Supervision of supply of an optical cable for communication and signalling to the railways of Azerbaijan, Georgia and Armenia

Completion Report

June 2002

Form 1.2. REPORT COVER PAGE

Project Title: **Supervision of Supply of an Optical Cable System for Communication and Signalling to the Railways of Azerbaijan, Georgia and Armenia**

Project Number : **Traceca1999**

Country : Azerbaijan, Georgia, Armenia

	Local Operator	Local operator	Local Operator	EC Consultant
Name	Azerbaijan Railways	Georgian Railways	Armenian Railways	Finnroad Oy
Address :	28 May St. 25a 370010 Baku Azerbaijan	15 Queen Tamara ave. 380012 Tbilisi Georgia	Tigran Metzi 50 375005 Yerevan Armenia	Opastinsilta 12H 00521 Helsinki Finland
Tel. number:	+99412-985087	+99532-954412	+3742-520428	+358-9-8689 880
Fax number:	+99412-939613	+99532-952527	+ 3742-573630	+358-9-8689 8830
E-mail :	musa@azjde.baku.az	n.a.	arway@mbox.amilink.net	raimo.sallanmaa@finnroad.fi
Contact person :	Mr Musa Panahov	Mr Igor Melkadze	Mr Ararat Hrimyan	Mr Raimo Sallanmaa
Signatures:	_____	_____	_____	_____

Date of report: June.2002

Reporting period: Progress report

Author of report: RAS/Finnroad, IK/Corenet

EC Monitoring team	_____	_____	_____
	[name]	[signature]	[date]
EC Delegation	_____	_____	_____
	[name]	[signature]	[date]
TACIS [task manager]	_____	_____	_____
	[name]	[signature]	[date]

Table of contents

1. Project Synopsis

Form 1.3 PROJECT SYNOPSIS

Project Title:	: Supervision of Supply of an Optical Cable System for Communication and Signalling to the Railways of Azerbaijan, Georgia and Armenia
Project Number	: Traceca1999
Country	: Azerbaijan, Georgia, Armenia

Wider objectives:
The wider objective of the programme in Caucasus is to support the full use of the Traceca transport corridors through Caucasus and provide means for efficient transmission of telecommunications data for both railways and private telecommunications companies throughout the Caucasus region. It will enhance safety and security for railway operations and simultaneously enable the private telecom operators to penetrate the Trans-Caucasus communications market.

Specific Project objectives:
The objectives of this consulting assignment are to provide technical supervision of the manufacture, supply, installation, witness testing jointly with the Railways and hand-over of the optical cable system, as well as monitoring that adequate training and transfer of know-how is provided by the supplier. The consultant provides also certificates for partial and final acceptance.

Outputs:
Optical cable system installed and operational according to specifications and approved by the Supervision consultant and Recipients

Inputs:
Supervision will include monitoring and approval of manufacture and factory tests, monitoring of works progress on site, monitoring and approval of partial field testing and final testing, provision of certificates to the Contractor on accepted deliveries. Supervision will be carried out using part time expatriate principal supervisor, part time expatriate technical supervisors, as well as part time local supervisors one in each country.

Project Starting Date: 6.5.2000

Project Duration: 24 months

2. Summary of project progress since the start

2.1. General

The inception phase was reported in the inception report 7 July 2000. After that the Consultant has completed the studies to ensure that the proposed system is in compliance with the technical specifications and visited both the cable and equipment factories in order to accept the factory test procedures.

The HLD-documentation for all three countries has been provided by the Contractor, Siemens and accepted by the consultant.

Siemens finalised the overall time schedules for all three recipient countries in June 2001 basing on the original project deadline (May 2002). The progress in all three countries has been slow and based on progress it was estimated that there would be a delay of several months in the completion of the project. Therefore the consultant proposed EC to extend the contract period. EC has indicated readiness to consider extending the contract period. The Equipment Suppliers contract was extended in May. The consultant supervision contract was not extended but it was agreed that the remaining work would be carried out under a separate assignment. Therefore this assignment ended as scheduled, 5th of May 2002. Part of the progress information is more updated than the formal project end date.

