

REQUEST FOR PROPOSALS

FEASIBILITY STUDY FOR THE

POSITIVE TRAIN CONTROL SYSTEM

Submission Deadline: **12:00pm NOON**
LOCAL TIME
SEPTEMBER 10, 2009

Submission Place: MR. MOHAMED NABIL
MINISTER'S ADVISOR
MINISTRY OF TRANSPORT
EL NASR ROAD
NASR CITY, CAIRO
EGYPT
(202) 2400-8223

SEALED PROPOSALS SHALL BE CLEARLY MARKED AND RECEIVED PRIOR TO THE TIME AND DATE SPECIFIED ABOVE. PROPOSALS RECEIVED AFTER SAID TIME AND DATE WILL NOT BE ACCEPTED OR CONSIDERED.

REQUEST FOR PROPOSALS

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Section 1: INTRODUCTION

The U.S. Trade and Development Agency (USTDA) has provided a grant in the amount of US\$658,323 to the Government of the Arab Republic of Egypt, acting through the Ministry of Transport (the "Grantee") in accordance with a grant agreement dated June 17, 2009 (the "Grant Agreement"). USTDA has provided a grant to the grantee for a Positive Train Control System Feasibility Study. The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Feasibility Study.

1.1 BACKGROUND SUMMARY

The Egyptian railway sector plays a significant role in the economy. It is a critical mode of transport for lower income Egyptians and consists of 5,085 km of track, concentrated in the Nile Delta and Nile Valley. Egyptian National Railways (ENR) is the government entity within the Ministry of Transport charged with providing rail services and managing railway infrastructure in Egypt. ENR is predominantly a passenger railway conducting large scale operations in excess of 68 billion traffic units in 2007.

In 2006, a series of mass casualty rail accidents in Egypt caused significant public criticism of the government. In response, the government has provided ENR with increased funds to perform essential investments to remedy critical safety problems. Improving safety, increasing capacity on high density lines, increasing freight traffic and reducing capital investment and maintenance expenditures are strategic challenges faced by ENR. Following the 2006 accidents, USTDA funded a grant to the Ministry acting through ENR, for a Rail Traffic Management Technical Assistance (USTDA Activity Number 2006 21029B). The technical assistance was recently completed by the Louis Berger Group and included a visit of ENR officials to the U.S. to meet with rail equipment and service providers. The proposed PTC feasibility study is a complementary follow on project to USTDA's previous support to ENR.

The proposed PTC feasibility study will improve the capacity and safety of the rail system in Egypt. ENR is faced with aging and obsolete infrastructure and equipment and current operations are conducted largely by mechanical and manual procedures, which have proven unsafe, costly and inefficient. The proposed study will serve to introduce the capabilities and functionality of PTC to a wide audience of ENR and Ministry of Transport officials and technical experts. PTC is a critical safety system and a major investment, and a successful study will enable ENR to implement a full PTC system in Egypt.

The study will evaluate the capability of PTC technologies and systems to improve safety of operations on the Egyptian railways; improve capacity of the ENR network to operate more traffic over existing infrastructure, and; optimize ENR's operations including management of trains and adaptation to contingencies in real-time. The study will also develop preliminary performance requirements and specification for a pilot project and a full implementation of PTC

technologies and systems in Egypt. A background Definitional Mission is provided for reference in Annex 2.

1.2 OBJECTIVE

The Terms of Reference (TOR) for this Feasibility Study are attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

Technical proposals are solicited from interested and qualified U.S. firms. The administrative and technical requirements as detailed throughout the Request for Proposals (RFP) will apply. Specific proposal format and content requirements are detailed in Section 3.

The amount for the contract has been established by a USTDA grant of US\$658,323. **The USTDA grant of \$US658,323 is a fixed amount. Accordingly, COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted.** Upon detailed evaluation of technical proposals, the Grantee shall select one firm for contract negotiations.

1.4 CONTRACT FUNDED BY USTDA

In accordance with the terms and conditions of the Grant Agreement, USTDA has provided a grant in the amount of US\$658,323 to the Grantee. The funding provided under the Grant Agreement shall be used to fund the costs of the contract between the Grantee and the U.S. firm selected by the Grantee to perform the TOR. The contract must include certain USTDA Mandatory Contract Clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA Mandatory Contract Clauses are attached at Annexes 3 and 4, respectively, for reference.

Section 2: INSTRUCTIONS TO OFFERORS

2.1 PROJECT TITLE

The project is called Egypt: Positive Train Control System.

2.2 DEFINITIONS

Please note the following definitions of terms as used in this RFP.

The term "Request for Proposals" means this solicitation of a formal technical proposal, including qualifications statement.

The term "Offeror" means the U.S. firm, including any and all subcontractors, which responds to the RFP and submits a formal proposal and which may or may not be successful in being awarded this procurement.

2.3 DEFINITIONAL MISSION REPORT

USTDA sponsored a Definitional Mission to address technical, financial, sociopolitical, environmental and other aspects of the proposed project. A copy of the report is attached at Annex 2 for background information only. Please note that the TOR referenced in the report are included in this RFP as Annex 5.

2.4 EXAMINATION OF DOCUMENTS

Offerors should carefully examine this RFP. It will be assumed that Offerors have done such inspection and that through examinations, inquiries and investigation they have become familiarized with local conditions and the nature of problems to be solved during the execution of the Feasibility Study.

Offerors shall address all items as specified in this RFP. Failure to adhere to this format may disqualify an Offeror from further consideration.

Submission of a proposal shall constitute evidence that the Offeror has made all the above mentioned examinations and investigations, and is free of any uncertainty with respect to conditions which would affect the execution and completion of the Feasibility Study.

2.5 PROJECT FUNDING SOURCE

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US\$658,323.

2.6 RESPONSIBILITY FOR COSTS

Offeror shall be fully responsible for all costs incurred in the development and submission of the proposal. Neither USTDA nor the Grantee assumes any obligation as a result of the issuance of this RFP, the preparation or submission of a proposal by an Offeror, the evaluation of proposals, final selection or negotiation of a contract.

2.7 TAXES

Offerors should submit proposals that note that in accordance with the USTDA Mandatory Contract Clauses, USTDA grant funds shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in the Host Country.

2.8 CONFIDENTIALITY

The Grantee will preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror, which is clearly designated as such by the Offeror, to the extent permitted by the laws of the Host Country.

2.9 ECONOMY OF PROPOSALS

Proposal documents should be prepared simply and economically, providing a comprehensive yet concise description of the Offeror's capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.

2.10 OFFEROR CERTIFICATIONS

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with, and agreement of, any undisclosed group, association, organization, or corporation; (b) that it has not directly or indirectly induced or solicited any other Offeror to put in a false proposal; (c) that it has not solicited or induced any other person, firm, or corporation to refrain from submitting a proposal; and (d) that it has not sought by collusion to obtain for itself any advantage over any other Offeror or over the Grantee or USTDA or any employee thereof.

2.11 CONDITIONS REQUIRED FOR PARTICIPATION

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from the Host Country for up to 20 percent of the amount of the USTDA grant for specific services from the TOR identified in the subcontract. USTDA's nationality requirements, including definitions, are detailed in Annex 3.

2.12 LANGUAGE OF PROPOSAL

All proposal documents shall be prepared and submitted in English, and only English

2.13 PROPOSAL SUBMISSION REQUIREMENTS

The **Cover Letter** in the proposal must be addressed to:

Mr. Mohamed Nabil
Minister's Advisor
Ministry of Transport
Government of Egypt
El Nasr Road, Nasr City
Cairo, Egypt
Phone 202 2400 8223
Fax 202 2400-8723

An Original and eight (8) copies of your proposal must be received at the above address no later than 12:00pm NOON, on September 10, 2009.

Proposals may be either sent by mail, overnight courier, or hand-delivered. Whether the proposal is sent by mail, courier or hand-delivered, the Offeror shall be responsible for actual delivery of the proposal to the above address before the deadline. Any proposal received after the deadline will be returned unopened. The Grantee will promptly notify any Offeror if its proposal was received late.

Upon timely receipt, all proposals become the property of the Grantee.

2.14 PACKAGING

The original and each copy of the proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content including "original" or "copy number x"; the original and eight (8) copies should be collectively wrapped and sealed, and clearly labeled.

Neither USTDA nor the Grantee will be responsible for premature opening of proposals not properly wrapped, sealed and labeled.

2.15 AUTHORIZED SIGNATURE

The proposal must contain the signature of a duly authorized officer or agent of the Offeror empowered with the right to bind the Offeror.

2.16 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for SIXTY (60) days after the proposal due date, and Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

2.17 EXCEPTIONS

All Offerors agree by their response to this RFP announcement to abide by the procedures set forth herein. No exceptions shall be permitted.

2.18 OFFEROR QUALIFICATIONS

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory, feasibility study and/or other services similar to those required in the TOR, as applicable.

2.19 RIGHT TO REJECT PROPOSALS

The Grantee reserves the right to reject any and all proposals.

2.20 PRIME CONTRACTOR RESPONSIBILITY

Offerors have the option of subcontracting parts of the services they propose. The Offeror's proposal must include a description of any anticipated subcontracting arrangements, including the name, address, and qualifications of any subcontractors. USTDA nationality provisions apply to the use of subcontractors and are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all of the applicable USTDA Mandatory Contract Clauses, to be inserted in any subcontract funded or partially funded by USTDA grant funds.

2.21 AWARD

The Grantee shall make an award resulting from this RFP to the best qualified Offeror, on the basis of the evaluation factors set forth herein. The Grantee reserves the right to reject any and all proposals received and, in all cases, the Grantee will be the judge as to whether a proposal has or has not satisfactorily met the requirements of this RFP.

