



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

## Progress Report

31 March 2001

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**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
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Date of report : 31.03.2001

Reporting period : Progress report

Author of report : MM/Finnroad, IK/Railtelia

EC Monitoring team \_\_\_\_\_  
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TACIS	_____	_____	_____
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## **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 the 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 is 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 finished the studies to ensure that the proposed system is in compliance with the technical specifications and visited both the cable and equipment factory in order to accept the factory test procedures.

Preliminary over-all time schedule was prepared in August 2000. Although the work programme and contents for the assignment has been discussed between the Recipients and Contractor, in order to agree on a smooth and realistic implementation schedule for the project, the over-all time schedule is not yet ready.

### **2.2 Coordination team Meetings**

After the kick-off meetings, which were held in May, the first Coordination team meetings between each of the Recipient railway companies, the Contractor and the Consultant, have been organised in the project countries between 16-24.10.2000. The second meetings were held in February 2001 between 8-12.2.2001. All meetings were participated by representatives of the Recipient, Contractor and Supervising Consultant, and furthermore the Project Manager of the EC participated in the February meetings.

### **2.3 Project Progress**

#### **2.3.1 Georgian Railways**

Designs of the cable installation were informed to be completed in the end of 2000. On the 5<sup>th</sup> of March 2001 the Railways proposed changes to the cable designs. Reconstruction works of the technical rooms will be completed by 30.4.2001.

Subcontractor of the Railways has laid 86 km of the duct. 400 km of duct has been delivered to Georgia. Delivery of 140 km of duct has been postponed to May, since the warehouse of the Railways is full. The cable deliveries have not yet arrived to Georgia. The equipment for Georgian Railways is on their way to Georgia and they will arrive in April.

#### **2.3.2 Azerbaijan Railways**

Azerbaijan Railways has carried out the designs of cable installation on the whole section in Azerbaijan territory. The site survey has been completed.

550 km of duct has been delivered to Azerbaijan. Preparation works for the ducts and reconstruction works of the technical rooms are underway. Subcontractor of the Railways has not yet started the laying of the duct.

### 2.3.3. Armenian Railways

Armenian Railways has started the designs of cable installation and the work will be completed in May. Half of the planning documentation is ready. Contractor has started the site survey and high level design works.

## **3. Summary of project planning for the remainder of the project**

The duties of the supervision assignment for the remainder of the project include the following tasks:

- a) Overall supervision of the project by the EU consultant and the local supervisors
- b) Assessment and approval of the following documents and processes:
  - Updated over-all time-schedule
  - The high level design document
  - The site acceptance test procedures
  - The operation and maintenance manuals
- c) Witnessing of the following activities according to a sampled and selected witness program:
  - The on-site installation of optical cable, transmission and telephone equipment
  - The partial acceptance tests and system acceptance tests
  - The completion tests
- c) Participation in the coordination team meetings and project meetings
- d) Reporting as agreed in the Inception Report
- e) Provision to Tacis of the following certificates:
  - Certificates of Delivery (Railways will issue the release note for cable supply)
  - Certificates of Progress
  - Certificates of Completion
  - Certificates of Compliance
- f) Environmental monitoring of the project
- g) List of consultant tasks during the ongoing reporting period (>> 30.06.2001):
  - Agreeing the updated time schedule
  - Approval of the test procedures
  - Monitoring cable blowing and reconstruction of the technical rooms in Georgia
  - Monitoring duct laying in Azerbaijan



- Monitoring that design works are completed in Armenia

## **4. Project progress in reporting period**

### **4.1 Achievements in comparison with planned results**

A new realistic work programme and contents has been worked together with the recipients and Contractor in order to agree on a smooth and realistic implementation schedule for the project. The supervision, testing and acceptance programme of the Consultant will be finalized based on the supply schedule. The final realistic over-all time schedule was supposed to be prepared by The Contractor by the end of March. The final time-schedule is not finalised and the comparison with planned results is impossible.

HLD documentation for all three countries has been worked by The Contractor, but none of those has been delivered to the Consultant for acceptance.

A meeting was held in Brussels on 15<sup>th</sup> of January by Mr Niemi, Mr Mannonen and Ms Koskela. The participants of the meeting discussed about some procedures and problems concerning the project in Caucasus and made preparations for the visit to Coordination Team Meeting.