2.2. Coordination Team Meetings

After the kick-off meetings there have been five sets of Coordination team meetings in the project countries. Representatives of the Recipient, Contractor and Supervising Consultant have participated in all meetings. The Task Manager of the EC participated in the February and May meetings.

It was agreed in the Coordination Team Meetings in January 2002 that the next meeting will be held in the end of April 2002. Because of the Traceca Conference in Tashkent in the end of April it was agreed that the meeting will be postponed till the end of May 2002. The meetings were further postponed since the contract extensions delayed. In fact the next meetings were only held in September 2002 after the approval of extensions and new contracts.

The new proposed deadlines to complete the project by the 15th of December 2002 were agreed in the last Coordination Team Meetings of this assignment in January 2002. The deadlines for the works in all three countries were agreed in the signed minutes of coordination team meetings and in the signed protocols. However, progress has still been slow in spite of the agreements.

2.3. Project Progress

2.3.1. Georgian Railways

The subcontractor of the Railways has laid the entire duct (except 3,5 km) and 526 km of cable has been blown (total 547 km of cable). Reconstruction works of the technical rooms are completed except for Poti. All civil works should be completed by the 15th of May 2002 (new dead-line). All the original deliveries have been received and installation is ongoing.

2.3.2. Azerbaijan Railways

Reconstruction works of the technical rooms are completed except for air-conditioning and grounding. Duct and cable are all installed. All the original deliveries have arrived in Azerbaijan. Installation is ongoing

2.3.3. Armenian Railways

Duct laying and cable blowing were completed in the summer 2002. Some trench filling is still ongoing. The technical room reconstruction readiness stage is 33 pcs, most of which are still without air-conditioning and grounding. Six rooms are accepted as ready for installation. All civil works should be completed by the 30th of June 2002 (new dead-line). All the original duct and cable deliveries have arrived in Armenia. The equipment has not yet arrived in Armenia.

3. Project Progress in final project period

3.1. Achievements in comparison with planned results

Siemens prepared the final over-all time schedule in June 2001. The testing and acceptance programme is still not available but will be finalised based on the supply schedule, later in autumn 2002. The test protocols have been given to the consultant and Railways.

The progress in all three countries has been slow and based on progress it was estimated that there would be several months delay in the completion of the project. Therefore the consultant has proposed to EC an extension of the contract period. Up to end of the project period, no extension had been agreed but negotiations were going on between Siemens and EC. It was understood that the supervision contract would follow the decision.

The new dead lines to complete the project by the 15th of December 2002 were agreed in the last Coordination Team Meetings. The dead lines for the works in all three countries have been agreed in the signed minutes of coordination team meetings and in the signed protocols.

The supervision services under this contract have been continuing and verifying the slow progress. We have also given technical support for finding ways to speed the implementation.

3.2. Coordination Team Meetings

The latest Coordination team meetings were held between 29.1-5.2.2002. All the meetings were participated by the Recipient, Contractor and Supervising Consultant. The new deadlines to complete the project by the 15th of December 2002 were agreed in the Coordination Team Meetings.

It was agreed in the latest minutes of the meetings that the next meetings would be in the end of April. Because of the Traceca Conference in Tashkent it was proposed to postpone the meetings. Therefore the next meeting will take place after this contract's validity and a possible supervision function will be carried out under a separate agreement.

3.3. Progress of Works

The progress of civil works has been briefly described in chapter 2.3. We also have included a brief status report as Annex 5.

3.4. Deviations from updated original planning and reasons

The following main steps were noted from the updated time schedule:

- The progress of the project in Georgian Railways followed the updated time schedule, but Siemens claimed that the quality of the laying and blowing was not good enough and the Railways promised to eliminate all deviations and faults. The fault elimination was ongoing and the progress lagged behind.

- The progress of the project in Azerbaijan Railways is following the updated time schedule. Siemens has claimed that the quality of the laying and blowing is not in accordance with the technical standard. Acceptance test of civil works was planned for June.

- The works in Armenia started later than agreed due to contracting difficulties. In May the contracts were ongoing and completion was estimated for August, some two months behind the schedule.

- At the end of the assignment the contractual situation was still unclear since no decision had been made on continuation.