2.22 COMPLETE SERVICES

The successful Offeror shall be required to (a) provide local transportation, office space and secretarial support required to perform the TOR if such support is not provided by the Grantee; (b) provide and perform all necessary labor, supervision and services; and (c) in accordance with best technical and business practice, and in accordance with the requirements, stipulations, provisions and conditions of this RFP and the resultant contract, execute and complete the TOR to the satisfaction of the Grantee and USTDA.

2.23 INVOICING AND PAYMENT

Deliverables under the contract shall be delivered on a schedule to be agreed upon in a contract with the Grantee. The Contractor may submit invoices to the designated Grantee Project Director in accordance with a schedule to be negotiated and included in the contract. After the Grantee's approval of each invoice, the Grantee will forward the invoice to USTDA. If all of the requirements of USTDA's Mandatory Contract Clauses are met, USTDA shall make its respective disbursement of the grant funds directly to the U.S. firm in the United States. All payments by USTDA under the Grant Agreement will be made in U.S. currency. Detailed provisions with respect to invoicing and disbursement of grant funds are set forth in the USTDA Mandatory Contract Clauses attached in Annex 4.

Section 3: PROPOSAL FORMAT AND CONTENT

To expedite proposal review and evaluation, and to assure that each proposal receives the same orderly review, all proposals must follow the format described in this section.

Proposal sections and pages shall be appropriately numbered and the proposal shall include a Table of Contents. Offerors are encouraged to submit concise and clear responses to the RFP. Proposals shall contain all elements of information requested without exception. Instructions regarding the required scope and content are given in this section. The Grantee reserves the right to include any part of the selected proposal in the final contract.

The proposal shall consist of a technical proposal only. A cost proposal is NOT required because the amount for the contract has been established by a USTDA grant of US\$658,323, which is a fixed amount.

Offerors shall submit one (1) original and eight (8) copies of the proposal. Proposals received by fax cannot be accepted.

Each proposal must include the following:

- Transmittal Letter,
- Cover/Title Page,
- Table of Contents,
- Executive Summary,
- Company Information,
- Organizational Structure, Management Plan, and Key Personnel,
- Technical Approach and Work Plan, and
- Experience and Qualifications.

Detailed requirements and directions for the preparation of the proposal are presented below.

3.1 EXECUTIVE SUMMARY

An Executive Summary should be prepared describing the major elements of the proposal, including any conclusions, assumptions, and general recommendations the Offeror desires to make. Offerors are requested to make every effort to limit the length of the Executive Summary to no more than five (5) pages.

3.2 COMPANY INFORMATION

For convenience, the information required in this Section 3.2 may be submitted in the form attached in Annex 6 hereto.

3.2.1 Company Profile

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), the information below must be provided for each subcontractor.

1. Name of firm and business address (street address only), including telephone and fax numbers.
2. Year established (include predecessor companies and year(s) established, if appropriate).
3. Type of ownership (e.g. public, private or closely held).
4. If private or closely held company, provide list of shareholders and the percentage of their ownership.
5. List of directors and principal officers (President, Chief Executive Officer, Vice-President(s), Secretary and Treasurer; provide full names including first, middle and last). Please place an asterisk (*) next to the names of those principal officers who will be involved in the Feasibility Study.
6. If Offeror is a subsidiary, indicate if Offeror is a wholly-owned or partially-owned subsidiary. Provide the information requested in items 1 through 5 above for the Offeror's parent(s).
7. Project Manager's name, address, telephone number, e-mail address and fax number .

3.2.2 Offeror's Authorized Negotiator

Provide name, title, address, telephone number, e-mail address and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

3.2.3 Negotiation Prerequisites

1. Discuss any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and reflect such impact within the project schedule.
2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

3.2.4 Offeror's Representations

If any of the following representations cannot be made, or if there are exceptions, the Offeror must provide an explanation.

1. Offeror is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State of _____. The Offeror has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the Feasibility Study. The Offeror is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment, or ineligible for the award of contracts by any federal or state governmental agency or authority. The Offeror has included, with this proposal, a certified copy of its Articles of Incorporation, and a certificate of good standing issued by the State of _____.
2. Neither the Offeror nor any of its principal officers have, within the three-year period preceding this RFP, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
3. Neither the Offeror, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.
4. There are no federal or state tax liens pending against the assets, property or business of the Offeror. The Offeror, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.
5. The Offeror has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The Offeror has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

The selected Offeror shall notify the Grantee and USTDA if any of the representations included in its proposal are no longer true and correct at the time of its entry into a contract with the Grantee.

3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

Describe the Offeror's proposed project organizational structure. Discuss how the project will be managed including the principal and key staff assignments for this Feasibility Study. Identify the Project Manager who will be the individual responsible for this project. The Project Manager shall have the responsibility and authority to act on behalf of the Offeror in all matters related to the Feasibility Study.

Provide a listing of personnel (including subcontractors) to be engaged in the project, including both U.S. and local subcontractors, with the following information for key staff: position in the project; pertinent experience, curriculum vitae; other relevant information. If subcontractors are to be used, the Offeror shall describe the organizational relationship, if any, between the Offeror and the subcontractor.

A manpower schedule and the level of effort for the project period, by activities and tasks, as detailed under the Technical Approach and Work Plan shall be submitted. A statement confirming the availability of the proposed project manager and key staff over the duration of the project must be included in the proposal.

3.4 TECHNICAL APPROACH AND WORK PLAN

Describe in detail the proposed Technical Approach and Work Plan (the "Work Plan"). Discuss the Offeror's methodology for completing the project requirements. Include a brief narrative of the Offeror's methodology for completing the tasks within each activity series. Begin with the information gathering phase and continue through delivery and approval of all required reports.

Prepare a detailed schedule of performance that describes all activities and tasks within the Work Plan, including periodic reporting or review points, incremental delivery dates, and other project milestones.

Based on the Work Plan, and previous project experience, describe any support that the Offeror will require from the Grantee. Detail the amount of staff time required by the Grantee or other participating agencies and any work space or facilities needed to complete the Feasibility Study.

3.5 SECTION 5: EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications that are relevant to the objectives and TOR for the Feasibility Study. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the project. The Offeror shall provide information with respect to relevant experience and qualifications of key staff proposed. The Offeror shall include letters of commitment from the individuals proposed confirming their availability for contract performance.

As many as possible but not more than six (6) relevant and verifiable project references must be provided for the Offeror and any subcontractor, including the following information:

Project name,
 Name and address of client (indicate if joint venture),
 Client contact person (name/ position/ current phone and fax numbers),
 Period of Contract,
 Description of services provided,
 Dollar amount of Contract, and
 Status and comments.

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to or larger in scope than the Feasibility Study as described in this RFP.

Section 4: AWARD CRITERIA

Individual proposals will be initially evaluated by a Procurement Selection Committee of representatives from the Grantee. The Committee will then conduct a final evaluation and completion of ranking of qualified Offerors. The Grantee will notify USTDA of the best qualified Offeror, and upon receipt of USTDA's no-objection letter, the Grantee shall promptly notify all Offerors of the award and negotiate a contract with the best qualified Offeror. If a satisfactory contract cannot be negotiated with the best qualified Offeror, negotiations will be formally terminated. Negotiations may then be undertaken with the second most qualified Offeror and so forth.

The selection of the Contractor will be based on the following criteria:

	<i>Maximum Points</i>
1. General Experience and Qualifications (10 points)	
1.1 Overall experience of the firm	3
1.2 Overseas experience	3
1.3 Experience in Arab countries	4
2. Specific Applicable Experience (15 points)	
2.1 Amount of experience in the study and design facilities for cold storage, cold chains, date palms horticulture, post harvest treatment, and agricultural marketing	15
3. Approach and Methodology (30 points)	
3.1 Knowledge of proposed work and understanding of the services to be performed as demonstrated by the specific details of the firm's proposal	15
3.2 Appropriateness of the proposed methodology	

and work plan	10
3.3 Appropriateness of the proposed Training Program as demonstrated by the specific details of firm's proposal	5
4. Qualifications of Proposed Key Personnel (35 points)	
4.1 Qualifications of project leader	20
4.2 Qualifications of other team professionals	15
5. Overall Impression (10 points)	10
Total	100

Proposals that do not include all requested information may be considered non-responsive.

Price will not be a factor in contractor selection.

ANNEX 1

Mr. Mohamed Nabil, Minister's Advisor, Ministry of Transport, Government of Egypt, El Nasr Road, Nasr City, Cairo, Egypt, Phone 202 2400-8223, Fax 202 2400-8723

B-Positive Train Control System Feasibility Study

POC: John Kusnierek, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. Positive Train Control System Feasibility Study. The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms that are qualified on the basis of experience and capability to develop a feasibility study for a Positive Train Control System.

The Egyptian railway sector plays a significant role in the economy. It is a critical mode of transport for lower income Egyptians and consists of 5,085 km of track, concentrated in the Nile Delta and Nile Valley. Egyptian National Railways (ENR) is the government entity within the Ministry of Transport charged with providing rail services and managing railway infrastructure in Egypt. ENR is predominantly a passenger railway conducting large scale operations in excess of 68 billion traffic units in 2007.

In 2006, a series of mass casualty rail accidents in Egypt caused significant public criticism of the government. In response, the government has provided ENR with increased funds to perform essential investments to remedy critical safety problems. Improving safety, increasing capacity on high density lines, increasing freight traffic and reducing capital investment and maintenance expenditures are strategic challenges faced by ENR.

The proposed PTC feasibility study will improve the capacity and safety of the rail system in Egypt. ENR is faced with aging and obsolete infrastructure and equipment and current operations are conducted largely by mechanical and manual procedures, which have proven unsafe, costly and inefficient. The proposed study will serve to introduce the capabilities and functionality of PTC to a wide audience of ENR and Ministry of Transport officials and technical experts. PTC is a critical safety system and a major investment, and a successful study will enable ENR to implement a full PTC system in Egypt.