### **4.2 Coordination team Meetings**

Coordination team meetings were held in February between 8-12.2.2001. All meetings were participated by the Project Manager of the EC and representatives of the Recipient, Contractor and Supervising Consultant.

In order to secure the exchange of know-how and give the required competence to operate and maintain the optical cable system, The Contractor proposed in the coordination meetings a tailor made training programme for all of the three Railways. The EC Project Manager and the Consultant were provided with copies of the proposed training programmes. The programmes were not accepted by the Consultant during the meetings, as the adequacy and compliance with the Supplier's contract has to be verified before approval.

### **4.3 Works Situation**

#### **4.3.1 Georgian Railways**

##### **Contractor's work situation**

- Site-survey has been completed
- High-level design documentation in English has not yet been delivered to the Consultant
- 400 km duct has been delivered. The last lot of duct (140 km) will arrive in May.
- First delivery of the cable (300 km) will be in Georgia in April.

- OTN equipment has been tested at the factory and they are on their way to Georgia. After the final design the Hicom equipment can be ordered for production. Hicom equipment will be delivered in May.

#### Civil work situation

- Designs of the cable installation are completed. On the 5<sup>th</sup> of March the Railways has proposed some changes to the plans.
- About 90% of the reconstruction works of the technical rooms have been completed. The remaining reconstruction works will be completed by the end of April.
- 400 km of duct has been delivered and accepted by the Railways. Some of the delivery acceptance certificates (300 km) have been given to the Consultant.
- 86 km duct has been laid. The laying will be completed by the end of August.
- The blowing of the cable starts in the beginning of April. The subcontractor has stated that it is possible to blow 5-6 km of cable /day/section. In some areas it is possible to blow nearly 10 km / day. Blowing techniques has been presented to The Contractor by the subcontractor and it is also accepted technically by The Contractor.

#### 4.3.2 Azerbaijan Railways

##### Contractor's work situation

- Site-survey has been completed
- High-level design documentation in English has not yet been delivered to the Consultant
- 550 km duct has been delivered
- First delivery of the cable will be in March, last delivery will be in July
- Delivery of the equipment as a whole will be in May.

##### Civil work situation

- Designs of the cable installation are completed
- The technical rooms have been identified. Reconstruction works of the technical rooms will be ready in May.
- 550 km of duct has been delivered and accepted by the Railways. The delivery acceptance certificates of 180 km of duct were given to the Consultant.
- Laying of the duct has not yet started. The duct will be laid by a sub-contractor of the Railways. According to the time schedule shown by the Railways the laying of the duct 550 km will be completed by the end of November.
- Final design of the network has to be done by Mr Hubert (The Contractor) in co-operation with the Railways. After the final design the Hicom equipment can be ordered for production. Hicom equipment will be delivered in June.

#### 4.3.3 Armenian Railways

##### Contractor's work situation

- Site-survey for the station will begin by the mid of February.
- High-level design documentation in English will be finalized in March.
- First lot of duct (100 km) will be delivered in April . The timing of the other deliveries will be agreed together with the contractors.
- First delivery of the cable will be in May.

- Delivery of the equipment as a whole will be in October .

#### Civil work situation

- Designs of the first half of the installation has been completed. The remaining part of the cable installation will be finalized by 1.5.2001.
- The technical rooms have been identified and the design works for the rooms will be ready by 1.5.2001. Reconstruction works of the technical rooms will be ready before the delivery of the equipment.
- 0 km of duct has been delivered and accepted by the Railways.
- Laying of the duct will begin in April. The duct will be laid by the Railways.
- The Railways will ask offers from subcontractor for blowing of the cable. The blowing of the cable has to be completed before the beginning of next winter season (30.11.2001).

#### 4.3.4 Final time schedule

Presentation of final time schedule by the Contractor is seriously delayed. The work programme, contents and responsibilities in the project have been discussed between the Recipients and the Contractor starting from the kick-off meetings mission in order to agree on a realistic implementation schedule for the project. However the Contractor has not been able to present an over-all time schedule to the Consultant.

