
111.	Model Optimization													1 weeks	1 weeks			
112.	Training + Seminars												x	2 weeks			Teaching Materials, Copier	
	TOTAL													31 weeks				



FORM OF LETTER

TO
RCPR

Dear Sir,

***TRACECA Project: Implementation of Pavement Management Systems (PMS)
Preparation for Commencement of Services***

For the implementation of the PMS and BMS (Bridge Maintenance System) we are planning to commence the services by middle of March 1996. The exact date will be advised soon.

The Terms of Reference (TOR) issued by the European Union/TACIS require a sustainable PMS/BMS working unit to be set up by the Recipient State (RS). This requires.

- (a) office space in the compound of the Concern approximately 2 x 3 x 4 m, furnished, heated/airconditioned, with access to sanitary facilities
- (b) access to telephone (local calls)
- (c) professional staff by providing:
 - two roads engineers, computer literate
 - one traffic engineer with knowledge in transportation economics, or a transportation economist
 - assistance by traffic police for axle weighing
 - one technician for field measurements and in providing engineering and socio-economic data relevant to the study
 - assistance in the form of background and current issues relating to the institutional and highway sector aspects
- (d) one road condition measuring vehicle, measuring equipment provided by KOCKS, and operation during a period of approximately 2 - 3 weeks (Minibus, Latvija or equivalent), with driver
- (e) one vehicle mounted with a towing hook and an engine size of at least 2000 ccm and weight of more than 800 kg, needed approx. 2 - 3 weeks, with driver

Data and Information

The following data and information is required ready available at the time of commencement of services:

A Background Technical Data

1. Road data bank (passports), and bridge data bank and condition information on construction and maintenance/rehabilitation until today.
2. Design standards, road categories, construction and maintenance materials and methods.
3. Unit prices and costs.
4. Maintenance and rehabilitation budget.

B Background Economic Data

1. Other studies previously or current on roads, financed by the World Bank, the International Monetary Fund and the European Bank for Reconstruction and Development, Asian Development Bank, and other International Financing Institutions. The main use for such data will be as background material for the production of generalized traffic forecasts.

Traffic Estimates

Estimates of base year road traffic by vehicle type in each of the study countries are required for two purposes:

- to provide a basis for the detailed engineering and economic analyses to be undertaken as part of the pavement management studies on each of the sample road sections and
- to provide information on traffic levels by vehicle type over the whole road network for use in the road user charges studies in each country

In view of the extremely limited study time being made available in each country for studies of this type, particularly road user charge studies, it is of the utmost importance that the maximum available traffic information be made available to the Consultants at the commencement of the study. This traffic data could include the results of routine and ad hoc traffic surveys conducted by the highway agencies in recent years as well as surveys carried out as part of other consultancy studies. The availability of this data at the commencement of the study will enable the Consultants to make a rapid initial assessment of the scope of the traffic surveys required to fill gaps in the information base.

The traffic data required is classified volume count data which should, ideally, show daily traffic on given road sections broken down by vehicle type. The analyses required for this study will use the following vehicle categories:

- passenger cars
- light utility vehicles, minibuses, vans and small trucks
- large buses
- 2-axle trucks
- 3-axle trucks
- 4 or more axle trucks

Where the available traffic count data does not provide this type of vehicle breakdown, an adjusted breakdown will be made based on the results of the traffic surveys to be undertaken and on the results of moving observer counts carried out by the Consultants.

2. Existing data on the number of licensed vehicles

As in the case of traffic data, it is important that all available statistics on the size of the vehicle fleet by vehicle category in each country be made available to the Consultants at the beginning of the project. It is important to note that these statistics should include public (government) vehicles. The Consultants found in Turkmenistan, for example, that there were two estimates of the total number of licensed vehicles, one from the Traffic Police and one from the Ministry of Statistics. These estimates differed significantly because of the uncertainty surrounding the number of public (government) vehicles. It is possible that a similar situation may exist in some of the other TRACECA countries. Reasonably accurate information on the number of licensed vehicles is absolutely crucial to the estimation of road user charges.

Existing information on vehicle registration and licence fees and other vehicle and automotive fuel taxes

It will considerably assist the rapid progress of work on the road user part of the project if all available information on existing road user charges and taxes could be made available to the Consultants at the commencement of their work.