The study will evaluate the capability of PTC technologies and systems to improve safety of operations on the Egyptian railways; improve capacity of the ENR network to operate more traffic over existing infrastructure, and; optimize ENR's operations including management of trains and adaptation to contingencies in real-time. The study will also develop preliminary performance requirements and specification for a pilot project and a full implementation of PTC technologies and systems in Egypt.

The U.S. firm selected will be paid in U.S. dollars from a \$658,323 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

A detailed Request for Proposals (RFP), which includes requirements for the Proposal, the Terms of Reference, and a background definitional mission/desk study report are

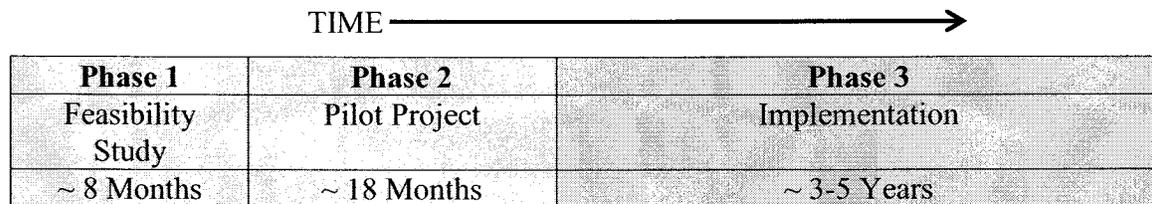
available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901. To request the RFP in PDF format, please go to: <https://www.ustda.gov/USTDA/FedBizOpps/RFP/rfpform.asp>. Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for the RFP will be honored. Please check your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day. Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

Only U.S. firms and individuals may bid on this USTDA financed activity. Interested firms, their subcontractors and employees of all participants must qualify under USTDA's nationality requirements as of the due date for submission of qualifications and proposals and, if selected to carry out the USTDA-financed activity, must continue to meet such requirements throughout the duration of the USTDA-financed activity. All goods and services to be provided by the selected firm shall have their nationality, source and origin in the U.S. or host country. The U.S. firm may use subcontractors from the host country for up to 20 percent of the USTDA grant amount. Details of USTDA's nationality requirements and mandatory contract clauses are also included in the RFP.

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 12:00pm noon, September 10, 2009 at the above address. Evaluation criteria for the Proposal are included in the RFP. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

ANNEX 2

The proposed project is a **Feasibility Study** to support the evaluation of Positive Train Control system(s), goods, services, and technologies for use on the Egyptian National Railways; support the development of a PTC system architecture and requirements for Egypt; prepare ENR to procure a PTC pilot project, and; prepare a scope and economic assessment for a full implementation of PTC on the majority of the ENR network. The envisioned series of events beginning with the USTDA-financed feasibility Study and leading to a full implementation and realization of potential US-origin exports is illustrated below.



Introduction of PTC technology has the potential to help ENR meet many of its strategic objectives including reduction of operating and capital expenditures, creation of economic benefits through improved safety (reduction in accident costs and delays), improvement of capacity of existing infrastructure (reduced congestion delays and greater throughput of traffic units over time), and improved utilization of rolling stock.

PROJECT SPONSOR CAPABILITIES AND COMMITMENT

This project has the support of the Ministry of Transport and Egyptian National Railways as expressed by officials from both organizations.

While ENR operations are conducted largely by mechanical and manual procedures the organization has the capability to manage sophisticated technology projects. This was demonstrated during the Contractor’s visit by a review of a pilot project for GPS/GIS-based system for locomotive location determination. The project is supported by an ENR Project Management Unit (PMU). They have successfully managed to install and operate a state-of-the-art system with onboard and central office components covering several hundred locomotives that provides ENR with fleet location awareness and some limited data transmission capabilities.

ENR’s project management capabilities are expected to further improve in the near future for the following reasons:

1. The ongoing Italian twinning project increases management capacity and is providing daily transfer of know-how from a railway that regularly implements highly complex projects involving the latest technologies;
2. New officials are being introduced into the Ministry of Transport and ENR with significant experience in modern private sector business operations, and;

3. Major railway projects financed by a World Bank loan for \$250 million are beginning. These projects include tranches of funding for modernization of management and operating practices which will enhance ENR's capacity to support complex technology projects in the short and medium term.

IMPLEMENTATION FINANCING

It is estimated that a Pilot project on a selected network segment using a small number of dedicated locomotives would cost several million dollars depending on the scope. An implementation of a full PTC system on ENR in "turnkey" fashion (requiring significant training and technology transfer) is estimated to require approximately \$100 million USD investment in acquisition of goods, services and technologies; of this approximately 85% is likely to be US sourced goods, services and technologies. ENR was allocated approximately 5 billion Egyptian pounds for safety and operational improvements following the recent series of passenger train accidents, half in direct funding and half in authorization to incur sovereign loans. Ministry of Transportation officials have indicated that ENR would anticipate financing a Phase 2 Pilot project through their internal capital program funding (direct budget funds). The most likely source of funding for a Phase 3 Implementation would be the borrowings by ENR, with sovereign guarantees authorized under the railway safety and operational improvements program.

U.S. EXPORT POTENTIAL

ENR officials indicated that all procurements that may result from the grant-financed project should be subject to competitive tenders in which international suppliers can participate providing equal access to US firms. The equipment and services that are likely to be exported from the US for a Pilot Project and Implementation include but are not limited to:

- **Goods:** Cables; wires; fasteners; plastic and metal equipment and electronics housings; flat panel displays; micro-electronic chips; circuits; electromechanical sensors; networked computer systems; electric motors; transmission/receiving equipment and other electronic devices.
- **Services:** Software engineering services; network engineering services; telecommunications engineering services; business and economic analysis services; project management services; railway infrastructure engineering services; railway signaling and communications engineering services; rail vehicle mechanical and controls engineering services; documentation preparation services and technical writing, and; training and education;
- **Technologies:** Intellectual property in the form of software and service licenses, training and certification.

A PTC system, while exhibiting certain core capabilities, is a custom product. The goods services and technologies may vary significantly depending upon the specifications,

performance requirements and the characteristics of the railway operation – size of the railway infrastructure and telecommunications system(s) networks, the rolling stock fleet size and characteristics and the frequency, density and characteristics of operations. Below are illustrated a few examples of the physical components provided by US vendors that make up a PTC system.

Presently the following US firms are identified as providers of positive train control systems and key component technologies:

- General Electric Transportation;
- Ansaldo STS (purchased Union Switch & Signal, a major US communication & signaling firm);
- Wabtec Railway Electronics;
- Invensys (purchased Safetran Systems a major US communication & signaling firm);
- Lockheed Martin Corporation;
- Meteor Communications Corp.

The Contractor has had substantive discussions with GE, Ansaldo, Wabtec and Lockheed Martin who have all expressed interest in potentially participating in a USTDA grant-financed project, a Phase 2 Pilot, and a Phase 3 Implementation. Lockheed Martin presented to ENR last year on their PTC technology offerings. Wabtec and GE sent representatives to meet with ENR and Ministry of Transport officials in advance of the Contractor's DM visit and specifically presented their PTC system offerings to the host country officials.

FOREIGN COMPETITION AND MARKET ENTRY ISSUES

The Egyptian railway market is highly competitive but is open to US companies. General Electric Transportation, EMD (former GM) and Wabtec are major US suppliers with strong established markets in Egypt. Many of ENR's locomotives are of GE or EMD manufacture.

There is strong competition from foreign suppliers in Egypt, particularly from European companies. Siemens is one notable European company that is active in the railway signaling and communications field in Egypt. Siemens has an installed base of automatic train stop equipment (ZUB-100 "cab signals") on portions of ENR's network that is being upgraded to the ZUB-200 product. This improved system provides limited functionality compared with PTC technologies. Other significant firms in the railway signaling and communications field that are active in Egypt include Thales, Invensys, Alstom, Systra, and Ansaldo STS.

ENR presently uses largely manual or mechanical procedures for traffic control and management across the bulk of its network. From the perspective of a supplier this market is presently open for a wide range of modern signaling and communications solutions.

Procurement in Egypt, though open, is reputedly often problematic. Lack of transparency, delays, disorganization and poor communication were among the challenges cited by

vendors. Reportedly requests to change or renegotiate sales agreements or contracts are common. Any railway supply company attempting to do business in Egypt will likely find it necessary invest in a permanent presence on the ground in order to successfully develop the market for their goods. They must also have adequate resources for a long-term commitment necessary to achieve market entry and sustainment.

DEVELOPMENTAL IMPACT

Primary Developmental Benefits

Infrastructure: A PTC implementation will enable more efficient utilization of existing railway infrastructure by implementing a flexible block system based upon train performance characteristics. This should dramatically improve the throughput of the network by enabling more trains to run closer together while improving safety.

Human Capacity Building: A PTC implementation (and the development process) will require development of a team of high-level professional managers at ENR in the areas of operations and engineering of software, network systems, telecommunications, railway signaling, infrastructure and rolling stock controls. A corresponding technical workforce of field service and maintenance personnel will also need to be developed to maintain the physical components of the office, wayside and rolling stock functions. Drivers will also require training in the new software and hardware that will manage the locomotive control interface.

Technology Transfer: PTC development and implementation will transfer a sophisticated information technology/SCADA system to ENR.

Productivity Improvements: A PTC implementation will eliminate significant amounts of wayside equipment enabling a re-training and re-allocation of a large number of unskilled or semi-skilled workers at ENR who presently perform essentially manual labor jobs such as raising or lowering gates at grade crossings, handing physical block occupancy tokens to locomotive drivers, or operating mechanical signals and interlockings by manipulating levers. These employees appear to be substantially underutilized in many cases. Potentially the areas of fundamental maintenance of rolling stock and infrastructure could benefit significantly from this reallocation of valuable human resources.