#### 4.3.5. Testing and approval program

The following testing and approval procedure has been discussed and agreed with the Contractor and the Railways.

Testing program in general:

The Contractor and Consultant will agree (together with the railways) on the testing and approval program after The Contractor has prepared the final work program and time schedule for the project.

The testing and approval schedule will be presented to the Railways in the next coordination team meeting in the beginning of year 2001 by the Contractor.

Factory and delivery testing:

The contractor confirmed that each cable lot will be tested before shipment by the supplier and the supplier will give factory test certificates also in Russian.

It was agreed that the cable will be tested (attenuation measurement test) at site before installation by the Railways together with the The Contractor. The Contractor will provide the measurement equipment for the testing. After testing the Railways will give the delivery acceptance release note to the Consultant. Consultant will sign the certificate of delivery and send it to EU.

It was agreed that the number of sealed equipment boxes will be checked by the Consultant's local representative Mr Mamuka Chantladze after the shipment at the warehouse in Georgia. After checking the local representative will give the delivery acceptance release note to the Consultant. Consultant will sign the certificate of delivery.

#### 4.3.6 Preshipment inspection at the factory

EU Consultants (Irja Koskela and Tapani Suokas) visited between 16-18.12.2000 at the factory "Vogt electronic" in Witten and "Corning Cable Systems" in Neustadt. Factory test procedures were given during the visit. "Vogt electronic" is producing the PABX equipment (Hicom 300 E) and "Corning Cable Systems" is producing the optical cables. EU Consultant (Irja Kosela) visited at Siemens Atea in Belgium on the 6<sup>th</sup> of February.

It was noted that

- The supplier has its own documented ISO certified quality system
- The quality system and guidelines for the quality systems are documented
- Production process are qualified and documented
- The quality is tested both during the process and in the final inspection

EU Consultants noted also during their visit that the testing is performed according to the factory testing procedure and that each lot will be tested before shipment by the supplier. The supplier will give factory test certificate for each of the lots.

#### 4.4 Deviation from original planning and reasons

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

- The final time-schedule for the project has not yet been prepared by the the Contractor.
- The start in Georgian Railways was generally according to the preliminary plans. The over-all time schedule for cable laying was unrealistic and thus it has been changed. Plan for laying and blowing the cable was given to the Contractor in February by the Georgian Railways. Some necessary changes in the material lists of the contract has been requested by the Railways. Some financial and environmental problems has caused delays in the progress of the duct laying. For the slow progress in duct laying the warehouse of the Railways is full and the latest delivery of duct has been postponed to May.
- The start in Azerbaijan Railways was generally according to the preliminary plans. The Railways seemed to have some financing problems for laying the ducts and blowing the cables. These problems should be solved soon in order to avoid delays to the

progress of the project in Azerbaijan. There has also been some problems at the border which has caused delays to the duct delivery.

- The design works in Armenia have been delayed but the design has finally started after funds have been allocated for the design works. The financing for the duct laying and blowing of the cable must be clarified soon in order to avoid delays to the progress of the project in Armenia. The laying of the duct and blowing of the cable must be completed by the end of the year 2001.

#### **4.5 Specific action needed from the local authorities- including the Coordination Unit concerned and/or the EC (suggested solutions)**

##### 4.5.1 Contractual issues

The responsibilities of the Contractor and the Recipients have been clearly stated in the scope of the contract and in the statements of endorsement. Project management is the responsibility of the Contractor, as they have signed a turn-key contract. However, the contract is not easy to implement as the Contractor has no contractual powers towards the Recipient railways organisations, who on the other hand are responsible for all civil works and cable blowing and thus effect strongly the progress of works. Project implementation therefore requires strong support from the EC, who has signed project agreements with the Recipients.

The project also needs the support of the Governments for successful conclusion. Adequate financial allocations for the project are needed in order to avoid delays in the project implementation.

Moreover the procedures at the customs have caused extra delays and problems at the borders for the deliveries. These procedures have to be clarified soon in order to avoid any additional delays.

##### 4.5.2 Final realistic jointly agreed time-schedule

The time schedule for the project has to be finalised together with the recipients and Contractor. New realistic over-all time schedule should be prepared by The Contractor latest in April.