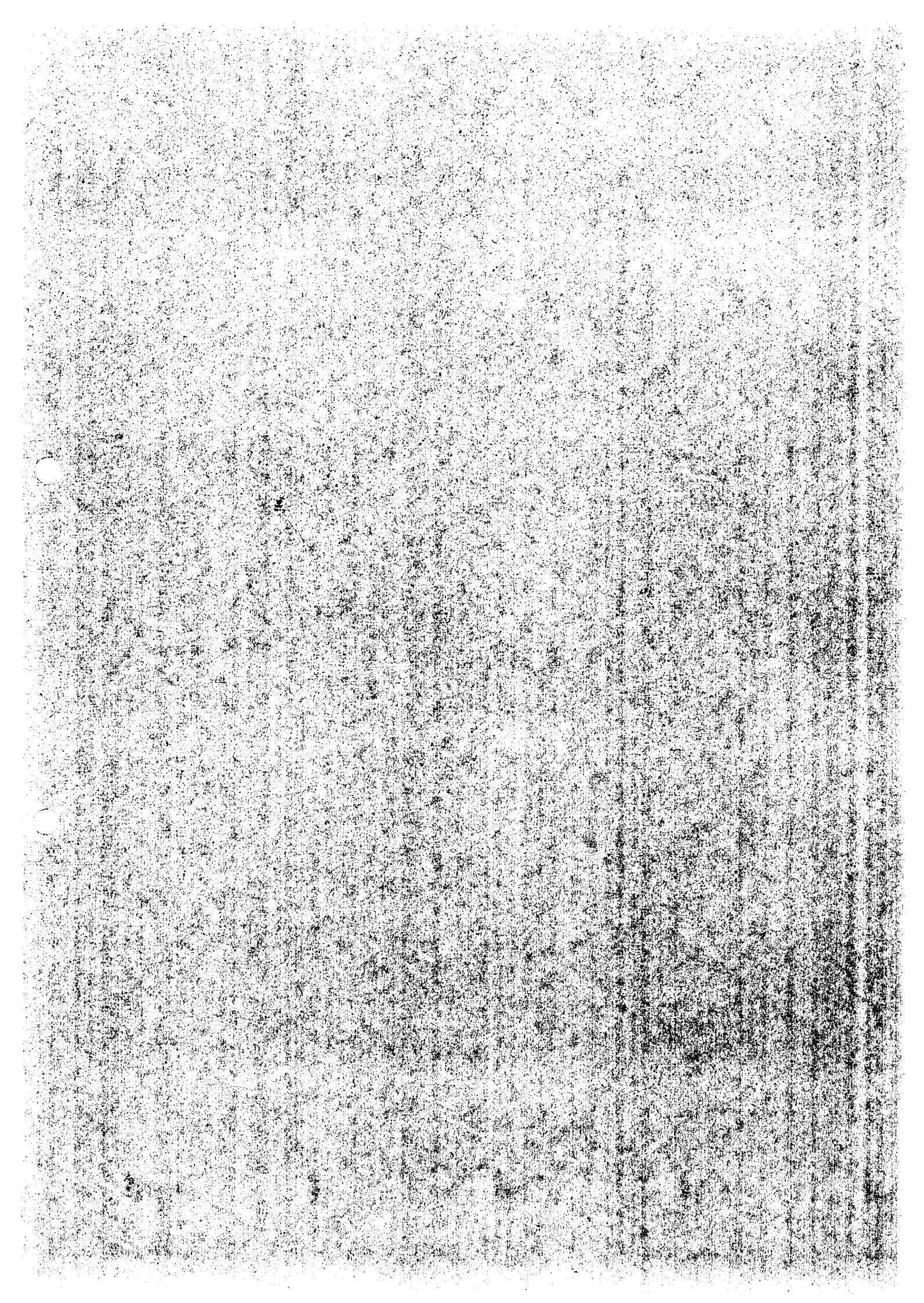
It is very important that also the socio-economic data are available at the time of commencement. From experience, road data are accessible from within the Recipient Countries Project Representatives Ministry/Institutions, whereas socio-economic data are under the aegis of other Ministries. It is therefore requested that a **letter of introduction and recommendation** is issued from the **highest possible authority** at the time of commencement of the services to the Consultant's staff for granting access to the socio-economic data. We have experienced considerable administrative delay (up to 6 weeks) on a similar assignment, before such letters materialized, and without such letters the relevant data were not accessible to the Consultants.

Your kind attention is highly appreciated.

Yours faithfully

KOCKS CONSULT GMBH
Consulting Engineers

Werner P. Weiler



Hårdware til TRACECA

PC'ere incl WIN-95

DIGITAL (PCnews)

Venturis 5100

100 Mhz pentium, 8 mb Ram,
840 mb HD, 15 " farveskærm
incl. CD-rom, højtalere osv.

Ekstra 8mb

DIGITAL (Danadata)

Venturis 5100

100 Mhz pentium, 8 mb Ram,
630 mb HD, 15 " farveskærm

Ekstra 8mb

IBM (Danadata)

PC330

100 Mhz pentium, 16 mb Ram
850 mb HD, 14 " farveskærm
(Option 15" = 1.000 kr ekstra)

COMPAQ (Danadata)

ProLinea 5/100e

100 Mhz pentium, 8 mb Ram
630 mb HD, 14 " farveskærm
(Option 15" = 1.000 kr ekstra)

Ekstra 8 mb

PRINTERE**HP laserjet 5P****6 sider/min, 600 dpi, 45 fonte, 2 mb Ram****HP laserjet 5L****4 sider/min, 600 dpi****UPS****APC Back-UPS 600I****BACKUP****SyQuest, 270 mb Disk, intern IDE****2 * Diske à 340 kr****EZ drive, 135 mb Disk, IDE****Diske à ca. 125 kr. 5 stk.**