Market-Oriented Reforms: By increasing network capacity, particularly to handle mixed traffic, PTC implementation should support ENR's plans to increase freight traffic capacity which is of direct benefit ongoing efforts to foster private enterprise.

Alternatives

As observed earlier, ENR is presently relying on rail traffic control systems that are largely manual and mechanical. Therefore ENR could achieve significant improvements in safety and capacity by implementing a wide variety of modern rail traffic control

technologies, components and systems both centralized and decentralized that are available on the market. However PTC is a next-generation rail traffic control system with functionality, performance and cost-savings that cannot be achieved by even sophisticated CTC systems presently fully implemented at major US and European railways. The potential to eliminate significant amounts of existing wayside infrastructure and bypass the expensive capital and operating cost of the wayside infrastructure associated with alternative systems is very appealing to ENR. The best analogy, and one applicable to Egypt and other lower/middle income countries, is how wireless technologies have enabled access to voice and data communications systems at relatively low cost for a huge part of the population, bypassing the need for installation of expensive physical infrastructure such as cabling and traditional mechanical relay switching stations.

IMPACT ON THE ENVIRONMENT

The Terms of Reference includes a preliminary environmental impact review. As PTC is based on wireless data transmission, the impact of radio frequency energy emitted by the system should be assessed. Overall a PTC implementation is expected to have a positive impact on the environment. Increasing capacity and safety of the rail system should divert passenger and freight traffic from the congested roads and highways of Egypt, reducing consumption of petroleum products and production of motor vehicle emissions.

IMPACT ON U.S. LABOR

A PTC Feasibility Study, Pilot Project or Implementation are not expected to:

- a. Incentivize any company currently located in the US to relocate outside of the US or to incentivize any such firm to reduce employment because US production is being replaced by production outside the US.
- b. Violate internationally recognized workers rights.
- c. Directly assist establishing or expanding production of any commodity for export by any country other than the United States, if the commodity is likely to be in surplus on world markets at the time the resulting productive capacity is expected to become operative and if the assistance will cause substantial injury to United States producers of the same, similar, or competing commodity.

QUALIFICATIONS

The recommended team to conduct this Feasibility Study is as follows:

<u>No.</u>	<u>Position</u>	<u>Min. Years Experience</u>
01.	Senior Engineering Project Manager	20
02.	Signaling & Communications Senior Engineer	15
03.	Telecommunications Senior Engineer	15

04.	Railways Mechanical/Controls Senior Engineer	15
05.	Railways Infrastructure Senior Engineer	12
06.	Information Technology Specialist	10
07.	Economic/Business Analyst	7
08.	Project Coordinator/Technical Writer	5

Although many of the top executives at ENR speak English to some degree we believe one or more technical Arabic language interpreters/translators will be a necessary to support the team. Interpreter(s) should have a high level of proficiency with engineering, information technology, business and economic terminology and preferably experience specifically with railway terminology.

JUSTIFICATION

While Egypt is a relatively open market for signaling and communications technology European firms in particular benefit from a variety of foreign assistance and support programs focused on developing the Egyptian market for their domestic industries. An example of this is the Italian “twinning” program. European railway executives embedded in the ENR structure naturally encourage adoption of European standards, specifications and practices and advocate on behalf of European suppliers. European suppliers also benefit from geographic proximity to the market and in some cases historical commercial and political links between Europe and the Maghreb. In this sense a USTDA grant is a tool that helps to level the playing field for market entry and development for US goods, services and technologies.

Railway passenger service is provided as a social service to a very large population of economically disadvantaged Egyptians. Relatively cheap rail travel – mobility – is considered a right by poorer Egyptians. The recent series of accidents caused significant public criticism of the government. A PTC Implementation will improve the capacity and safety of this system. By reducing costs it will enable the government to maintain the extremely low cost fare structure while reducing the burden on the state budget (historically approaching 1% of GDP annually) enabling some increased funding of other development priorities. This will contribute to political stability, a key goal of US policy in Egypt.

A USTDA feasibility study will serve to introduce the capabilities and functionality of PTC to a wide audience of ENR and Ministry of Transport officials and technical experts. **There is great interest in PTC technology concepts in Egypt but limited awareness of the details of capabilities, benefits and strengths of these systems.** PTC is a safety critical system and a major investment. Railway managers around the world are traditionally very conservative about changes in operations and long-term capital investments. A successful Feasibility Study – dealing with the unique situations specific to ENR’s operations - will be absolutely necessary to begin to provide the information to this audience that will enable them to begin their decision making process supporting a full implementation.

ANNEX 3



**U.S. TRADE AND DEVELOPMENT AGENCY
Arlington, VA 22209-2131**

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

The purpose of USTDA's nationality, source, and origin requirements is to assure the maximum practicable participation of American contractors, technology, equipment and materials in the prefeasibility, feasibility, and implementation stages of a project.

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

Except as USTDA may otherwise agree, each of the following provisions shall apply to the delivery of goods and services funded by USTDA under this Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from host country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for implementation of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in host country are not subject to the above restrictions. USTDA will make available further details concerning these standards of eligibility upon request.

NATIONALITY:

1) Rule

Except as USTDA may otherwise agree, the Contractor for USTDA funded activities must be either a U.S. firm or a U.S. individual. Prime contractors may utilize U.S.

subcontractors without limitation, but the use of host country subcontractors is limited to 20% of the USTDA grant amount.

2) Application

Accordingly, only a U.S. firm or U.S. individual may submit proposals on USTDA funded activities. Although those proposals may include subcontracting arrangements with host country firms or individuals for up to 20% of the USTDA grant amount, they may not include subcontracts with third country entities. U.S. firms submitting proposals must ensure that the professional services funded by the USTDA grant, to the extent not subcontracted to host country entities, are supplied by employees of the firm or employees of U.S. subcontractor firms who are U.S. individuals.

Interested U.S. firms and consultants who submit proposals must meet USTDA nationality requirements as of the due date for the submission of proposals and, if selected, must continue to meet such requirements throughout the duration of the USTDA-financed activity. These nationality provisions apply to whatever portion of the Terms of Reference is funded with the USTDA grant.

3) Definitions

A "U.S. individual" is (a) a U.S. citizen, or (b) a non-U.S. citizen lawfully admitted for permanent residence in the U.S. (a green card holder).

A "U.S. firm" is a privately owned firm which is incorporated in the U.S., with its principal place of business in the U.S., and which is either (a) more than 50% owned by U.S. individuals, or (b) has been incorporated in the U.S. for more than three (3) years prior to the issuance date of the request for proposals; has performed similar services in the U.S. for that three (3) year period; employs U.S. citizens in more than half of its permanent full-time positions in the U.S.; and has the existing capability in the U.S. to perform the work in question.

A partnership, organized in the U.S. with its principal place of business in the U.S., may also qualify as a "U.S. firm" as would a joint venture organized or incorporated in the United States consisting entirely of U.S. firms and/or U.S. individuals.

A nonprofit organization, such as an educational institution, foundation, or association may also qualify as a "U.S. firm" if it is incorporated in the United States and managed by a governing body, a majority of whose members are U.S. individuals.

SOURCE AND ORIGIN:

1) Rule

In addition to the nationality requirement stated above, any goods (e.g., equipment and materials) and services related to their shipment (e.g., international transportation and insurance) funded under the USTDA Grant Agreement must have their source and origin in the United States, unless USTDA otherwise agrees. However, necessary purchases of goods and project support services which are unavailable from a U.S. source (e.g., local food, housing and transportation) are eligible without specific USTDA approval.

2) Application

Accordingly, the prime contractor must be able to demonstrate that all goods and services purchased in the host country to carry out the Terms of Reference for a USTDA Grant Agreement that were not of U.S. source and origin were unavailable in the United States.

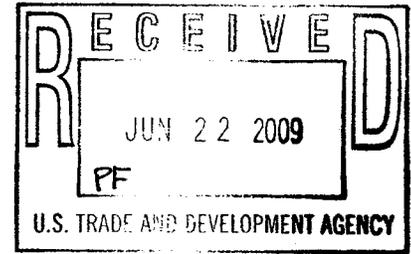
3) Definitions

“Source” means the country from which shipment is made.

“Origin” means the place of production, through manufacturing, assembly or otherwise.

Questions regarding these nationality, source and origin requirements may be addressed to the USTDA Office of General Counsel.

ANNEX 4



GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and the Government of the Arab Republic of Egypt, acting through the Ministry of Transport ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US\$658,323 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed Positive Train Control System ("Project") in Egypt ("Host Country").

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1. USTDA Funding

The funding to be provided under this Grant Agreement shall be used to fund the costs of a contract between the Grantee and the U.S. firm selected by the Grantee ("Contractor") under which the Contractor will perform the Study ("Contract"). Payment to the Contractor will be made directly by USTDA on behalf of the Grantee with the USTDA Grant funds provided under this Grant Agreement.

2. Terms of Reference

The Terms of Reference for the Study ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The Study will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the Study shall also be included in the Contract.

3. Standards of Conduct

USTDA and the Grantee recognize the existence of standards of conduct for public officials, and commercial entities, in their respective countries. The parties to this Grant Agreement and the Contractor shall observe these standards, which include not accepting payment of money or anything of value, directly or indirectly, from any person for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study.

4. Grantee Responsibilities

The Grantee shall undertake its best efforts to provide reasonable support for the Contractor, such as local transportation, office space, and secretarial support.

5. USTDA as Financier

(A) USTDA Approval of Competitive Selection Procedures

Selection of the U.S. Contractor shall be carried out by the Grantee according to its established procedures for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities* (www.fedbizopps.gov). Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA Approval of Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 17 below upon selection of the Contractor to perform the Study. Upon approval of this selection by USTDA, the Grantee and the Contractor shall then enter into a contract for performance of the Study. The Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Study that they were not selected.