One of the key aspects for the smooth and timely implementation of the project is correct timing of activities on Contractor's side, providing the cable and systems, and on the three Railways organisations' side, providing the civil works.

##### 4.5.3 Financing of the machines to lay the duct and blow the cable

The chosen solution to install the optical-cable in a cable duct needs special machines. Since the supply of cable blowing equipment is not included in the contract, there has been, and there still might be risk of delays in the project progress in installing the cable.

## **5. Project planning for next reporting period**

### **5.1 Important observations for project success**

The key issue for the project success is close co-operation between the Contractor, the Railways and the Subcontractors of the Railways. This co-operation is needed in order to be fully aware of the project progress and problems in practice at all time and to make the plans or changes to the plans accordingly.

At the moment it seems that the speed of the project is so slow that there might be at least one year delay in the completion of the project.

Not even the basic tool to follow the success of the project (a realistic jointly agreed time schedule) is yet finalised. Without jointly agreed time schedule it is impossible to evaluate the importance, consequences and reasons of delays.

### **5.2 Meeting in Brussels**

The Contractor has suggested a clarification meeting with the EC Project Manager in Brussels in order to clarify some issues. The issues, which have been proposed to be discussed in the meeting:

- Request by the NR for the changes to the material list.
- The question of exemption of taxes and customs duties
- The effects of the delays of the project for the time- and the payment schedule of the contract.
- The handling of additional costs caused by the delays. (Due to possible delay concerning the designing works and laying of the optical cable ducts in trenches as well as the blowing of the optical, there may come a need to prolong the project duration. This means that further costs will be accruing which has not been calculated ).

### **5.3 Agreement for adjustment of contract**

It was agreed in the last Coordination Team meeting in February that the contract will be modified so that the High-Level-Design-Document for each of the three countries will be provided separately, and Consultant will provide approval certificates separately, too. Consequently the Contractor will be entitled to claim for the Payment for each country separately. However, the original milestones justifying payments have not been changed.



## **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 2.5 PLAN OF OPERATIONS FOR THE NEXT PERIOD
- Annex 5: MINUTES OF COORDINATION TEAM MEETINGS

## **Annex 1: FORM 2.2 PROJECT PROGRESS REPORT**

### Form 2.2. PROJECT PROGRESS REPORT

Project title : Caucasus Optical Cable System Supervision				Project number : Traceca1999				Country :Azerbaijan, Georgia, Armenia				Page :			
Planning period : 01-06/2001				Prepared on : 31.3.2001				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 2001						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		▬					24 d	15 d	24 d	14				Flights + DSAs as per contract
2.	Approval of high level designs				▬			10 d	0 d	0 d					
3.	Preshipment test (factory acceptance test)			▬				4 d	2 d	0 d					
4.	Monitoring the deliveries	▬						2 d	2 d	28 d	14				
5.	Monitoring field test					▬		2 d	0 d	15 d	0				
6.	Monitor equipment installation in Georgia	▬						1 d	0 d	10 d	0				
7.	Monitor duct and cable laying in Azerbaijan			▬						1 d	0 d	15 d	0		
8.	Monitoring design works in Armenia				▬			1 d	0 d	10 d	8				
9.	Progress reports	▬						6 d	2 d	12 d	12				
10.	Project meeting in Bryssel							0 d	2 d						
							TOTAL (days)	51 d	23 d	104 d	48 d				

## **Annex 2: FORM 2.3 RESOURCE UTILISATION REPORT**

### FORM 2.3 RECOURSE UTILIZATION REPORT

Project title: Caucasus Optical Cable System Supervision		Project number: Traceca 1999		Country: Azerbaijan, Georgia, Armenia		Page: 1/1	
Planning period: 1.1.2001 - 30.6.2001		Prepared on: 31.3.2001		EC Consultant: Finnroad with Railtelia, Helsinki			
Project objectives: See Synopsis							
SOURCE INPUT	TOTAL PLANNED	PERIOD PLANNED	PERIOD REALISED	TOTAL REALIZED	AVAILABLE FOR REMAINDER		
PERSONNEL							
EC Consultant	208 d	51 d	23 d	83 d	125 d		
Local Experts	350 d	104 d	48 d	149 d	201 d		
Sub-total							
EQUIPMENT AND MATERIAL							
Sub-total							
OTHER INPUTS							
Sub-total							

