

**REQUEST FOR PROPOSALS**

**TECHNICAL ASSISTANCE FOR THE**

**ROMANIA: NEXT GENERATION NETWORK  
INFRASTRUCTURE FOR EMERGENCY MANAGEMENT PROJECT**

Submission Deadline: **4:00PM**

**LOCAL TIME**

**MAY 14, 2008**

Submission Place:

ENG. MARCEL OPRIS  
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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 to the Romanian Special Telecommunications Service (Grantee) in order to fund the cost of goods and services required for Technical Assistance on the proposed Next Generation Network Infrastructure (NGN) for Emergency Management Project (Project) in Romania (Host Country), which will upgrade existing telecommunications infrastructure and improve the Host Country's capacity to manage possible as well as actual emergencies. 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 carry out the Technical Assistance.

### **1.1 BACKGROUND SUMMARY**

Existing telecommunications infrastructure in the Host Country is limited in its functionality, bandwidth capacity, geographical reach and transmission/storage security. The Host Country government, through the Grantee, intends to develop a NGN Infrastructure for Emergency Management that will address these shortcomings via a comprehensive information and communications technology (ICT) system upgrade. In addition to its explicit objective – enabling considerable, sweeping improvements in emergency management and response capabilities across the nation – this Project will provide a functional blueprint for future ICT upgrades in a number of other areas, which ultimately will result in the Host Country government's total reliance on a faster, more dependable and entirely interconnected telecommunications infrastructure in and among ministries and other facilities.

A background Definitional Mission is provided for reference in Annex 2.

### **1.2 OBJECTIVE**

The Grantee is a public institution of the Host Country, organized and functioning under the Law no. 92/1996 which oversees and coordinates ICT activities for public authorities and others as specified by law. The Grantee is responsible for providing communications network services for emergency management (including multiple emergency management agencies within government as well as first responder organizations). In the first phase of a World Bank Hazard Risk Mitigation and Emergency Preparedness Project being implemented in Romania, plans were made for an Emergency Management Information System (EMIS). Though EMIS is not yet officially underway, execution of the Project will ensure the proper functioning and capacity for the EMIS system and its various software applications (many of which use image data and other high-data volume files).

A NGN is a packet-based network that provides telecommunications and other services, and that makes use of multiple broadband and other technologies irrespective of the underlying telecom infrastructure (e.g. wire line, mobile, satellite, fiber optic, etc.). It offers unrestricted user access to different service providers and supports generalized mobility, which allows consistent and ubiquitous provision of services to users.

The Grantee is committed to realizing the Project for which Technical Assistance is sought herewith. The Project will help the Grantee to:

- *upgrade the existing national network infrastructure* in order to increase bandwidth capacity and capabilities to offer expanded services for emergency management, while at the same time increasing reliability and quality of service;
- *extend the network geographically*, from existing points of presence into the main city of each of the Host Country counties, in order to offer an equal level of services (voice, data, video, mobility);
- *establish a national data and recovery center* - an essential requirement in times of crisis;

and

- *strengthen cyber security services* over its networks. The NGN enables encryption and other features that provide heightened levels of security.

The Technical Assistance entails preparatory work for a system-wide upgrade such that the Grantee can provide NGN services to the Romanian General Inspectorate for Emergency Situations (GIES) and Emergency Operational Center (EOC), along with the latter's participating agencies. The specific end-goal is to advance critical emergency management and response capabilities throughout the Host Country. The Technical Assistance will provide support and technical expertise to the Grantee for the design and implementation of an NGN in order to support its activities with the following entities:

- GIES (and by extension the EOC)
- E112 intervention agencies (i.e. dispatch operations for the Host Country 911 type system)
- counties operations centers (i.e. county PSAP)
- Other participating agencies for purposes of data collection and dissemination
- Fixed and mobile public ICT utilities operators (i.e. private sector service providers)
- Technology providers (i.e. hardware and software vendors)

The Terms of Reference (TOR) for this Technical Assistance is attached in Annex 4.

### **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.

COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted; upon detailed evaluation of technical proposals, one firm will be selected for contract negotiations. The amount for the negotiated contract has been established by a USTDA grant of U.S. \$700,000.

#### **1.4 CONTRACT FUNDED BY USTDA**

The negotiated contract will be funded by USTDA in accordance with the terms and conditions of its grant to the Grantee. The contract must include certain USTDA mandatory clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA mandatory clauses are attached at Annexes 3 and 4 for reference.

## **Section 2: INSTRUCTIONS TO PROPOSERS**

### **2.1 PROJECT TITLE**

The Project is called "Next Generation Network Infrastructure for Emergency Management Project."

### **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. individual, or 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.

### **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 Technical Assistance.

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 Technical Assistance.

## **2.5 PROJECT FUNDING SOURCE**

The Technical Assistance will be funded under a grant from USTDA. The total amount of the grant is not to exceed U.S. \$700,000.

## **2.6 RESPONSIBILITY FOR COSTS**

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

## **2.7 TAXES**

Offerors should submit proposals which note that in Annex 4, USTDA Mandatory Contract Provisions, USTDA funds are not to be used to pay taxes or duties under the laws of the Host Country.

## **2.8 CONFIDENTIALITY**

The Grantee will use its best efforts to preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror which is clearly designated as such by the Offeror.

A Non-Disclosure Agreement shall be signed with the Offeror which is invited to negotiate the contract. This Agreement shall not infringe on the Offeror's obligations to provide information to USTDA, including the confidential and public final reports.

## **2.9 ECONOMY OF PROPOSALS**

Proposal documents should be prepared simply and economically, providing a comprehensive and concise description of the Offeror's capabilities to satisfy the requirements of the RFP. There is no necessity for expensive bindings, colored displays, or other promotional material unless such material is absolutely pertinent to the proposal. Emphasis should be placed on completeness and clarity of content.

## **2.10 SUBSTANTIVE PROPOSALS**

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on the 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 himself 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. USTDA nationality requirements 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:

**ENG. MARCEL OPRIS  
DIRECTOR  
SPECIAL TELECOMMUNICATIONS SERVICE  
323A, SPLAIUL INDEPENDENTEI  
SECTOR 6, 060044 BUCHAREST  
ROMANIA**

**TEL: +40 21 202 21 41**

**FAX: +40 21 311 20 39**

**An Original, two (2) hard copies and one (1) electronic copy of your proposal must be received at the above address no later than May 14, 2008, 4:00pm local time.**

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.

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

## **2.14 PACKAGING**

Each 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, two (2) hard copies and one (1) electronic copy should be collectively wrapped and sealed, and clearly marked for content.

Neither USTDA nor the Grantee will be responsible for premature opening of proposals not properly 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. The original Power of Attorney granting the right to bind the Offeror shall accompany the proposal.

## **2.16 EFFECTIVE PERIOD OF PROPOSAL**

The proposal shall be binding upon the Offeror for ninety (90) 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**

Firms agree by their response to the RFP announcement to abide by the procedures set forth therein. Material modifications in the TOR or responsibilities of the parties will not be accepted.

Any exceptions in the proposal shall be clearly identified, and shall include the scope of such exception, and its impact, on the procurement. The Grantee shall make final determination as to the responsiveness of such exceptions and their acceptability.