(C) USTDA Approval of Contract Between Grantee and Contractor

The Grantee and the Contractor shall enter into a contract for performance of the Study. This contract, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing. To expedite this approval, the Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 17 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract.

(D) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of the contract and any amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of funding the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Grantee or USTDA from asserting any right they might have against the

Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Grantee or USTDA.

(E) Grant Agreement Controlling

Regardless of USTDA approval, the rights and obligations of any party to the contract or subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and any contract or subcontract funded by the Grant Agreement, the Grant Agreement shall be controlling.

6. Disbursement Procedures

(A) USTDA Approval of Contract Required

USTDA will make disbursements of Grant funds directly to the Contractor only after USTDA approves the Grantee's contract with the Contractor.

(B) Contractor Invoice Requirements

The Grantee should request disbursement of funds by USTDA to the Contractor for performance of the Study by submitting invoices in accordance with the procedures set forth in the USTDA Mandatory Clauses in Annex II.

7. Effective Date

The effective date of this Grant Agreement ("Effective Date") shall be the date of signature by both parties or, if the parties sign on different dates, the date of the last signature.

8. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is March 25, 2011, is the date by which the parties estimate that the Study will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Grant Agreement for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

9. USTDA Mandatory Clauses

All contracts funded under this Grant Agreement shall include the USTDA mandatory clauses set forth in Annex II to this Grant Agreement. All subcontracts funded or partially funded with USTDA Grant funds shall include the USTDA mandatory clauses, except for clauses B(1), G, H, I, and J.

10. Use of U.S. Carriers

(A) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(B) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

11. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from Host Country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

12. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

13. Cooperation Between Parties and Follow-Up

The parties will cooperate to assure that the purposes of the Grant Agreement are accomplished. For five (5) years following receipt by USTDA of the Final Report (as defined in Clause I of Annex II), the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project.

14. Implementation Letters

To assist the Grantee in the implementation of the Study, USTDA may, from time to time, issue implementation letters that will provide additional information about matters covered by the Grant Agreement. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by the Grant Agreement.

15. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the Study and the Grant Agreement adequate to demonstrate implementation of its responsibilities under the Grant Agreement, including the selection of contractors, receipt and approval of contract deliverables, and approval or disapproval of contractor invoices for payment by USTDA. Such books, records, and other documents shall be separately maintained for three (3) years after the date of the final disbursement by USTDA. The Grantee shall afford USTDA or its authorized representatives the opportunity at reasonable times to review books, records, and other documents relating to the Study and the Grant Agreement.

16. Representation of Parties

For all purposes relevant to the Grant Agreement, the Government of the United States of America will be represented by the U. S. Ambassador to Host Country or USTDA and Grantee will be represented by the Minister of Transport. The parties hereto may, by written notice, designate additional representatives for all purposes under the Grant Agreement.

17. Addresses of Record for Parties

Any notice, request, document, or other communication submitted by either party to the other under the Grant Agreement shall be in writing or through a wire or electronic medium which produces a tangible record of the transmission, such as a telegram, cable or facsimile, and will be deemed duly given or sent when delivered to such party at the following:

To: Mr. Mohamed Nabil
Minister's Advisor

Ministry of Transport
Government of Egypt
El Nasr Road, Nasr City
Cairo, Egypt
Mnabil@mot.gov.eg

Phone: 202-22628880
Fax: (202) 261-0510

To: U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial Section of the U.S. Embassy in Host Country with a copy of each communication sent to USTDA.

Any communication relating to this Grant Agreement shall include the following fiscal data:

Appropriation No.: 119/101001
Activity No.:2009-21021A
Reservation No.:2009210023
Grant No.:GH2009210007

18. Termination Clause

Either party may terminate the Grant Agreement by giving the other party thirty (30) days advance written notice. The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Study, except for payments which they are committed to make pursuant to noncancellable commitments entered into with third parties prior to the written notice of termination.

19. Non-waiver of Rights and Remedies

No delay in exercising any right or remedy accruing to either party in connection with the Grant Agreement shall be construed as a waiver of such right or remedy.

20. U.S. Technology and Equipment

By funding this Study, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed for Project implementation.

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IN WITNESS WHEREOF, the Government of the United States of America and the Government of the Arab Republic of Egypt, each acting through its duly authorized representative, have caused this Agreement to be signed in the English language in their names and delivered as of the day and year written below. In the event that this Grant Agreement is signed in more than one language, the English language version shall govern.

For the Government of the
United States of America

For the Government of the Arab
Republic of Egypt

By: Margaret Scobey

By: [Signature]

Date: June 17, 2009

Date: 17-6-09

Witnessed:

Witnessed:

By: [Signature]

By: [Signature]
6-17-09

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

Terms of Reference

The Ministry of Transport of the Arab Republic of Egypt has expressed interest in Positive Train Control systems and technologies and their potential application to the operations of Egyptian National Railways. The purpose and objective of the proposed Study are to:

- a) Evaluate the capability of positive train control (PTC) technologies and systems to: improve safety of operations on the Egyptian National Railway (ENR); improve capacity of the ENR network to operate more traffic over existing infrastructure, and; optimize ENR's operations including management of trains and adaptation to contingencies in real-time;
- b) Develop a preliminary performance requirements specification for implementation of PTC technologies and systems on ENR;
- c) Perform an assessment of the market for potential goods, services and technologies for PTC systems for the pilot and implementation phases;
- d) Prepare specifications and cost estimates for a PTC pilot project;
- e) Analyze the business and economic case for an implementation of a PTC system on the ENR and develop a conceptual specification.

Task 1 - Collection and Review of Existing Data

Collect and review with the Grantee the current technical state of the system and operations to include: infrastructure; rolling stock; signaling, control and telecommunications, systems interfaces; and operations practices and management. The Contractor shall identify and review current and planned projects at ENR relevant to a PTC system pilot project or full implementation. This task will include review of the reports recently completed by Booz-Allen Hamilton, Systra USA, and Transurb Technirail as well as the ENR Information Technology Master Plan through 2010. The Grantee shall provide these reports as well as the ENR Information Technology Master Plan to the Contractor.

- *Deliverable: Upon completion of the task, the Contractor shall prepare a report detailing the findings of the data collection.*

Task 2 – Preliminary Definition of the PTC Territory and Scope

The Contractor shall evaluate where PTC should be implemented on the ENR railway network. The Contractor shall define the physical scope of a PTC system implementation. The Contractor shall describe the geographic extent of infrastructure network coverage and the vehicle fleet to be integrated into such a system as well as address the equipping of the fleet.

- *Deliverable: Upon completion of the task, the Contractor shall prepare a report that defines the physical scope of the PTC system.*

Task 3 - Definition of Performance Requirements

The Contractor, in coordination with the Grantee, shall define the performance requirements for the major components of a PTC system appropriate for an implementation across the ENR network. The PTC system performance requirements shall include, but not be limited to:

- Issuance of movement authorities;
- Capability to transmit safety critical data wirelessly between vehicles, wayside components and the control center(s);
- Location determination capabilities for all rail vehicles sufficiently accurate to enable track discrimination in interlockings and through switches;
- Detection of switch position and physical switch control;
- Train integrity monitoring;
- Human-machine interfaces utilizing both Arabic and English characters;
- Presentation of operational information in real-time to operators and managers in the form of timetables, train time-distance charts, and other graphical formats;
- Implementation of flexible block signaling based on train performance characteristics;
- Supervising adherence of operations to the safety logic defined in the operating regulations;
- Supervision and control of train routing in real-time;
- Protection against collisions with automated enforcement and automated train stop;
- Protection of track maintenance crews;
- Utilization of open systems and commercial-off-the-shelf technologies to the maximum extent possible;
- Functional integration with existing and planned ENR train control and signalization systems and protocols, both as an overlay and as an independent system interchanging traffic with adjacent systems; and
- Prevention of over-speed accidents.

This work shall be detailed within with the following four functional areas:

a.) Control and Management (Office):

These are the office-based overall supervisory control systems that will support dispatching and provide system management, safety-critical logic implementation, and the human-machine interface with supervisory and management personnel. This functional area includes the systems integration function, software databases containing the network infrastructure, vehicle performance, physical specifications, system operating and safety logic.

b.) Vehicle Systems:

These are the systems placed on the railway rolling stock and vehicles that integrate them into the PTC system. They include on-board computers, displays, location determination devices, vehicle interfaces, sensors and all associated software.

c.) Wayside Systems:

The wayside systems consist of equipment used to integrate the infrastructure, depending upon selected functional requirements, within the PTC system, Wayside systems can include data interfaces to mechanical, electromechanical or other signaling systems including interlockings, turnout-point monitors, at-grade crossing systems as well as a variety of equipment and sensors designed to detect and report faults in the railway infrastructure.

d.) Telecommunications:

The office, vehicle and wayside functions of the PTC system shall be linked by telecommunications. These will potentially include VHF radio, microwave, voice and data transmission systems. This functional area includes the communications protocols and capacities and the receiving/transmitting apparatus.

- *Deliverable: Upon completion of the task, the contractor shall prepare a report that details the performance requirements and capabilities for such a system in the four functional areas.*

Task 4 - Assessment of Sources of Supply

Based on the requirements identified in Task 3 the Contractor shall perform an assessment of the US sources of supply, including range and capabilities of product offerings of goods, services and technologies for PTC systems.