The reasons for the delays in civil works were many. The railways were unaccustomed to the techniques used in laying of the ducts and blowing of the cable. Overall planning was poor especially to mobilise enough local resources. On the other hand Siemens supervision of civil works was inadequate to give advice on correct work methods and work planning.

Especially in Armenia the funding of civil works created long delay. As the railway did not have enough own funding, it used the World Bank funded project as a vehicle for engaging an outside contractor. The procedures took quite a lot of time and actual progress was only witnessed at the end of the period.

Bureaucracy in getting permits and tax exemption hindered equipment deliveries.

4. Overall report on the total project

In the start situation of the assignment the contract between EU and the Contractor (Siemens) had just been signed. The role of the supervision consult was agreed to be monitoring project progress, witness testing jointly with the railways and to provide certificates for the partial and final acceptance.

Kick-off meetings were organised in May 2000 in all the countries. Already at this stage it was clear that there was a substantial risk in correct timing of the activities between the contractor (in providing cable and systems) and the three railways (in providing civil works). There were already from the start difficulties in arranging financing in Armenia for the railways design and civil works.

It was agreed that the main monitoring tool would be the periodic supervision missions to all three countries supported by design and documentation checks and local expert supervision.

The Inception report was published 7 July 2000.

The first coordination team meetings were held in November 2000 in all the three countries and progress of the project was discussed. Georgian and Azerbaijan Railways had started cable installation and reconstruction of technical rooms but were falling behind schedule and their plans were found to be unrealistic for completing the work in time. Also the contractor had a slow start in planning the entire project and in preparation for supplies. In Armenia the situation was worse. Financing problems hindered progress in Armenia.

Factory tests for cables and PABX were witnessed during December 2000.

Second coordination meetings were held in February 2001. By that time the contractor had not delivered an updated time schedule for the project but it was clear that both Georgia and Azerbaijan were progressing but several delays had occurred. Armenia had proceeded with design but was still short of funding for civil works.

The third coordination round was organised in May 2001. The contractor had now provided a revised, final time schedule for the project. In Georgia the duct and cable deliveries were nearing completion and OTN had been delivered. The railways were estimating to complete cable blowing in December 2001. In Azerbaijan the duct delivery was complete. The railways estimated that blowing of cable would be completed in January 2002. Armenia was lagging more behind and had just started digging works. The Railways had solved the financial problems by using WB loan funds.

The fourth coordination round was organised in early October 2001. In Georgia the deliveries had been completed and civil works were proceeding but delayed. Installation should be completed by the End of February. Azerbaijan was some six weeks behind Georgia. In Armenia the civil works were more behind schedule and the new civil works contractor had not been engaged yet.

The last coordination meetings under this phase were organised in January 2002. By then it became clear that the project could not be completed in accordance with the contract performance period. The new target was to complete activities by the 15th of December 2002. This was agreed in the last Coordination Team Meetings. The deadlines for the works in all three countries were confirmed in the signed minutes and in the signed protocols.

The next meeting was scheduled for the end of April 2002. Because of the Traceca Conference in Tashkent in April it was agreed that the meeting would be postponed till the end of May 2002. Since there were difficulties in extending the contracts, supervision was suspended.

5. Lessons learnt and recommendations

Project Management:

Throughout the implementation of the project, it has been evident that the project would need more management and control. The contract model is fairly complicated since it is a mixed equipment supply, installation, civil works contract and service delivery. There are several parties affecting the contract performance. The national railways have large civil works responsibilities and the contractor needs to co-operate very closely with the civil works contractors. There is no quick problem solving mechanism. The monitoring and verification type function under this contract is not designed and equipped to solve practical problems and the Siemens/Railways interaction requires an impartial guidance mechanism.

Contract model

The contract model that has been used is basically between the Contractor and EC. There are several requirements to be performed by the Railways in order for the contractor to keep the schedule. There is no clear mechanism to bind the railways into the same contractual schedule with Siemens. This is the reason for coordination meetings and subsequent agreements between Siemens and the Railways. This should have been designed at the onset of the project.

Cooperation

The contract places a large responsibility for the contractor to cooperate closely with the recipient organisations. It is evident that the contractor has taken seriously enough this role. Due to weak project management structure this has led to several problems because of inefficient problem solving mechanism and dialogue in general.