## **2.18 OFFEROR QUALIFICATIONS**

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory and Technical Assistance services similar to those required in the TOR.

## **2.19 RIGHT TO REJECT PROPOSALS**

The Grantee reserves the right to reject any and all proposals and to accept or reject any or all of the items in the proposal, and to award the contract in whole or in part if it is deemed in the best interest of the Grantee.

## **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 consultants and subcontractors. USTDA nationality provisions are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all mandatory USTDA clauses, to be inserted in all subcontracts ensuing to ensure fulfillment of all contractual provisions by subcontractors.

## **2.21 AWARD**

An award resulting from this RFP shall be made to the best qualified Offeror, taking into consideration the evaluation factors set forth herein; however, the right is reserved 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) furnish all supplies, supervision, transportation, and other execution accessories, services, and facilities; (b) provide and perform all necessary labor; and (c) in accordance with good technical practice, with due diligence, and in accordance with the requirements, stipulations, provisions and conditions of this RFP and the resultant contract, execute and complete all specified work to the satisfaction of the Grantee.

## **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. Upon approval of each invoice, the Grantee will forward the invoice to USTDA which will process payment to the Contractor. All payments by USTDA under the Grant Agreement will be made in U.S. currency.

### **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. No cost proposal is required as the value of the USTDA grant is established at U.S. \$700,000.

Offerors shall submit one (1) original, two (2) hard copies and one (1) electronic copy of the proposal. The electronic copy shall be in searchable .pdf format. Proposals received by fax or e-mail cannot be accepted.

The following sections and content are required for each proposal:

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

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

#### **3.1 SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY**

An Executive Summary should be prepared describing the major facts or features of the proposal, including any conclusions, assumptions, and generalized 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 SECTION 2: COMPANY INFORMATION**

#### **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), similar information must be provided for each subcontractor. Offerors are requested to limit the length of the Company Profile Information to one (1) page per firm.

1. Name of firm and business address, including telephone and fax numbers.
2. Year established (include former firm names and year established, if applicable).
3. Type of ownership and parent company, if any.
4. Project Manager's name, address, telephone and fax number, if different from (1).

#### **3.2.2 Offeror's Authorized Negotiator**

Provide name, title, address, telephone 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 impact of any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Technical Assistance as proposed and within the Project schedule.
2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

### **3.3 SECTION 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 Technical Assistance. Identify the Project Manager who will be the individual responsible for this Project. The Project Manager must have the responsibility and authority to act on behalf of the Offeror in matters related to the proposed Technical Assistance.

Provide a listing of personnel (including subcontractors and consultants) to be engaged in the Project, either U.S. or local 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 organizational relationship between the firms must be described.

A manpower schedule and the level of effort for the Project period, by activities and tasks, as detailed under the 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 SECTION 4: TECHNICAL APPROACH AND WORK PLAN**

Describe in detail the proposed technical approach and work plan. Discuss the Project requirements as perceived by the Offeror. Include a brief narrative of 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 Technical Work Plan, including periodic reporting or review points, incremental delivery dates, and other Project milestones.

Based on the Technical Work Plan, and previous project experience, explain when and where Offeror will require support from the Grantee. Detail the amount of staff time required by the Grantee or participating agencies and any work space or facilities needed to complete the Technical Assistance.

### **3.5 SECTION 5: EXPERIENCE AND QUALIFICATIONS**

Provide a discussion of the Offeror's experience and qualifications which are relevant to the objectives and TOR for the Technical Assistance. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the Project. Relevant experience and qualifications of key staff proposed shall be provided including letters of commitment from the individuals proposed concerning their availability for contract performance.

As many as possible but not more than six (6) relevant and verifiable project references must be provided, 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 Technical Assistance 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, and the Grantee shall promptly 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 shall then be undertaken with the second most qualified Offeror and so forth.

The selection of the Contractor will be based on the degree to which the Offeror meets the following criteria:

- Has experience assessing the state of telecommunication networks and developing a vendor-neutral NGN strategy (maximum 15 points);
- Has experience performing business-case and return-on-investment analyses in support of 3rd party NGN solutions development (maximum 15 points);
- Has experience applying generic requirements/specifications/standards for communication networks and equipment used by international carriers (maximum 10 points);
- Has experience applying industry reliability and performance standards, i.e. Network Equipment Building Standards (NEBS) for telecommunications equipment designed for:
  - Earthquake zones
  - Environmental conditions (temperature, humidity, flooding, etc.)
  - Electromagnetic Conduction (EMC) and Electromagnetic Interference (EMI)
  - Fire protection (maximum 10 points);
- Has experience developing specifications, RFPs or tenders for NGN equipment and network management solutions (maximum 10 points);
- Has experience evaluating legacy systems (maximum 10 points);
- Has experience managing personnel with the technical expertise necessary to develop different aspects of NGN (maximum 5 points);
- Has prepared a work plan that reflects an understanding of the Terms of Reference, and of the goals and situation of the Grantee (maximum 25 points).

The Offeror shall include in the proposal a cross reference table, indicating the chapter and page where the detailed information for each criterion could be found as in following example.

Criterion	Cross reference
Has experience assessing the state of telecommunication networks and developing a vendor-neutral NGN strategy	Chapter, page

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

Price will not be a factor in contractor selection.

**ANNEX 1**

**FEDBIZOPPS ANNOUNCEMENT**

ENG. MARCEL OPRIȘ, DIRECTOR, SPECIAL TELECOMMUNICATIONS SERVICE, 323A, SPLAIUL INDEPENDENTEI, SECTOR 6, 060044 BUCHAREST, ROMANIA; TEL: +40 21 202 21 41, FAX: +40 21 311 20 39

R – ROMANIA: NEXT GENERATION NETWORK INFRASTRUCTURE FOR EMERGENCY MANAGEMENT PROJECT

POC Evangela Kunene, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. Romania: Next Generation Network Infrastructure for Emergency Management Project (“Project”). The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms which are qualified on the basis of experience and capability to perform Technical Assistance (“TA”) with the development of a Next Generation Network (“NGN”), which will upgrade existing telecommunications infrastructure and improve the Romanian government’s capacity to manage possible as well as actual emergencies.

The Grantee is a public institution of the Host Country, organized and functioning under the Law no. 92/1996, that oversees and coordinates information and communications technology activities for public authorities and others as specified by law. The Grantee is responsible for providing communications network services for emergency management (including multiple emergency management agencies within government as well as first responder organizations). In the first phase of a World Bank Hazard Risk Mitigation and Emergency Preparedness Project being implemented in Romania, plans were made for an Emergency Management Information System (EMIS). Though EMIS is not yet officially underway, realization of the Project will ensure the proper functioning and capacity for the EMIS system and its various software applications (many of which use image data and other high-data volume files).

More generally, existing telecommunications infrastructure in Romania is limited in its functionality, bandwidth capacity, geographical reach and transmission/storage security. The Romanian government, through the Grantee, intends to develop an NGN that will address these shortcomings via a comprehensive ICT system upgrade. In addition to its explicit objective – enabling considerable, sweeping improvements in emergency management and response capabilities across the nation – the Project will provide a functional blueprint for future ICT upgrades in a number of other areas, which ultimately will result in the Romanian government’s total reliance on a faster, more dependable and entirely interconnected telecommunications infrastructure in and among ministries and other facilities.