- *Deliverable: Upon completion of the task, the contractor shall prepare a report that describes and assesses the market offerings of goods for PTC systems by US vendors. The report will list the potential suppliers, identifying the range of goods, services and technologies offered. Business name, point(s) of contact, addresses, telephones, e-mail, and fax numbers shall be included for each identified potential US source of supply.*

Task 5 – Pilot Project Corridor Feasibility Assessment and Selection

The Contractor, in coordination with the Grantee shall assess and select a corridor for a pilot project. The corridor selected should permit adequate demonstration of the capabilities of PTC to support decision making for a full implementation. The corridor should enable evaluation of the capability of the system to manage mixed traffic over infrastructure of sufficient operational complexity and should be representative of challenges to be resolved in a full implementation. The Contractor should determine if the present wireless communications capabilities on the selected corridor are sufficient to support a pilot.

The Contractor shall consider the suitability of the segment Bahariya Line running southwest from Cairo to a major mining facility and oasis for the pilot project.

- *Deliverable: Upon completion of the task, the Contractor shall prepare a report identifying and describing the proposed corridor and justifying the technical suitability of the corridor for the pilot project.*

Task 6 - Pilot Plan Development

The Contractor shall prepare a performance plan for the pilot project to include a budget, schedule, detailed technical specifications, and performance requirements. This plan shall provide the necessary level of detail and be in a format compatible with procurement procedures of the Egyptian government for international open competitive tenders.

- *Deliverable: Upon completion of the task the Contractor shall prepare a written report detailing a plan for the pilot project to include project scope, budget, schedule, detailed technical specifications, performance requirements and objectives.*

Task 7 – Assessment of Implementation Feasibility and Specifications

The Contractor shall prepare an assessment of the technical feasibility of the implementation phase of the Project and prepare conceptual system specifications.

The technical feasibility will be assessed for the ability of an integrated PTC system to be successfully installed and meet the performance specifications identified in task 3 on the ENR rail system. The Contractor shall identify key implementation risks to include the areas of cost, scope, schedule, contract, and human resources. Any good, service or product that is not presently in large scale operating railroad revenue service and that will likely be critical to an implementation should be identified and current development status noted. The Contractor shall make recommendations for analysis, monitoring, control and management of the identified risks throughout the implementation phase.

The Contractor shall take the performance requirements identified in task 3 and allocate them to functional areas, including those identified in task 3, and define conceptual interfaces for the top level system functional baseline. A proposed diagram of the work breakdown structure for the PTC system architecture shall be drafted and include at least four levels of detail. This diagram shall be in the format as illustrated in the U.S. Department of Defense publication MIL-HDBK-881A (30 July 2005) Appendix F.3 “Work Breakdown Structure Levels”. The Contractor shall recommend an organizational structure and development process for the detailed engineering system configuration baselines.

- *Deliverable: Upon completion of the task, the contractor shall prepare an assessment report and a conceptual specification for a PTC implementation.*

Task 8 – Economic and Financial Analysis

The Contractor shall perform an economic analysis of a PTC implementation, taking into account the structure of the railway system following the recent reorganization and the economic relationships between the new Special Business Units (SBUs) at Egypt National Railways. The Contractor shall identify the specific economic advantages to accrue to the economy and to the SBU’s from implementation of a PTC system. The Contractor shall perform a cash flow analysis for both the pilot and implementation phases and analyze the market conditions, availability of local

resources to support the Project, existing supply agreements/off-take agreements, and competing alternative methods of achieving the same or similar project objectives.

The Contractor shall quantify the business, macro and micro economic impact on the Grantee of a PTC pilot project and full implementation. The Contractor shall prepare a cash flow analysis and pro forma budget estimate for a ten year period beginning no more than two years prior to the anticipated initiation of the pilot project. This estimate will distinguish operating and capital expenditures for the Grantee and will include breakouts for information technology and signaling and communications expenditures for the relevant SBUs, including the TransIT SBU, the infrastructure manager, short and long distance passenger operations and freight operations.

The Contractor shall also provide a description of the planned host country financing mechanism for the pilot project and implementation including the anticipated decision making process, procurement and disbursement mechanisms, and funding timelines. The Contractor shall identify any potential for additional or supplementary equity and debt financing that could support or complement the Grantee financing plan such as mechanisms provided by the US Export-Import Bank and the Overseas Private Investment Corporation (OPIC) that can reduce costs and mitigate risks for US suppliers.

- *Deliverable: Upon completion of the task, the Contractor shall prepare a report that includes the cash flow analysis and pro forma budget estimate for a ten year period as well as describes the financing for the pilot project and the implementation and identifies external resources that may support and complement this local project financing all as detailed in Task 8.*

Task 9 – Preliminary Environmental Analysis

The Contractor shall perform a preliminary review and analysis of the Project's anticipated impact on the environment with reference to local requirements and those of multilateral lending agencies (such as the World Bank). This review shall identify potential negative impacts, discuss the extent to which they can be mitigated and develop plans for a full environmental impact assessment if and when the Project moves forward to the implementation stage. This shall include the identification of steps that will need to be undertaken by the Grantee subsequent to the study's completion and prior to project implementation.

- *Deliverable: Upon completion of the task, the Contractor shall prepare a report reviewing the anticipated environmental impact of performance of the pilot project and implementation phase and provide a plan for an environmental impact study supporting Implementation.*

Task 10 – Regulatory Issue Review and Analysis

The Contractor shall review and discuss laws, regulations and standards that would impact the Project's viability or prognosis to move forward. This analysis shall address current laws, regulations and standards in effect, those that are planned to be adopted in the expected timeframe for Project implementation, as well as any critical changes necessary or desired to accomplish implementation.

- *Deliverable: Upon completion of the task, the contractor shall prepare a report of findings that identifies any relevant legal and regulatory issues and recommended course of action to support the pilot project and implementation phase.*

Task 11- Host Country Development Impact Analysis

The Contractor shall perform an analysis of the Development Impact that is likely to result if the Project is implemented in accordance with the Study recommendations. While specific focus shall be paid to the immediate impact of the Project analysis shall include any additional developmental benefits that may result from the Project's implementation, including spin-off and demonstration effects. This analysis shall include assessment of each of the following categories with respect to the Project's potential development impact:

1. Infrastructure:
 - a) Quantify potential improvements in operational efficiency including on-time performance, dwell time and freight and passenger volumes over time on main corridors.
2. Market-Oriented Reform:
 - a) Quantify anticipated freight and passenger service improvements that will support the continued growth and development of Egypt's market economy.
 - b) Provide a description of any regulation, laws or institutional changes that are recommended and the effect they would have if implemented.
3. Human Capacity Building:
 - a) Quantify man-days of technical and management training to be provided Grantee's employees, specifying the number and category of employees.
4. Technology Transfer and Productivity Enhancement:
 - a) Identify specific improvements to traffic management that will be enabled by introduction of this more advanced technology.

Deliverable: Upon completion of the task, the contractor shall prepare a report identifying and describing quantified development impacts of project Implementation in the Host Country.

Task 12 – Implementation Plan

The Contractor shall prepare an implementation plan outlining the anticipated next steps required to implement the Project. The Contractor shall illustrate the implementation plan using a Gantt chart and include steps for procurement and tendering. The Contractor shall also outline the key decision making processes for the Grantee and other parties whose participation is expected to be critical to implementation.

The Contractor shall detail plans for the following:

- 1.) Pilot Project Implementation: A pilot implementation of a PTC system goods, services, and technologies on a selected portion of the ENR network.
- 2.) Project Implementation: A full implementation of a PTC system covering the majority of the Egyptian National Railway physical infrastructure and railway operations.

Deliverable: Upon completion of the task, the contractor shall prepare a report describing the steps towards Project implementation and implementation of the pilot project.

Task 13 - Final Report

The Contractor shall prepare and provide to the Grantee and to USTDA a Final Report in accordance with Clause I of Annex II of the Grant Agreement. Each of the above tasks in this Terms of Reference must be distinctly set forth in the Final Report in a substantive and comprehensive manner, and shall include all corresponding deliverables. The Final Report shall contain an executive summary. In addition to any other required deliverables in accordance with Clause I of Annex II of the Grant Agreement, the Contractor shall provide the Grantee with a Public Version of the Final Report on CD-ROM.

Notes:

- (1) **The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.**
- (2) **The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.**
- (3) **The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.**

Annex II

USTDA Mandatory Contract Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this contract acknowledge that this contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and the Government of the Arab Republic of Egypt, acting through the Ministry of Transport ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the feasibility study ("Study") for the Positive Train Control System project ("Project") in Egypt ("Host Country"). Notwithstanding any other provisions of this contract, the following USTDA mandatory contract clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA mandatory contract clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and any contract or subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

All contracts funded under the Grant Agreement, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the contract has been formally approved by USTDA or until the contract conforms to modifications required by USTDA during the contract review process.

(2) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this contract and amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility

or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from Host Country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

D. Recordkeeping and Audit

The Contractor and subcontractors funded under the Grant Agreement shall maintain, in accordance with generally accepted accounting procedures, books, records, and other documents, sufficient to reflect properly all transactions under or in connection with the contract. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the contract term and for a period of three (3) years after final disbursement by USTDA. The Contractor and subcontractors shall afford USTDA, or its authorized representatives, the opportunity at reasonable times for inspection and audit of such books, records, and other documentation.

E. U.S. Carriers

(1) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(2) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

F. Workman's Compensation Insurance

The Contractor shall provide adequate Workman's Compensation Insurance coverage for work performed under this Contract.

G. Reporting Requirements

The Contractor shall advise USTDA by letter as to the status of the Project on March 1st annually for a period of two (2) years after completion of the Study. In addition, if at any time the Contractor receives follow-on work from the Client, the Contractor shall so notify USTDA and designate the Contractor's contact point including name, telephone, and fax number. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the Contractor and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

H. Disbursement Procedures

(1) USTDA Approval of Contract

Disbursement of Grant funds will be made only after USTDA approval of this contract. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor a photocopy of an English language version of a signed contract or a final negotiated draft version to the attention of the General Counsel's office at USTDA's address listed in Clause M below.