TOTAL					
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## **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: 31.03.2001		EC Consultant: Finnroad with Railtelia , Helsinki	
Output results	Deviation original plan + or - %	Reason for deviation	Comment or constrains & assumptions
Finalizing the time schedule	- 20%	<ul style="list-style-type: none"> <li>• Realistic time schedule has not yet been prepared together with the Railways and Siemens</li> <li>• High level design documents have not been prepared by Siemens</li> <li>• Start of the design works in Armenia was late</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance of the time-schedule country by country</li> <li>• Permission to accept the documentation separately country by country</li> </ul>
Approval of high level design documents	-100%		
Monitoring production procedure	0 %		Cable and telephone system production has been monitored and the factory test procedure accepted
Approval of the factory test procedure	0 %		

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## **Annex 4: FORM 2.5 PLAN OF OPERATIONS FOR THE NEXT PERIOD**

### Form 2.5. PLAN OF OPERATIONS FOR THE NEXT PERIOD (Work programme)

Project title : Caucasus Optical Cable System Supervision			Project number : Traceca1999			Country :Azerbaijan, Georgia, Armenia			Page :		
Planning period : 04-06/2001			Prepared on : 31.03.2001			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 First half / 2001 (months)						INPUTS			
								PERSONNEL		EQUIPMENT AND MATERIAL	OTHER
No	ACTIVITIES	01	02	03	04	05	06	EC Consultant	Local Experts		
1.	Coordination team meetings							8 d	14 d	Office equipment	Flights + DSAs as per contract
2.	Approval of high level design							10 d			
3.	Preshipment test (factory acceptance tests )							2 d			
4.	Monitoring the deliveries							1 d	14 d		
5.	Monitoring issue factory test/ field test							1 d	10 d		
6.	Monitor equipment installation Georgia							1 d	10 d		
7.	Monitor Cable duct and cable laying Azerbaijan							1 d	10 d		
8.	Monitoring design works in Armenia							1 d	2 d		
9.	Progress reports							3 d	3 d		
							TOTAL (days)	28 d	63 d		

## **Annex 5: MINUTES OF COORDINATION TEAM MEETINGS**

## SUPPLY OF AN OPTICAL CABLE FOR COMMUNICATION AND SIGNALLING TO THE RAILWAYS OF GEORGIA, ARMENIA AND AZERBAIJAN

### COORDINATION TEAM MEETING IN BAKU 8.2. 2001

#### MINUTES OF THE MEETING

Participants:

National Railways:	Mr Panahov
	Mr Karaev
	Mr Garakhanov
	Mr Kamitsky
European Commission:	Mr Niemi
Contractor (Siemens):	Mr Strasser
	Mr Friedrich
	Mr Konzelmann
	Mr Hubert
Supervisor (Finnroad):	Mr Mannonen
	Ms Koskela
	Mr Mamedali

1. Opening of the meeting
  - The meeting was opened and the participants were welcomed. The purpose and agenda of the meeting was discussed and approved.
2. Present situation of the Project

#### Contractor's work situation

- Site-survey has been completed
- High-level design documentation in English will be finalized in 4 weeks
- 180 km duct has been delivered
- First delivery of the cable will be in March, last delivery will be in July
- Delivery of the equipment as a whole will be in May.

#### Civil work situation

- Designs of the cable installation are completed
- The technical rooms have been identified. Reconstruction works of the technical rooms will be ready in May.
- 180 km of duct has been delivered and accepted by the Railways. The delivery acceptance certificates were given to the Finnroad.
- Laying of the duct will begin in February. A subcontractor of the Railways will lay the duct. According to the time schedule shown by the Railways the laying of the duct 550 km will be completed by the end of November.
- Final design of the network has to be done by Mr Hubert in co-operation with the Railways in three weeks. After the final design the Hicom equipment can be ordered from production. Hicom equipment will be delivered in June.