The Grantee requires the services of a Contractor to complete the following Tasks for this Technical Assistance:

- TASK 1: Network Infrastructure Assessment
- TASK 2: Satisfying EMIS Performance Requirements
- TASK 3: Blueprint for Next-Generation Emergency Management Network

- TASK 4: Enhanced Network Functionality and Capacity to Support Geospatial Information Systems and Critical Incident Management Systems
- TASK 5: Planning and Advisory Services
- TASK 6: Implementation and Financing Plan
- TASK 7: Development Impact Analysis
- TASK 8: Regulatory Review and Preliminary Environmental Analysis
- TASK 9: Final Report

The U.S. firm selected will be paid in U.S. dollars from a \$700,000 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 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 4:00pm local time on May 14, 2008 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.

## **A N N E X 2**

### **BACKGROUND DEFINITIONAL MISSION REPORT<sup>1</sup>**

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<sup>1</sup> \*Please note that the Definitional Mission Report is included for background information only. The selection criteria and TOR in the Report differ from those found in the above RFP.

**Definitional Mission Report**

**Next Generation Network Infrastructure for Emergency  
Management in Romania  
Special Telecommunications Service  
Government of Romania**

Project No. 2007-810008

U.S. TRADE AND DEVELOPMENT AGENCY	
OCT 26 2007	

submitted to the

**United States Trade and Development Agency**

by

**Reilly Associates**

P.O. Box 838, Red Bank, NJ 07701  
Tel (732) 708 9460 Fax (732) 708 9461  
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October 19, 2007



This report was funded by the U.S. Trade and Development Agency (USTDA), a foreign assistance agency of the United States 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.

Mailing and Delivery Address: 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901  
Phone: 703-875-4357 • Fax: 875-4009 • Web site: [www.TDA.gov](http://www.TDA.gov) • email: [info@TDA.gov](mailto:info@TDA.gov)



## The U.S. Trade and Development Agency

The U.S. Trade and Development Agency (USTDA) advances economic development and U.S. commercial interests in developing and middle income countries. The agency funds various forms of technical assistance, feasibility studies, training, orientation visits and business workshops that support the development of a modern infrastructure and a fair and open trading environment.

USTDA's strategic use of foreign assistance funds to support sound investment policy and decision-making in host countries creates an enabling environment for trade, investment and sustainable economic development. Operating at the nexus of foreign policy and commerce, USTDA is uniquely positioned to work with U.S. firms and host countries in achieving the agency's trade and development goals. In carrying out its mission, USTDA gives emphasis to economic sectors that may benefit from U.S. exports of goods and services.

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NGN Network Infrastructure for Emergency Management in Romania

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## NGN Network Infrastructure for Emergency Management in Romania

### A. Executive Summary

Project Summary	
Host Country	Romania
Project Name	Next Generation Network Infrastructure for Emergency Management in Romania
Sector	Telecommunications / Environment
Region	South East Europe
Location	Bucharest, Romania
Investment Required	\$47,000,000
Export Potential	\$43,500,000
Project Grantee	Special Telecommunications Service

**Project Location:** The Project is based in Bucharest, Romania.

**Project Description:** The Special Telecommunications Service (STS) has a commitment to develop a Next Generation Network (NGN) Project in support of the emergency management information system. This Project is described as the STS vision to

- *upgrade the existing national network infrastructure* in order to increase bandwidth capacity and capabilities to offer expanded services, while at the same time increasing reliability and quality of service;
- *extend the network geographically* from existing points of presence into the main city of each of the counties in Romania to offer an equal level of services (voice, data, video, mobility);
- *establish a national data and recovery center* as an essential requirement in times of crisis; and
- *strengthen the security services* over its networks via NGN-enabled encryption and other security features.

The Project will extend and upgrade the STS network to a high-bandwidth, high-reliability and secure infrastructure in order to provide the necessary level of service to the General Inspectorate for Emergency Situations (GIES), Emergency Operational Center (EOC) and its participating agencies to support emergency management.

This Project is the first step in defining the hardware and software requirements for the STS over the next five years.

The STS requests the assistance of the U.S. Trade and Development Agency (USTDA) in funding Technical Assistance (TA) in order to precisely define the requirements for the

## NGN Network Infrastructure for Emergency Management in Romania

Project, determine budgetary needs and prepare specifications for the systems to be purchased.

**Project Sponsor's Capability and Commitment:** The STS is a state-owned company which provides telecommunications services for Romanian public authorities and other users as specified by law. The major customers/clients supported by STS include Parliament, the Presidential Administration and the Government (i.e. ministries, national companies and technical institutes).

**Incentives for Implementation:** There is considerable urgency in establishing network connectivity and capacity to support the emergency information management system that is currently being tendered, and in providing network support for the emergency operations center that is currently under construction.

**Barriers to Implementation:** The main barrier to implementation is the current lack of guidance and documentation on the technical and capital requirements of the NGN. These are necessary to obtain final approval and funding for the Project. This barrier will be addressed by the TA.

**Implementation Financing:** The STS is seeking funding for the NGN from the Ministry of Finance, from the Government of Romania (GOR) budgets of the ministries which it serves, and from EU Structural and Cohesion Funds. Financing for portions of the network to support emergency operations will be forthcoming from the World Bank Project. The STS has already received a commitment from the Ministry of Finance to fund a portion of its network investment using Schengen acquis funds (20 million Euros).

**US Export Potential:** The technologies and solutions offered by U.S. vendors for NGN represent the standard that the STS seeks to meet in extending and upgrading its own network. The STS would like to procure technologies from U.S. suppliers for the NGN Project. Potential exports of U.S. equipment, software, and engineering services are estimated at \$43.5 million.

**Foreign Competition and Market Entry Issues:** There is strong competition for U.S. telecommunications technologies from major European vendors and systems integrators.

**Development Impact:** A NGN is necessary to support the emergency management system in Romania. This network is an enabler for operations centers and collaborative activities which are necessary for rapid responses that limit the loss of life and property, as well as damage to economic resources and social institutions. The technologies enabled by the NGN are used for early warning, situation assessment and the creation of a common operational picture to lessen the impact of disasters on development. They are used to hasten recovery and a return to normal economic and social development.

**Impact on Environment:** This Project will have a positive impact on the environment. It will enable emergency operations activities to better respond to natural and

## NGN Network Infrastructure for Emergency Management in Romania

technological disasters that threaten the environment, lessening damage and hastening repair and restoration.

**Impact on U.S. Labor:** This Project will have a positive impact on U.S. labor through purchases of goods and services from U.S. equipment manufacturers, software vendors and engineering firms.

**Qualifications:** The key personnel must have experience with the design and implementation of complex telecommunications networks, as well as NGN technologies. The Contractor must have in-house experience in the development of network assessment, network testing, and developing NGN technologies.

**Justification:** Improved coordination in response to emergency situations and disasters will result in great benefits to Romania, its citizens and to the countries in the region. The execution of the TA will assure that leading U.S. suppliers of high-tech equipment and services for emergency operations will be in a favorable position to supply equipment to the STS and other countries in the region as the Project moves forward. Total American exports are expected to be in the range of \$43.5 million.