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon receipt by USTDA of an approved Final Report in accordance with the specifications and quantities set forth in Clause I below. Invoicing procedures for all payments are described below.

(3) Contractor Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request disbursement of funds by

USTDA to the Contractor for performance of the contract by submitting the following to USTDA:

(a) Contractor's Invoice

The Contractor's invoice shall include reference to an item listed in the Contract payment schedule, the requested payment amount, and an appropriate certification by the Contractor, as follows:

(i) For a mobilization payment (if any):

"As a condition for this mobilization payment, the Contractor certifies that it will perform all work in accordance with the terms of its Contract with the Client. To the extent that the Contractor does not comply with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(ii) For contract performance milestone payments:

"The Contractor has performed the work described in this invoice in accordance with the terms of its contract with the Client and is entitled to payment thereunder. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(iii) For final payment:

"The Contractor has performed the work described in this invoice in accordance with the terms of its contract with the Client and is entitled to payment thereunder. Specifically, the Contractor has submitted the Final Report to the Client, as required by the Contract, and received the Client's approval of the Final Report. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(b) Client's Approval of the Contractor's Invoice

(i) The invoice for a mobilization payment must be approved in writing by the Client.

(ii) For contract performance milestone payments, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement."

(iii) For final payment, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the Contractor has been reviewed and approved by the Client. "

(c) USTDA Address for Disbursement Requests

Requests for disbursement shall be submitted by courier or mail to the attention of the Finance Department at USTDA's address listed in Clause M below.

(4) Termination

In the event that the Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the reasonable and documented costs incurred in performing the Terms of Reference prior to termination.

I. USTDA Final Report

(1) Definition

"Final Report" shall mean the Final Report described in the attached Annex I Terms of Reference or, if no such "Final Report" is described therein, "Final Report" shall mean a substantive and comprehensive report of work performed in accordance with the attached Annex I Terms of Reference, including any documents delivered to the Client.

(2) Final Report Submission Requirements

The Contractor shall provide the following to USTDA:

(a) One (1) complete version of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the Contractor to ensure that confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

(b) One (1) copy of the Final Report suitable for public distribution ("Public Version"). The Public Version shall have been approved by the Client in writing and must be in the English language. As this version will be available for public distribution, it must not contain any confidential information. If the report in (a) above contains no confidential information, it may be used as the Public Version. In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

and

(c) Two (2) CD-ROMs, each containing a complete copy of the Public Version of the Final Report. The electronic files on the CD-ROMs shall be submitted in a commonly accessible read-only format. As these CD-ROMs will be available for public distribution, they must not contain any confidential information. It is the responsibility of the Contractor to ensure that no confidential information is contained on the CD-ROMs.

The Contractor shall also provide one (1) copy of the Public Version of the Final Report to the Foreign Commercial Service Officer or the Economic Section of the U.S. Embassy in Host Country for informational purposes.

(3) Final Report Presentation

All Final Reports submitted to USTDA must be paginated and include the following:

(a) The front cover of every Final Report shall contain the name of the Client, the name of the Contractor who prepared the report, a report title, USTDA's logo, USTDA's mailing and delivery addresses. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term "Confidential Version." The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term "Public Version." The front cover of every Final Report shall also contain the following disclaimer:

"This report was funded by the U.S. Trade and Development Agency (USTDA), an agency of the U. S. Government. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of USTDA. USTDA makes no representation about, nor does it accept responsibility for, the accuracy or completeness of the information contained in this report."

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's mailing and delivery addresses, and USTDA's mission statement.

Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

(c) The Contractor shall affix to the front of the CD-ROM a label identifying the Host Country, USTDA Activity Number, the name of the Client, the name of the Contractor who prepared the report, a report title, and the following language:

“The Contractor certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution.”

(d) The Contractor and any subcontractors that perform work pursuant to the Grant Agreement must be clearly identified in the Final Report. Business name, point of contact, address, telephone and fax numbers shall be included for Contractor and each subcontractor.

(e) The Final Report, while aiming at optimum specifications and characteristics for the Project, shall identify the availability of prospective U.S. sources of supply. Business name, point of contact, address, telephone and fax numbers shall be included for each commercial source.

(f) The Final Report shall be accompanied by a letter or other notation by the Client which states that the Client approves the Final Report. A certification by the Client to this effect provided on or with the invoice for final payment will meet this requirement.

J. Modifications

All changes, modifications, assignments or amendments to this contract, including the appendices, shall be made only by written agreement by the parties hereto, subject to written USTDA approval.

K. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is March 25, 2011, is the date by which the parties estimate that the Study will have been completed.

(2) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

L. Business Practices

The Contractor agrees not to pay, promise to pay, or authorize the payment of any money or anything of value, directly or indirectly, to any person (whether a governmental official or private individual) for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study. The Client agrees not to receive any such payment. The Contractor and the Client agree that each will require that any agent or representative hired to represent them in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of each party under this Contract, including but not limited to those laws and obligations dealing with improper payments as described above.

M. USTDA Address and Fiscal Data

Any communication with USTDA regarding this Contract shall be sent to the following address and include the fiscal data listed below:

U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

Fiscal Data:

Appropriation No.: 119/101001
Activity No.:2009-21021A
Reservation No.:2009210023
Grant No.:GH2009210007

N. Definitions

All capitalized terms not otherwise defined herein shall have the meaning set forth in the Grant Agreement.

O. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Client nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

ANNEX 5

TERMS OF REFERENCE

The Ministry of Transport of the Arab Republic of Egypt has expressed interest in Positive Train Control systems and technologies and their potential application to the operations of Egyptian National Railways. The purpose and objective of the proposed Study are to:

- a) Evaluate the capability of positive train control (PTC) technologies and systems to: improve safety of operations on the Egyptian National Railway (ENR); improve capacity of the ENR network to operate more traffic over existing infrastructure, and; optimize ENR's operations including management of trains and adaptation to contingencies in real-time;
- b) Develop a preliminary performance requirements specification for implementation of PTC technologies and systems on ENR;
- c) Perform an assessment of the market for potential goods, services and technologies for PTC systems for the pilot and implementation phases;
- d) Prepare specifications and cost estimates for a PTC pilot project;
- e) Analyze the business and economic case for an implementation of a PTC system on the ENR and develop a conceptual specification.

Task 1 - Collection and Review of Existing Data

Collect and review with the Grantee the current technical state of the system and operations to include: infrastructure; rolling stock; signaling, control and telecommunications, systems interfaces; and operations practices and management. The Contractor shall identify and review current and planned projects at ENR relevant to a PTC system pilot project or full implementation. This task will include review of the reports recently completed by Booz-Allen Hamilton, Systra USA, and Transurb Technirail as well as the ENR Information Technology Master Plan through 2010. The Grantee shall provide these reports as well as the ENR Information Technology Master Plan to the Contractor.

- ***Deliverable:*** Upon completion of the task, the Contractor shall prepare a report detailing the findings of the data collection.

Task 2 – Preliminary Definition of the PTC Territory and Scope

The Contractor shall evaluate where PTC should be implemented on the ENR railway network. The Contractor shall define the physical scope of a PTC system implementation. The Contractor shall describe the geographic extent of infrastructure network coverage and the vehicle fleet to be integrated into such a system as well as address the equipping of the fleet.

- ***Deliverable:*** Upon completion of the task, the Contractor shall prepare a report that defines the physical scope of the PTC system.

Task 3 - Definition of Performance Requirements

The Contractor, in coordination with the Grantee, shall define the performance requirements for the major components of a PTC system appropriate for an implementation across the ENR network. The PTC system performance requirements shall include, but not be limited to:

- Issuance of movement authorities;
- Capability to transmit safety critical data wirelessly between vehicles, wayside components and the control center(s);
- Location determination capabilities for all rail vehicles sufficiently accurate to enable track discrimination in interlockings and through switches;
- Detection of switch position and physical switch control;
- Train integrity monitoring;
- Human-machine interfaces utilizing both Arabic and English characters;
- Presentation of operational information in real-time to operators and managers in the form of timetables, train time-distance charts, and other graphical formats;
- Implementation of flexible block signaling based on train performance characteristics;
- Supervising adherence of operations to the safety logic defined in the operating regulations;
- Supervision and control of train routing in real-time;
- Protection against collisions with automated enforcement and automated train stop;
- Protection of track maintenance crews;
- Utilization of open systems and commercial-off-the-shelf technologies to the maximum extent possible;
- Functional integration with existing and planned ENR train control and signalization systems and protocols, both as an overlay and as an independent system interchanging traffic with adjacent systems; and
- Prevention of over-speed accidents.

This work shall be detailed within with the following four functional areas:

a.) Control and Management (Office):

These are the office-based overall supervisory control systems that will support dispatching and provide system management, safety-critical logic implementation, and the human-machine interface with supervisory and management personnel. This functional area includes the systems integration function, software databases containing the network infrastructure, vehicle performance, physical specifications, system operating and safety logic.

b.) Vehicle Systems:

These are the systems placed on the railway rolling stock and vehicles that integrate them into the PTC system. They include on-board computers, displays, location determination devices, vehicle interfaces, sensors and all associated software.

c.) Wayside Systems:

The wayside systems consist of equipment used to integrate the infrastructure, depending upon selected functional requirements, within the PTC system, Wayside systems can include data interfaces to mechanical, electromechanical or other signaling systems including interlockings, turnout-point monitors, at-grade crossing systems as well as a variety of equipment and sensors designed to detect and report faults in the railway infrastructure.

d.) Telecommunications:

The office, vehicle and wayside functions of the PTC system shall be linked by telecommunications. These will potentially include VHF radio, microwave, voice and data transmission systems. This functional area includes the communications protocols and capacities and the receiving/transmitting apparatus.