3. Financing of the works

- The Railways stated that they do not have funds for cable blowing works at present and they asked European Commission to finance the blowing works. The EC Project Manager Mr Niemi replied that the EC does not have any budget for this and the Azerbaijan Railways is responsible to finance and execute the cable laying work.
  - The Railways has an offer from a German company for blowing of the cable. The Railways considered the price is too high (600 000 USD) and some other option is needed. Siemens promised to study other options and solutions and they will give a budgetary price for blowing of the cable by 23.2.2001.
  - One option that was discussed would be to use the same blowing machine in all these three Caucasian countries. But the time frame of this project is too critical for that. Railways stated that they will in any case take care of all logistics (storing, transportation, support staff etc.) needed for the blowing.
  - It was also noted that blowing machine is also needed for the maintenance works after the construction works.
  - In order not to delay the overall project schedule the decision regarding financing and implementation of the cable blowing works must be made within six weeks. The blowing of the cable must start in the beginning of April.
4. Time-schedule of the project
- Mr Karaev and Mr Friedrich will finalize the time-schedule of the works in Azerbaijan in four weeks. The time-schedule will be attached in the minutes of the meeting.
5. The effects of the delays in the project
- The time-schedule of the project is critical. The overall time schedule does not allow any further delays in duct or cable installation. The budget of the project is fixed and it does not have any reserves to cover any additional costs.
6. Other matters
- In order to secure the exchange of know-how and give the required competence to operate and maintain the optical cable system Siemens will propose a tailor made training program for the Railways. The program must be agreed with the Railways and it must meet the technical specifications of the project.
  - Siemens asked if it is possible to invoice as per the progress in each country separately. Project Manager Mr Niemi confirmed that it is acceptable to the Commission.
7. Next coordination team meeting
- Next coordination team meeting will be held in May/June.

Signed in Azerbaijan on the 8<sup>th</sup> of February 2001

For Azerbaijan Railways

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**Mr Vahid Karaev**  
Head of Department



For Contractor

For Supervising Consultant

---

**Mr Heiko Friedrich**  
Project Manager

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**Ms Irja Koskela**  
Principal Supervisor

## SUPPLY OF AN OPTICAL CABLE FOR COMMUNICATION AND SIGNALLING TO THE RAILWAYS OF GEORGIA, ARMENIA AND AZERBAIJAN

### COORDINATION TEAM MEETING IN TBILISI 9.2. 2001

#### MINUTES OF THE MEETING

Participants:

National Railways:	Mr Melkadze Mr Rostiashvili Mr Kuchava
European Commission:	Mr Niemi
Contractor (Siemens):	Mr Friedrich Mr Konzelmann Mr Hubert Mr Bialecki
Supervisor (Finnroad):	Mr Mannonen Ms Koskela Mr Chantladze
Sagkavshirmsheni:	Mr Kuchukhidze

#### 8. Opening of the meeting

- The meeting was opened and the participants were welcomed. The purpose and agenda of the meeting was discussed and approved.

#### 9. Present situation of the Project

##### Contractor's work situation

- Site-survey has been completed
- High-level design documentation in English will be finalised in 4 weeks
- 300 km duct has been delivered. The fourth lot of duct (100km) is already on its way to Georgia. The last lot of duct (140 km) will be ready for shipment 15.2.2001.
- First delivery of the cable (300 km) will be in Georgia in March. The last delivery (240 km) will be ready for shipment 15.4.2001.
- OTN equipment is tested at the factory and they are ready for shipment. Final design of the network has to be done by Mr Hubert in co-operation with the Railways in three weeks. After the final design the Hicom equipment can be ordered from production. Hicom equipment will be delivered in May.

##### Civil work situation

- Designs of the cable installation are completed
- About 90% of the reconstruction works of the technical rooms have been done. The reconstruction works will be completed by the end of April.
- 300 km of duct has been delivered and accepted by the Railways. The delivery acceptance certificates have been given to Finnroad.
- 75 km duct has been laid. The laying will be completed by the end of August.

- The blowing of the cable starts in the beginning of April. The subcontractor stated that it is possible to blow 5-6 km of cable /day/section. In some areas it is possible to blow nearly 10 km / day. Blowing techniques has been presented to Siemens by the subcontractor and it is also accepted technically by Siemens.

#### 10. Financing of the works

- It was noted that there have been some delays in the payments to the subcontractor of the Railways. The Railways said that they will solve the financial problems during this month. They also promised that there will not be any further delays in their payments which may cause delays for the progress of the project.