**Aim of the Terms of Reference:** It is the objective of the terms of reference to extend and upgrade the STS network to a Next Generation Network in support of the Emergency Management Information System and the Emergency Operations Center.

**Outline of the Terms of Reference:** The Terms of Reference (TOR) are presented in a series of tasks, summarized as follows:

- TASK 1: Network Infrastructure Assessment
- TASK 2: Satisfying EMIS Performance Requirements
- TASK 3: Blueprint for Next-Generation Emergency Management Network
- TASK 4: Enhanced Network Functionality and Capacity to Support Geospatial Information Systems and Critical Incident Management Systems
- TASK 5: Planning and Advisory Services
- TASK 6: Implementation and Financing Plan
- TASK 7: Development Impact
- TASK 8: Regulatory Review and Environmental Analysis
- TASK 9: Final Report

**Period of Performance:** The period of performance for this TA is projected to be twelve (12) months.

**Budget:** USTDA support is recommended for this TA in the form of a grant of \$700,000 to the STS.

**Recommendations:** USTDA support is recommended for this TA in the form of a grant of \$700,000 to the STS.

**B. Project Description**

Project Summary	
Host Country	Romania
Project Name	Next Generation Network Infrastructure for Emergency Management in Romania
Sector	Telecommunications / Environment
Region	South East Europe
Location	Bucharest, Romania
Investment Required	\$47,000,000
Export Potential	\$43,500,000
Project Grantee	Special Telecommunications Service



**Project Location:** The Project is based in Bucharest, Romania.

**Project Overview:** The Special Telecommunications Service (STS) is responsible for developing a Next Generation Network (NGN) to support the requirements of the Emergency Operations Center (EOC) and the Emergency Management Information System (EMIS) of the General Inspectorate for Emergency Situations (GIES) as part of the overall Hazard Risk Mitigation and Emergency Preparedness Project (HRMEP).

The Special Telecommunications Service (STS) is a state-owned company which provides telecommunications services to Romanian public authorities. The major customers/clients supported by STS include Parliament, the Presidential Administration and the Government (i.e. ministries, national companies and technical institutes).

The STS delivers telecommunications services (voice, data and video) that support the decision making process and sustain the functions of governance, security and public safety. These services play a major role in day-to-day activities, as well as during natural or man-made emergencies.

The existing STS network has limitations in terms of bandwidth capacity and capabilities to offer expanded services

Fundamentally, the Project will extend and upgrade the STS network to a high-bandwidth, high-reliability and secure infrastructure in order to provide the necessary level of service to the GIES, the EOC and its participating agencies to support emergency management.

## **NGN Network Infrastructure for Emergency Management in Romania**

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### **STS Next Generation Network Project**

The vision of the STS is *to upgrade the existing national network infrastructure* in order to increase bandwidth capacity and expand service capabilities, while at the same time improving reliability and service quality. The STS seeks a NGN in order to accommodate the higher throughput required by new applications and systems, in particular those required by the EMIS, EOC and satellite agencies for emergency management, involving over twenty institutions. NGN technology is necessary in order to manage the huge increase in traffic from the complex communications requirements of emergency management, as well as to provide a higher level of service to governmental agencies overall.

At the same time, the STS vision is *to extend the network geographically* from existing access points into the main city of each of the counties in Romania to offer an equal level of services (voice, data, video, mobility). The STS intends to implement NGN technologies in line with the trends of the telecommunications equipment market in terms of interfaces and gateways, and to support the *convergence and integration of services to achieve full interoperability* for data exchange among Romanian government ministries, as well as European institutions, and to define and develop a common operating environment.

Another priority of the STS is *to establish a national data and recovery center* as an essential requirement in times of crisis. The continuity and availability of services for governmental authorities is crucial when speaking about saving lives, property, the environment, the national critical infrastructure in the event of natural disasters, such as earthquakes, floods, earth slides, fires, or man-made disasters, such as chemical accidents or terrorist attacks.

The STS is responsible for cyber security and the protection of the confidentiality of communications for its customers. As such, a priority of the STS is to *strengthen the security services* over its networks via NGN-enabled encryption and other security features.

### **Emergency Operations**

Under the HRMEP project, the GIES is building an EOC and establishing communications links to the ministries, police, gendarmerie, the Judets (counties), NATO, and critical environmental institutions such as the National Institute for Earth Physics and the Emergency Situation Management Directorate. Efficient emergency response and coordination require that the operations centers of participating agencies and entities be linked through a telecommunications network built and managed by the STS.

### **E112 System**

The STS operates the E112 system in Romania. E112 is the universal emergency number in the EU; it is the equivalent of 9-1-1 in the US. The E112 system includes a public

## **NGN Network Infrastructure for Emergency Management in Romania**

service answering point (PSAP), commonly termed a "call center", connected to the intervention forces (i.e. Police, Medical Services, Fire Brigade, Gendarmerie) in Bucharest and in each county of Romania, but at the present time the network does not extend to the EOC, nor does it provide sufficient bandwidth capacity to support large volumes of real-time data and video. The E112 System, based on a common set of telecommunication technologies, is the point where the networks of the various sectors involved in emergency management in Romania converge.

The E112 System should be extended to all public administration systems as a tool for localizing the response to emergency situations.

### **Telecommunications Program Support**

The Project will provide support and technical expertise to the STS for the design and implementation of a telecommunications network to support its activities with the following entities:

- GIES (EOC)
- E112 intervention agencies (dispatch operations)
- Judets (operations centers)
- Other participating agencies (data collection and dissemination)
- Fixed and mobile public operators (private sector service providers)
- Technology providers (equipment and applications vendors)

## **C. Project Sponsor's Capability and Commitment**

### **Special Telecommunications Service**

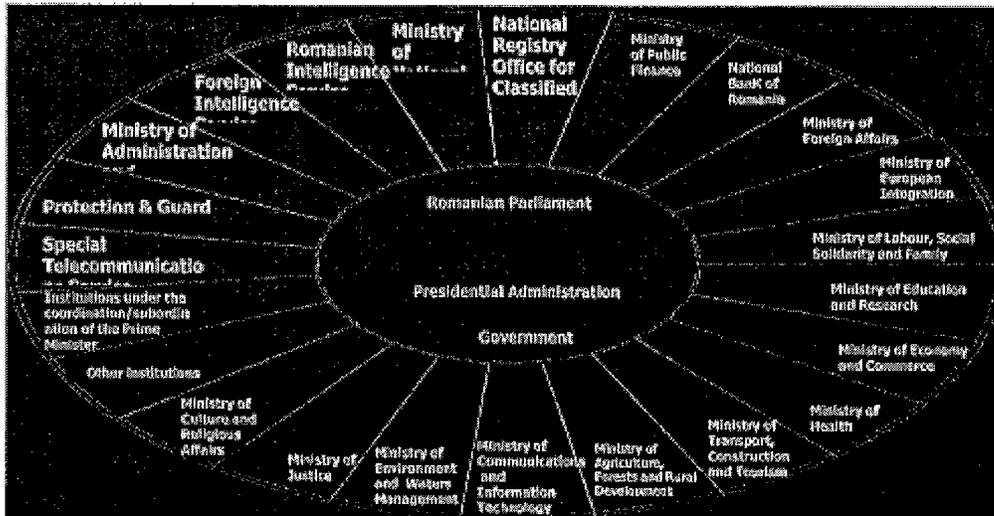
The STS is a central entity that organizes and coordinates special telecommunications activities for Romanian public authorities and others as specified by law.