- **Deliverable:** *Upon completion of the task, the contractor shall prepare a report that details the performance requirements and capabilities for such a system in the four functional areas.*

Task 4 - Assessment of Sources of Supply

Based on the requirements identified in Task 3 the Contractor shall perform an assessment of the US sources of supply, including range and capabilities of product offerings of goods, services and technologies for PTC systems.

- **Deliverable:** *Upon completion of the task, the contractor shall prepare a report that describes and assesses the market offerings of goods for PTC systems by US vendors. The report will list the potential suppliers, identifying the range of goods, services and technologies offered. Business name, point(s) of contact, addresses, telephones, e-mail, and fax numbers shall be included for each identified potential US source of supply.*

Task 5 – Pilot Project Corridor Feasibility Assessment and Selection

The Contractor, in coordination with the Grantee shall assess and select a corridor for a pilot project. The corridor selected should permit adequate demonstration of the capabilities of PTC to support decision making for a full implementation. The corridor should enable evaluation of the capability of the system to manage mixed traffic over infrastructure of sufficient operational complexity and should be representative of challenges to be resolved in a full implementation. The Contractor should determine if the present wireless communications capabilities on the selected corridor are sufficient to support a pilot.

The Contractor shall consider the suitability of the segment Bahariya Line running southwest from Cairo to a major mining facility and oasis for the pilot project.

- **Deliverable:** Upon completion of the task, the Contractor shall prepare a report identifying and describing the proposed corridor and justifying the technical suitability of the corridor for the pilot project.

Task 6 - Pilot Plan Development

The Contractor shall prepare a performance plan for the pilot project to include a budget, schedule, detailed technical specifications, and performance requirements. This plan shall provide the necessary level of detail and be in a format compatible with procurement procedures of the Egyptian government for international open competitive tenders.

- **Deliverable:** Upon completion of the task the Contractor shall prepare a written report detailing a plan for the pilot project to include project scope, budget, schedule, detailed technical specifications, performance requirements and objectives.

Task 7 – Assessment of Implementation Feasibility and Specifications

The Contractor shall prepare an assessment of the technical feasibility of the implementation phase of the Project and prepare conceptual system specifications.

The technical feasibility will be assessed for the ability of an integrated PTC system to be successfully installed and meet the performance specifications identified in task 3 on the ENR rail system. The Contractor shall identify key implementation risks to include the areas of cost, scope, schedule, contract, and human resources. Any good, service or product that is not presently in large scale operating railroad revenue service and that will likely be critical to an implementation should be identified and current development status noted. The Contractor shall make recommendations for analysis, monitoring, control and management of the identified risks throughout the implementation phase.

The Contractor shall take the performance requirements identified in task 3 and allocate them to functional areas, including those identified in task 3, and define conceptual interfaces for the top level system functional baseline. A proposed diagram of the work breakdown structure for the PTC system architecture shall be drafted and include at least four levels of detail. This diagram shall be in the format as illustrated in the U.S. Department of Defense publication MIL-HDBK-881A (30 July 2005) Appendix F.3 “Work Breakdown Structure Levels”. The Contractor shall recommend an organizational structure and development process for the detailed engineering system configuration baselines.

- **Deliverable:** Upon completion of the task, the contractor shall prepare an assessment report and a conceptual specification for a PTC implementation.

Task 8 – Economic and Financial Analysis

The Contractor shall perform an economic analysis of a PTC implementation, taking into account the structure of the railway system following the recent reorganization and the economic relationships between the new Special Business Units (SBUs) at Egypt National Railways. The Contractor shall identify the specific economic advantages to accrue to the economy and to the SBU's from implementation of a PTC system. The Contractor shall perform a cash flow analysis for both the pilot and implementation phases and analyze the market conditions, availability of local resources to support the Project, existing supply agreements/off-take agreements, and competing alternative methods of achieving the same or similar project objectives.

The Contractor shall quantify the business, macro and micro economic impact on the Grantee of a PTC pilot project and full implementation. The Contractor shall prepare a cash flow analysis and pro forma budget estimate for a ten year period beginning no more than two years prior to the anticipated initiation of the pilot project. This estimate will distinguish operating and capital expenditures for the Grantee and will include breakouts for information technology and signaling and communications expenditures for the relevant SBUs, including the TransIT SBU, the infrastructure manager, short and long distance passenger operations and freight operations.

The Contractor shall also provide a description of the planned host country financing mechanism for the pilot project and implementation including the anticipated decision making process, procurement and disbursement mechanisms, and funding timelines. The Contractor shall identify any potential for additional or supplementary equity and debt financing that could support or complement the Grantee financing plan such as mechanisms provided by the US Export-Import Bank and the Overseas Private Investment Corporation (OPIC) that can reduce costs and mitigate risks for US suppliers.

- ***Deliverable:** Upon completion of the task, the Contractor shall prepare a report that includes the cash flow analysis and pro forma budget estimate for a ten year period as well as describes the financing for the pilot project and the implementation and identifies external resources that may support and complement this local project financing all as detailed in Task 8.*

Task 9 – Preliminary Environmental Analysis

The Contractor shall perform a preliminary review and analysis of the Project's anticipated impact on the environment with reference to local requirements and those of multilateral lending agencies (such as the World Bank). This review shall identify potential negative impacts, discuss the extent to which they can be mitigated and develop plans for a full environmental impact assessment if and when the Project moves forward to the implementation stage. This shall include the identification of

steps that will need to be undertaken by the Grantee subsequent to the study's completion and prior to project implementation.

- ***Deliverable:*** *Upon completion of the task, the Contractor shall prepare a report reviewing the anticipated environmental impact of performance of the pilot project and implementation phase and provide a plan for an environmental impact study supporting Implementation.*

Task 10 – Regulatory Issue Review and Analysis

The Contractor shall review and discuss laws, regulations and standards that would impact the Project's viability or prognosis to move forward. This analysis shall address current laws, regulations and standards in effect, those that are planned to be adopted in the expected timeframe for Project implementation, as well as any critical changes necessary or desired to accomplish implementation.

- ***Deliverable:*** *Upon completion of the task, the contractor shall prepare a report of findings that identifies any relevant legal and regulatory issues and recommended course of action to support the pilot project and implementation phase.*

Task 11- Host Country Development Impact Analysis

The Contractor shall perform an analysis of the Development Impact that is likely to result if the Project is implemented in accordance with the Study recommendations. While specific focus shall be paid to the immediate impact of the Project analysis shall include any additional developmental benefits that may result from the Project's implementation, including spin-off and demonstration effects. This analysis shall include assessment of each of the following categories with respect to the Project's potential development impact:

1. Infrastructure:
 - a) Quantify potential improvements in operational efficiency including on-time performance, dwell time and freight and passenger volumes over time on main corridors.
2. Market-Oriented Reform:
 - a) Quantify anticipated freight and passenger service improvements that will support the continued growth and development of Egypt's market economy.
 - b) Provide a description of any regulation, laws or institutional changes that are recommended and the effect they would have if implemented.
3. Human Capacity Building:

- a) Quantify man-days of technical and management training to be provided Grantee's employees, specifying the number and category of employees.
4. Technology Transfer and Productivity Enhancement:
- a) Identify specific improvements to traffic management that will be enabled by introduction of this more advanced technology.

***Deliverable:** Upon completion of the task, the contractor shall prepare a report identifying and describing quantified development impacts of project Implementation in the Host Country.*

Task 12 – Implementation Plan

The Contractor shall prepare an implementation plan outlining the anticipated next steps required to implement the Project. The Contractor shall illustrate the implementation plan using a Gantt chart and include steps for procurement and tendering. The Contractor shall also outline the key decision making processes for the Grantee and other parties whose participation is expected to be critical to implementation.

The Contractor shall detail plans for the following:

- 1.) Pilot Project Implementation: A pilot implementation of a PTC system goods, services, and technologies on a selected portion of the ENR network.
- 2.) Project Implementation: A full implementation of a PTC system covering the majority of the Egyptian National Railway physical infrastructure and railway operations.

***Deliverable:** Upon completion of the task, the contractor shall prepare a report describing the steps towards Project implementation and implementation of the pilot project.*

Task 13 - Final Report

The Contractor shall prepare and provide to the Grantee and to USTDA a Final Report in accordance with Clause I of Annex II of the Grant Agreement. Each of the above tasks in this Terms of Reference must be distinctly set forth in the Final Report in a substantive and comprehensive manner, and shall include all corresponding deliverables. The Final Report shall contain an executive summary. In addition to any other required deliverables in accordance with Clause I of Annex II of the Grant Agreement, the Contractor shall provide the Grantee with a Public Version of the Final Report on CD-ROM.

Notes:

- (1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.**
- (2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.**
- (3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.**

ANNEX 6

7. Project Manager's name, address, telephone number, e-mail address and fax number .

B. Offeror's Authorized Negotiator

Provide name, title, address, telephone number, e-mail address and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

C. Negotiation Prerequisites

1. Discuss any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and reflect such impact within the project schedule.

2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

D. Offeror's Representations

Please provide exceptions and/or explanations in the event that any of the following representations cannot be made:

1. Offeror is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State of _____ . The Offeror has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the Feasibility Study. The Offeror is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment, or ineligible for the award of contracts by any federal or state governmental agency or authority. The Offeror has included, with this

proposal, a certified copy of its Articles of Incorporation, and a certificate of good standing issued by the State of _____.

2. Neither the Offeror nor any of its principal officers have, within the three-year period preceding this RFP, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
3. Neither the Offeror, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.
4. There are no federal or state tax liens pending against the assets, property or business of the Offeror. The Offeror, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.
5. The Offeror has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The Offeror has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

The selected Offeror shall notify the Grantee and USTDA if any of the representations included in its proposal are no longer true and correct at the time of its entry into a contract with the Grantee.

Signed: _____

Print Name: _____

Title: _____

Date: _____