Technical Specifications

The technical specifications for the project have caused a more difficult and complicated civil work requirement and installation procedure than would be necessary. In our opinion with a better selection of the cable type, a lot of savings would have been possible due to easier installation. We would have selected an armoured cable and thus saved the duct and blowing work. We also believe that an armoured cable would have been more durable due to less installation faults.

6. LIST OF ANNEXES

Annex 1: FORM 2.2 PROJECT PROGRESS REPORT

Annex 2: FORM 2.3 RESOURCE UTILISATION REPORT

Annex 3: FORM 2.4 OUTPUT PERFORMANCE REPORT

Annex 4. FORM 3.3 OUTPUT PERFORMANCE SUMMARY

Annex 5 FORM 3.2 PROJECT COMPLETION REPORT

Annex 6: Preliminary report on progress of works, 20.9.02.

6.1. Annex 3: FORM 2.4 OUTPUT PERFORMANCE REPORT

FORM 2.4 OUTPUT PERFORMANCE REPORT

Project title: Caucasus Optical Cable System Supervision	Project number: Traceca 1999	Country: Azerbaijan, Georgia, Armenia	Page: 1/1
Prepared on: 31.06.2002		EC Consultant: Finnroad with Railtelia , Helsinki	

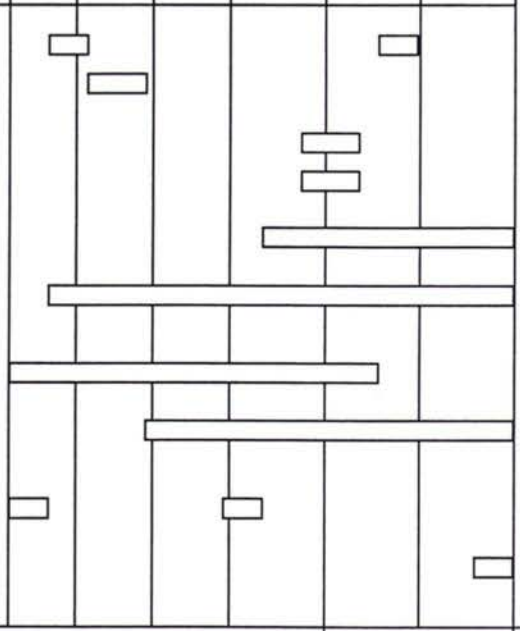
Output results	Deviation original plan + or - %	Reason for deviation	Comment or constrains & assumptions
Approval of high level design documents	0 %	• High level design documents prepared by Siemens	• Cable and equipment production has been monitored and the factory test procedure accepted
Monitoring production procedure Approval of the factory test procedure	0 %		
Approval of certificates of deliveries	0 %	• OTN not arrived in Armenia • Last units of PABX have not delivered	
Approval of the acceptance test procedures	0%		• The basic procedure has been presented
Monitoring PABX delivery to Georgia	-10 %	• PABX arrived in the end of March in Georgia, not in the end of February as agreed	• Detailed test procedures will be presented 30 days before the tests by Siemens
Monitoring duct laying in Ge and Aze " in Armenia	0% -10%	• Duct laying started late in Armenia	
Monitoring cable blowing in Ge and Aze " in Armenia	0% 0%		
Monitoring reconstruction of the technical rooms in Ge, Aze and Arm	0%		

Form 2.2. PROJECT PROGRESS REPORT

Project title : Caucasus Optical Cable System Supervision	Project number : Traceca1999	Country :Azerbaijan, Georgia, Armenia	Page :
Planning period : 01-06/2002	Prepared on : 30.06.2002	EC Consultant : Finnroad with Railtelia, Helsinki	

Project objectives : Specific objective of this supervision project is to assure the proper technical execution of the supply of an optical cables system for communication and signalling to the railways of Azerbaijan, Georgia and Armenia. The overall objective is to improve communication systems, promote the full use of TRACECA corridor as well as to increase competition in the telecommunications sector in Caucasus.