Special telecommunications include any emission or reception of signals, writings, images, sounds or information that is transmitted by wire, radio, optic systems or by other electromagnetic systems.

The STS serves the following Romanian public authorities:

- Parliament
- Presidential Administration
- National Defense, Security and Law Enforcement
- Central and local public administration
- Judicial Authorities
- Supreme Court of Justice
- Public Ministries
- Leading governmental and national-interest non-governmental bodies

## NGN Network Infrastructure for Emergency Management in Romania



**Governmental Network Managed by the STS**

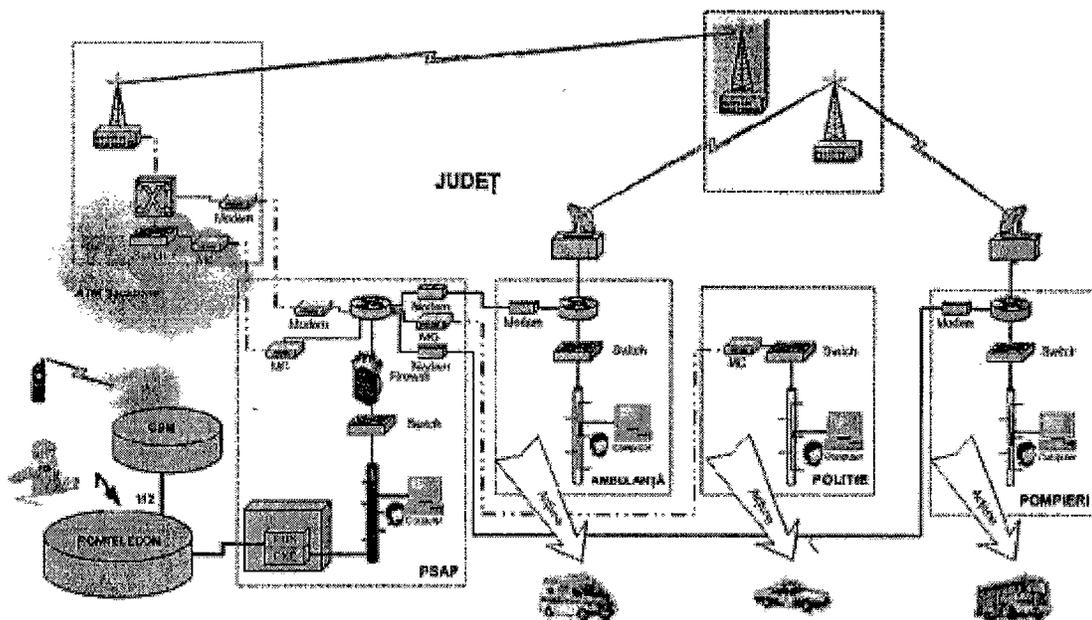
The responsibilities of the STS are to:

- manage, operate and develop the special telecommunications networks under its management or assigned to it for use;
- develop programs and documents for the modernization, development, operation and maintenance of the special telecommunications networks;
- establish communications security policies and ensure systematic protection of the information handled by the special telecommunications networks according to national information protection standards;
- manage and secure government-assigned frequency bands used to achieve its own legal mandates as well as those of other justice and security-oriented institutions;
- monitor and record, for security purposes, activity across the government-assigned frequency bands under its management;
- develop co-operative relations with other defense-oriented institutions and provide special communications services to the High National Headquarters and the National Command and Control Authority;
- co-operate with defense-oriented institutions and other, similarly-focused legal entities in order to harmonize and ensure compatibility among their communication systems;
- install, operate and maintain the National Unique System for Emergency Calls (i.e. 112) according to established quality requirements;
- apply procedures related to Public Key Infrastructure technology within the national system of defense;
- organize an electronic signature authentication system;
- co-operate with the Ministry of Administration and Interior to apply specific measures for integrated national border management; and
- provide telecommunications services for private or public persons, according to law.

**STS Network Requirements for National System of Emergency Management**

Examination of the requirements for the National Emergency Management System (NEMS) and discussions with GIES' and STS' technical experts reveal major challenges to meeting bandwidth requirements (data, voice, video and other applications) using the existing infrastructure.

The STS is very well positioned for communications between the Bucharest hub and the counties. However, the STS ATM core must make room for the IP core with interfaces more suitable for high-bandwidth requirements.

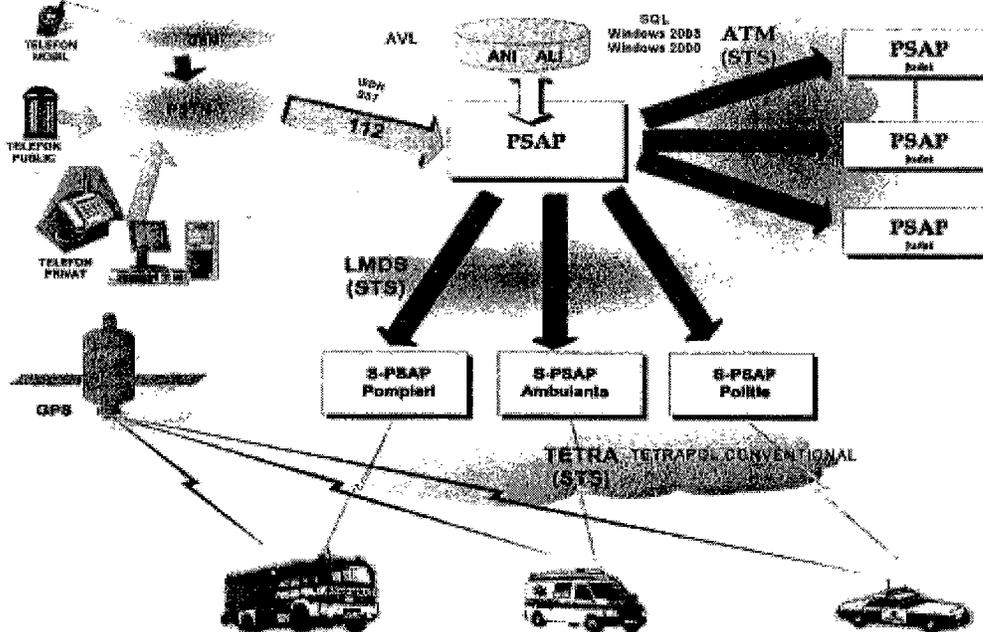


Network Structure (STS)

Other than high-bandwidth requirements, major telecommunications support issues for the NEMS are:

- high-capacity interconnection between different networks (e.g. GIES, STS) and primary data, which is obtained through sensors run by the National Institute of Meteorology and Hydrology, the Romanian Seismic Network Acquisition Center and the National Agency for Environment Protection;
- call prioritization in emergency situations; and
- interconnectivity for first responders from different organizations.

## NGN Network Infrastructure for Emergency Management in Romania



### Communications Technologies (STS)

### Emergency Management Information System

An Emergency Management Information System (EMIS) is part of the World Bank's *Hazard Risk Mitigation and Emergency Preparedness Project*.