#### 11. Time-schedule of the project

- Mr Melkandze and Mr Friedrich will finalise the time-schedule of the works in Georgia in four weeks. The time-schedule will be attached in the minutes of the meeting.

#### 12. Other matters

- In order to secure the exchange of know-how and give the required competence to operate and maintain the optical cable system Siemens will propose a tailor made training program for the Railways. The program will be agreed with the Railways in two weeks. The program has to meet the technical specifications of the project.
- Siemens asked if it is possible to invoice as per the progress in each country separately. Project Manager Mr Niemi confirmed that it is acceptable to the Commission.
- The conversion between PABX and PTT exchanges will be provided by the Railways.

#### 13. Next coordination team meeting

- Next coordination team meeting will be held in May/June.

Signed in Georgia on the 9<sup>th</sup> of February 2001

For Georgian Railways

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**Mr Igor Melkadze**

Deputy Chairman of Railways, Chief Engineer

For Contractor

For Supervising Consultant

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**Mr Heiko Friedrich**

Project Manager

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**Ms Irja Koskela**

Principal Supervisor

## SUPPLY OF AN OPTICAL CABLE FOR COMMUNICATION AND SIGNALLING TO THE RAILWAYS OF GEORGIA, ARMENIA AND AZERBAIJAN

### COORDINATION TEAM MEETING IN YEREVAN 12.2. 2001

#### AGENDA OF THE MEETING

Participants:

National Railways:	Mr Khrimyan Mr Barseghyan Mr
European Commission:	Mr Niemi
Contractor (Siemens):	Mr Friedrich Mr Konzelmann Mr Hubert Mr Demirkhanyan
Supervisor (Finnroad):	Mr Mannonen Ms Koskela Mr Manukyan
Azimut OJSC:	Mr Hakobyan

#### 14. Opening of the meeting

- The meeting was opened and the participants were welcomed. The purpose and agenda of the meeting was discussed and approved.

#### 15. Present situation of the Project

##### Contractor's work situation

- Site-survey will begin by the end of February
- High-level design documentation in English will be finalized in March
- First lot of duct (100 km) will be delivered x.3.2001. The timing of the other deliveries will be agreed together with the contractors.
- First delivery of the cable will be in May (?).
- Delivery of the equipment as a whole will be in October (?).

##### Civil work situation

- Designs of the first 150 km cable installation will be completed by 1.3.2001. The remaining part of the cable installation will be finalized by 1.5.2001.
- The technical rooms have been identified and the design works for the rooms will be ready by 1.5.2001. Reconstruction works of the technical rooms will be ready before the delivery of the equipment.
- 0 km of duct has been delivered and accepted by the Railways.
- Laying of the duct will begin in April. The duct will be laid by the Railways.
- The Railways will ask offers from subcontractor for blowing of the cable. The blowing of the cable has to be completed before the beginning of next winter season (30.11.2001).

16. Financing of the works

- The Railways stated that the financing of the works is in principle settled. They are in negotiations with the World Bank for a loan to finance the cabling works. World Bank will give their decision soon, if they give the execution straight to the Railways or if the works has to be tendered. In the first case the works could start already in March 2001.

17. Time-schedule of the project

- Mr Barseghyan and Mr Friedrich will finalize the time-schedule of the works in Armenia in three weeks. The time-schedule will be attached in the minutes of the meeting.

18. Other matters

- In order to secure the exchange of know-how and give the required competence to operate and maintain the optical cable system Siemens will propose a tailor made training program for the Railways. The program must be agreed with the Railways and it must meet the technical specifications of the project.
- Siemens asked if it is possible to invoice as per the progress in each country separately. Project Manager Mr Niemi confirmed that it is acceptable to the Commission.

19. Next coordination team meeting

- Next coordination team meeting will be held in May/June.

Signed in Armenia on the 12<sup>th</sup> of February 2001

For Armenian Railways

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**Mr Shaliko Barseghyan**  
Head of Department

For Contractor

For Supervising Consultant

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**Mr Heiko Friedrich**  
Project Manager

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**Ms Irja Koskela**  
Principal Supervisor