		TIME FRAME 2002						INPUTS							
		Months						PERSONNEL EC CONSULTANT		LOCAL CONSULTANTS		EQUIPMENT AND MATERIAL		OTHER	
No	ACTIVITIES	01	02	03	04	05	06	Planned	Utilised	Planned	Utilised	Planned	Utilised	Planned	Utilised
1.	Coordination team meetings							19 d	18 d	24 d	18 d			Flights + DSAs as per contract	
2.	Approval of high level designs							2 d	2 d	0 d	2 d				
3.	Certificate of deliveries							3 d	0 d	3 d	0				
4.	Approval of test procedure							4 d	0 d	0 d	0				
5.	Monitoring field test, witness testing							18 d	0 d	16 d	5 d				
6.	Monitoring equipment installation in Azerbaijan and Georgia							6 d	0 d	17 d	13 d				
7.	Monitoring cable blowing in Georgia and Azerbaijan							4 d	1 d	14 d	11 d				
8.	Monitoring duct laying and cable blowing in Armenia							4 d	0 d	21 d	10 d				
9.	Progress reports							7 d	7 d	3 d	6 d				
10.	Certificate of tests							3 d	0 d	3 d	0 d				
11.	Certificate of Completion report							5 d	0 d	3 d	0 d				
						TOTAL (days)		75 d	28 d	104 d	65 d				



6.2. Annex 2: FORM 2.3 RESOURCE UTILISATION REPORT

FORM 2.3 RESOURSE UTILIZATION REPORT

Project title: Caucasus Optical Cable System Supervision	Project number: Traceca 1999	Country: Azerbaijan, Georgia, Armenia	Page: 1/1
Planning period: 1.1.2002 - 30.06.2002	Prepared on: 31.06.2002	EC Consultant: Finnroad with Railtelia, Helsinki	
Project objectives: See Synopsis			

SOURCE INPUT	TOTAL PLANNED	PERIOD PLANNED (6 mth)	PERIOD REALISED (3 mth)	TOTAL REALIZED	AVAILABLE FOR REMAINDER
PERSONNEL EC Consultant Local Experts	 208 d 350 d	 75 d 104 d	 28 d 65 d	 167,5+28 d= 195,5 d 286 + 65 d= 351 d	 12,5 d - 1d
Sub-total					
EQUIPMENT AND MATERIAL					
Sub-total					
OTHER INPUTS					
Sub-total					
TOTAL					

FORM 3.2 : PROJECT COMPLETION REPORT

Project title : Caucasus Optical Cable system spv		Project number : Traceca 1999		Country : Armenia, Georgia, Azerbaijan	Page :
Reporting period : 05/2000 – 05/2002		Prepared on : June 2002		EC Consultant : Finnroad, Corenet	
REPORTING PERIOD	MAIN ACTIVITIES UNDERTAKEN	EC CONSULTANT		INPUTS UTILISED	
				MATERIALS AND EQUIPMENT	OTHER
		Period	Cumulative		
2000	Supervision services	91	91	N/a	
01/2001-6/2001	Supervision services	46	137		
07/2001-12/2001	Supervision services	31	168		
1/2002-6/2002	Supervision services	28	196		
	TOTAL	195,5 days		N.A.	N.A.

FORM 3.3 : OUTPUT PERFORMANCE SUMMARY

Project title : Caucasus Optical Cable system spv	Project number : Traceca 1999	Country : Armenia, Georgia, Azerbaijan	Page :
Prepared on : September 2002		EC Consultant : Finnroad Corenet,Finland	

Output results	Deviation original plan +/-	Reason for deviation	Comment on constraints and assumptions
Approval of high level design documents	No deviation	Civil works contractor's delays in performance	
Monitoring production procedure	No deviation		
Approval of the factory test procedure	No deviation		
Approval of certificates of deliveries	No deviation		
Approval of the acceptance test procedures	No deviation		
Monitoring PABX delivery to Georgia	No deviation, but delay my one month		
Monitoring duct laying in Ge and Aze	No deviation, construction delays in Armenia		
" in Armenia			
Monitoring cable blowing in Ge and Aze	No deviation, construction delays in Armenia		
" in Armenia			
Monitoring reconstruction of the technical rooms in Ge, Aze and Arm	No deviation		