The World Bank consultation for the EMIS took place in two phases. The first phase included a feasibility study, EMIS design, and the establishment of detailed technical and functional specifications in preparation for procurement. The second phase is supply and installation of a fully integrated system. The Invitation for Bids has been announced. Bid submission date is December 7, 2007.

The EMIS will be a coordinated system of information management meant to collect, analyze and share data in real time between the responsible emergency management authorities. The EMIS is designed to ensure the timely gathering of information as well as its storage, processing, display and dissemination. Information will be shared between the national EOC and the operations centers of the various ministries and public institutions that hold emergency management responsibilities. The national EOC will exchange information with the county-based emergency operational centers, which will likewise be able to exchange information among themselves. The system will have national coverage. Internationally, information sharing will take place between the national EOC, the UN Office for the Coordination of Humanitarian Affairs, the NATO Euro Atlantic Disaster Response Coordination Center (EADRCC), and the EU Monitoring and Information Center.

## NGN Network Infrastructure for Emergency Management in Romania

The EMIS is expected to achieve the following objectives:

- Ensure data communications within the NEMS on national, regional and local bases
- Ensure that information required for decision making is available at all levels
- Interconnect existing systems in order to ensure full interoperability
- Collect and process data delivered by all interconnected systems
- Process information and establish two-way communications,(from/to user) in accordance with legal responsibilities
- Ensure confidentiality according to NATO, EU and Romanian regulations
- Preserve operability in case of disasters
- Support routine activities of all institutions comprising the NEMS

**The communications and information sharing requirements of the EMIS exceed the capacity of the existing STS network. The NGN Project offers the connectivity and capacity to provide necessary support services to the national EOC and other emergency operations centers.**

### **Next Generation Network**

Next Generation Network (NGN) is a term that refers to the convergence of networks, including the public switched telephone network (PSTN), the data network (i.e. the Internet) and, in some instances, the wireless network as well. The NGN is used to support *all* types of services over the packet-based transport network, including voice telephony services, data, video, multimedia, advanced broadband and management applications.

#### **Definition: Next Generation Network**

A Next Generation Network (NGN) is a packet-based network able to provide services including Telecommunication Services and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent from underlying transport-related technologies. It offers unrestricted access by users to different service providers. It supports generalized mobility which will allow consistent and ubiquitous provision of services to users.

Source: ITU-T

The key elements of NGN that relate to STS support for emergency management in Romania are data services, multimedia services, virtual private networks and unified messaging.

The STS must provide new services to its clients, reduce operating costs and position itself strategically with respect to NGN technology. It must take advantage of its core competencies and prepare for the emerging telecommunications environment. In this

## NGN Network Infrastructure for Emergency Management in Romania

way the STS will prime itself for a seamless transition to NGN realization, from the core to the periphery of the network.

The STS must additionally pursue NGN-compatible architectures in order to offer value-added services. This will result in achievement of the primary goal: enabling users to get the information they want, in any media/format, using any facility, at any time, anywhere, and in any volume; in short, engendering ubiquitous, real-time, multimedia communications. This consistent, singular approach will reduce costs by eliminating the existing inefficiencies of service-specific, proprietary, non-reusable solutions.

**This Project is the first step to defining the hardware and software requirements for the STS over the next five years.**

**Incentives for Implementation:** There are ample incentives for implementation of the Project. There is an urgent need to extend and upgrade the network.

The most pressing incentives are the EMIS that is being tendered as part of the World Bank Project and the network support requirements for the national EOC which is currently under construction.

**Barriers to Implementation:** The main barrier to implementation is the current lack of guidance and documentation on the technical and capital requirements of the NGN. These are necessary to obtain final approval and funding for the Project.

**Legal Regulatory Framework:** The STS is a central entity that organizes and coordinates special telecommunications activities for Romanian public authorities and others as specified by law.

The activities of the STS are organized and coordinated by the Supreme Council of National Defense, and are under the control of the Romanian Parliament, through the Defense, Law Enforcement and National Security Commissions in the two Chambers of Parliament.

**Project Cost Estimate:** The estimated capital expenditures required for the Project will be on the order of U.S. \$47.0 million, mostly for hardware, software and engineering services.

### **D. Implementation Financing**

The STS is seeking funding for the NGN from the Ministry of Finance, from GOR budgets of the ministries which it serves, and from EU Structural and Cohesion Funds. Financing for portions of the network to support emergency operations will be forthcoming from the World Bank Project. The STS has already received a commitment from the Ministry of Finance to fund a portion of the NGN investment using Schengen acquis funds (20 million Euros).

## **NGN Network Infrastructure for Emergency Management in Romania**

Implementation financing is available from multiple sources: the GOR national budget, EU programs, the EBRD, the World Bank and the US Export Import Bank. In addition, private sector financing is available from U.S. corporations in the form of discounts and public-private partnerships with the national government.

### **European Union Post-accession Funds**

As a European Union member, Romania will benefit from post-accession funds which are significantly larger than pre-accession funds. The total amount of Structural and Cohesion Funds allocated for Romania for the period 2007-2013 is €19.668 billion.

#### **Post-Accession Funds Financial Perspective 2007 - 2013**

According to the Financial Perspectives 2007-2013 agreed at the European Council in December 2005, Member States whose average 2001-2003 per capita GNI (PPS) is under 40% of the EU-25 average are entitled to receive a maximum level of Structural Instruments transfers of 3.7893% of their GDP.

The entire territory of Romania is eligible under the "Convergence" objective, given that per capita GDP (PPP) of every NUTS II region is below 75% of the EU-25 average. Romania will also receive financing under the "European Territorial Co-operation" objective, for actions of cross-border, transnational and inter-regional cooperation.

As a Member State who has a per capita GNI (PPP) of less than 90% of the EU-25 average, Romania will benefit from the Cohesion Fund. In order to reflect the significant needs of new Member States in terms of transport and environment infrastructure, the share of the Cohesion Fund will be set at one third of the total financial allocation (Structural funds plus Cohesion Fund) for the new Member States on average over the period 2007-2013.

Total Financial Allocation Structural and Cohesion Funds for Romania  
2007-2013 for Romania:

**19.7 billion Euro**

Source: Structural Funds of the European Union, Ministry of Public Finance, Government of Romania (Management Authority for NSRF), June 5, 2007.

The funds are meant to increase market competition, improve transportation and environmental infrastructure, strengthen regional development, streamline human resources processes, and strengthen administrative capacity in order to speed up economic convergence throughout the EU.

## **NGN Network Infrastructure for Emergency Management in Romania**

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Structural and Cohesion Funds are the financial instruments of the EU Cohesion Policy. They consist of three structural components: the European Regional Development Fund, the European Social Fund, and the Cohesion Fund.

The 2007-2013 National Strategic Reference Framework (NSRF) is a reference document for allocating Structural and Cohesion Funds. Among the stated priorities are getting basic infrastructure in line with European standards and building more effective administrative capacity. The STS NGN Project reflects these priorities.

Structural and Cohesion Funds are allocated by operational programs in various sectors; the program for administrative capacity development is the one most applicable to the STS NGN Project. This program is geared toward improving ICT for regional and local public infrastructure, developing a market for next-generation products and service connections, and building up integrated information systems. The STS NGN Project is a perfect fit for this program.

### **U.S. Company Eligibility for Structural Funds**

There are no overt prohibitions against the participation of *European-based companies of U.S. parentage*, either as developers of or suppliers to projects supported partially by the Structural Funds, or as bidders on subsequent public tenders related to such projects.

#### **U.S. Firm Eligibility**

"Eligibility to receive funding for projects is restricted to Europe-based firms. However, U.S. firms may participate in projects receiving EU funding via two methods. 1) U.S. subsidiaries located in any of the 25 European Union countries, and legally registered, are considered "European firms", and, as such, are eligible and 2) U.S. firms without European subsidiaries may partner with a European firm to be eligible for a particular project. An EU-based local partner is required to ensure access to funding."

Source: EU-funded Programs: Grants, U.S. Mission to the European Union

The U.S. companies that are potential suppliers to the NGN Project are considered "European firms" by the above definition, and therefore qualify for Structural Funds financing.

### **Project Co-financing by Country**

It is important to note that each project financed through Structural and Cohesion Funds requires co-financing from national sources. It is the responsibility of the project applicant to obtain matching funds from public and/or private sources in the host country. Toward this end, there are no restrictions on U.S. companies receiving project funding at the national level.

## **NGN Network Infrastructure for Emergency Management in Romania**

Along with the €20 billion Structural and Cohesion Funds from the European Union, Romanian sources will have to provide roughly €5 billion in co-financing. Every project developed with Structural and Cohesion Funds will require a 15-30% contribution from national sources in Romania, as very few projects can be financed with EU funds exclusively.

### **Fund Absorption**

Absorption of EU funding is a major issue in Romania, as it has not developed qualifying projects at a sufficient rate to absorb the Structural and Cohesion Funds that have been allocated. Presently the absorption rate is below 40%; spending EU Structural Funds has thus become a priority for the GOR.

**The STS NGN Project is eligible for EU funding. The TA will provide the STS with the necessary technical documentation to prepare a qualifying project proposal and apply for funding.**

### **E. U.S. Export Potential**

USTDA support for this Project is fully justified by the significant export potential for U.S. vendors that the Project will create. STS expects that Project investments will total approximately \$47 million, of which exports from the United States will comprise nearly \$43.5 million.

#### **Potential Cost and Export Potential**

Project cost and Export Potential are shown in the table below.

**Project Cost and Export Potential  
(000)**

<b>Category</b>	<b>Project Cost</b>	<b>%US Sourced</b>	<b>Exports</b>
IP Switching Equipment	\$8,000	100%	\$8,000
Backbone and Edge Routers	\$5,000	100%	\$5,000
Optical Switching Equipment for Fiber Networks	\$4,000	100%	\$4,000
Add/drop Multiplexers	\$3,500	100%	\$3,500
Server and Computing Equipment	\$4,500	100%	\$4,500
Encryption Devices and Software	\$2,500	80%	\$2,000
Firewalls	\$1,500	80%	\$1,200

### **NGN Network Infrastructure for Emergency Management in Romania**

Network Management and Inventory Software	\$12,000	80%	\$9,600
Provisioning Systems	\$3,000	100%	\$3,000
Engineering Services	\$3,000	90%	\$2,700
<b>Total</b>	<b>\$47,000</b>	<b>93%</b>	<b>\$43,500</b>

#### **Future Networks**

The government network to support emergency management is only one of twenty-three managed by the STS. Depending on interdependencies and the extent of equipment collocation, it is reasonable to expect that between ten and fifteen of these networks will need to be extended and upgraded to NGN in the next five to eight years. Technical engineering and systems configuration similar to those demanded for the NGN Project in question will therefore be needed for further NGN projects. In this case, it is reasonable to estimate that the equipment and services to be specified will approximate those in the current Project, and that increased exports will result by a factor of at least ten, or \$400 million.

#### **US Sources of Supply**

Major U.S. companies that would provide the equipment, software and services necessary for the Project are listed in the table below. Dozens of smaller companies and independent contractors that provide software development services are potential vendors as well.

#### **Major Equipment & Service Providers**

ADVA Optical	IPC/Positron
Avaya	Juniper
Avici Systems	Mindspeed Technologies
Bay Networks	Motorola
Cisco	Nortel Networks
Cienna	Polycom
Cortina Systems	RAD
Dell	SAIC
H-P	Telecordia
IBM	Tellabs
Infinera	3COM

US telecommunications equipment manufacturers and service providers have expressed an interest in NGN projects and responding to future tenders. NGN projects are the top priority of companies supplying equipment and services to telecommunications providers in Romania, indeed the world.

## **F. Foreign Competition and Market Entry Issues**

European firms have an advantage in the Romanian market due to geographical proximity and historical trade patterns. European manufacturers such as Alcatel, Siemens, Phillips and Ericsson have a significant presence in the region for network infrastructure hardware and software. These firms consistently compete with U.S. firms in this region. Local industry capabilities are limited in services, software and some hardware equipment areas.

U.S. telecommunications equipment is very well-received in the Romanian market. Some U.S.-based manufacturers with a presence in Romania include Avaya, Hewlett Packard, Cisco, 3Com and Bay Networks. However, the Romanian market remains dominated by European producers such as Siemens, Ericsson, Nokia and Alcatel.

## **G. Development Impacts**

This Project will have a positive impact on the Romanian economy by encouraging the development of NGNs in multiple critical sectors of the Romanian economy, both public and private.

Extending and upgrading Romania's ICT infrastructure will enhance the capabilities and efficiency of the emergency management system, and will thus have a significant and positive impact on development. A strengthened emergency management system is an essential precondition for further development in other areas of the economy, not least because of the implications it carries for protection of life and property.

This Project will have a positive impact on the development of human capital by expanding the need for support personnel throughout the ICT sector.

Additional educational and job training opportunities are likely to accompany deployment of the NGN, leading to increased professional opportunities for ICT students and the eventual creation of small businesses to provide network management and maintenance services.

**The positive development impact of this Project from its contribution to the protection of lives and property cannot be overestimated.**

Development impact in USTDA-delineated areas is described in the paragraphs below.

**Infrastructure:** The Project will be the backbone of and enabler for the emergency management system in Romania. The establishment of a NGN will lead the development of telecommunications infrastructure nationally and regionally.

Substantial improvements are to follow from the networks built and equipped as a consequence of this Project. Regional operations centers will benefit from collaboration

## NGN Network Infrastructure for Emergency Management in Romania

and communication tools in use during non-emergency operations (such as those of the police and fire brigades) as well as during actual emergencies.

Further positive impact is foreseeable from increased investment due to infrastructure improvements and employment growth in technology-related industries.

**Market-Oriented Reforms:** This Project will expand service offerings and thereby encourage market-oriented reforms in sectors that supply and maintain technologies for ICT networks.

Creation of demand for NGN technology, under competitive contract for the systems themselves, will be another driver of market-oriented reforms.

Reinforcement of market oriented reforms, including standards and specifications related to NGN technology, will become evident as this Project materializes.

**Human Capacity Building:** Human capacity building related to this Project will start with the design engineering of the NGN and grow throughout the implementation stages. It will increase alongside the demand for highly trained technical personnel that will be needed to maintain equipment, upgrade software, and provide network management and maintenance services.

Technologies training will be provided to those individuals who install and maintain the equipment as part of network enhancements.

**Technology Transfer:** Access to NGN technology and solutions will represent major technology transfers.

The use of integrated computer telephony hardware and software for multimedia collaboration between emergency and operations personnel is another major area where technology and skills will be transferred. This includes the use of location identification technologies for both wireless and voice-over-internet (VoIP) applications.

**Productivity Improvements:** A NGN allows for communications and collaboration that significantly reduces response times during emergencies. This is the single most beneficial impact of a NGN in terms of saving lives and protecting property. The Project will significantly improve the effectiveness of resource utilization among first responder units, increasing their efficiency and productivity.

### **H. Impact on the Environment**

This Project will have a positive impact on the environment. An important positive result from the Project – the establishment of a NGN and consequent improvements in emergency management – will be the enhanced capability of the STS to respond to and mitigate environmental threats such as those related to floods, chemical spills, pollution, and forest fires. Through the Project, the NGN will enable the EOC to monitor fire

## **NGN Network Infrastructure for Emergency Management in Romania**

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"hotspots", the transport of hazardous materials throughout the region, and waterways. This capability will make risk mitigation, incident management and clean-up a more effective process. The NGN enables all of these technologies to work together in real-time for the benefit of the environment.

When the value of the NGN's contribution to the speed and effectiveness of emergency response is measured in terms of early warning, disaster recovery and lives, the environmental impact is always positive.

### **I. Impact on U.S. Labor**

This Project is expected to have a positive impact on U.S. labor. Telecommunications equipment manufacturers and engineering firms will see new business opportunities. The United States is very competitive in terms of NGN technologies, and the jobs in this industry are among the best-paid in the country.

### **J. Qualifications<sup>+</sup>**

The Contractor must:

- Have experience assessing the state of telecommunication networks and developing a vendor-neutral NGN strategy (15 points);
- Have experience performing business-case and return-on-investment analyses in support of 3<sup>rd</sup> party NGN solutions development (15 points);
- Have experience developing and publishing generic requirements/specifications/standards for communication networks and equipment used by international carriers (10 points);
- Have experience developing and publishing reliability and performance standards for the industry, i.e. Network Equipment Building Standards (NEBS) for telecommunications equipment designed for:
  - Earthquake zones
  - Environmental conditions (temperature, humidity, flooding, etc.)
  - Electromagnetic Conduction (EMC) and Electromagnetic Interference (EMI)
  - Fire protection (10 points);
- Have experience developing specifications, RFPs or tenders for NGN equipment and network management solutions (10 points);
- Have experience conducting "hands on" testing of 3<sup>rd</sup> party proposed NGN solutions in Romania (10 points);
- Have experience managing at least ten (10) personnel (U.S. citizens, "staff on-hand") with ten (10+) years technical experience, who have worked in Romania developing different aspects of NGN (15 points);

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## **NGN Network Infrastructure for Emergency Management in Romania**

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- Have a track record of vendor-neutrality, without allegiance to any NGN telecommunications equipment vendors (5 points);
- Prepare a work plan that reflects an understanding of the Terms of Reference, and of the goals and situation of the STS (10 points).

### **K. Justification**

The improved telecommunications capabilities to support emergency management that result from this Project will be of great benefit to Romania, its citizens and to the countries in the region. The Project is justified on multiple grounds, foremost being the positive impact on security in Romania and its surrounding region by contributing to the protection of life, property, and the environment during emergencies.

The exports directly attributable to the Project will be significant. Moreover, there will be important and substantial benefits on the development side. There is significant economic and social benefit from more reliable communications for emergency management in terms of preparedness for and mitigation to disasters.

The Project will introduce the Romanian government to a broad range of NGN services. This will create an advantage to U.S. firms that wish to enter the market. It will provide a means for evaluating emergency management services and equipment. This Project, and the demonstrated benefits of NGN technologies introduced thereby, will provide justification for Romanian telecommunications providers to make investments in expanded and enhanced systems for their own networks.

The Project will strengthen the capabilities of the Romanian authorities to communicate with the USAID, NATO, and EU entities that provide assistance during emergencies.

The Project will clearly establish a regional leadership role for Romania and will lead to new opportunities for the development of similar NGN systems among its neighbors.

### **L. Terms of Reference**

See Annex I.

### **M. Budget and Task Completion Schedule**

See Annex II.

### **N. Recommendations**

We recommend that USTDA support this Technical Assistance by providing a Technical Assistance grant of \$700,000 to the Special Telecommunications Service in Romania.

## **O. Contacts**

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**NGN Network Infrastructure for Emergency Management in Romania**

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**Next Generation Network Infrastructure for Emergency Management in Romania  
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**Terms of Reference**

These Terms of Reference (TOR) outline the successive tasks that shall be incumbent on the Contractor in undertaking the Technical Assistance ("TA") on the proposed Next Generation Network Infrastructure for Emergency Management Technical Assistance Project ("Project") in Romania. The Contractor shall provide TA to the Romanian Special Telecommunications Service ("Grantee") in order to develop a network that supports the requirements of the Emergency Operations Center (EOC) and the Emergency Management Information System (EMIS) of the General Inspectorate for Emergency Situations (GIES). This activity is an essential complement to the overall Hazard Risk Mitigation and Emergency Preparedness Project (HRMEP) which is being funded by the World Bank and will set Romania on course to establish comprehensive Next Generation Network (NGN) levels of service.

Towards this end, the Grantee requires the services of a Contractor to complete the following Tasks under this TA. The Contractor shall:

**TASK 1: Network Infrastructure Assessment**

*1.1 Kick-off Meeting*

The Contractor shall meet with the Grantee in Bucharest at a "kick-off meeting" to launch the TA. During this meeting, the initial work plan shall be reviewed, as shall expectations for deliverables. During this meeting, the Contractor and the Grantee's technical experts shall discuss the existing system and plan for information gathering on the network layout, service types and objectives, existing data transmission speeds, existing coverage areas, existing equipment and facility locations. The Contractor shall inquire about Grantee's objectives for network expansion, including traffic volume, coverage area and equipment under consideration. All information gathered during the kick-off meeting will be used as a basis for the network backbone infrastructure assessment.

*1.2 Network Backbone Infrastructure Assessment*

The Contractor shall conduct an assessment of the current network infrastructure with a view toward its evolution into a NGN. This assessment shall focus on the suitability of current resources to support the transformation of the network into a high-bandwidth, high-traffic capacity, and resilient infrastructure with ubiquitous service availability.

The Contractor shall conduct an evaluation of network readiness to support the technologies and services of the EOC and judet operations centers, which shall include, but not be limited to the following:

## **Next Generation Network Infrastructure for Emergency Management in Romania Special Telecommunications Service**

- a definition of services and how they relate to mission and technical objectives;
- a baseline assessment of the current network infrastructure with respect to
  - existing network capabilities;
  - current service capabilities;
  - current capacity and utilization;
  - existing network infrastructure requirements;
  - existing operation and implementation planning requirements; and
- an identification of major gaps in the existing infrastructure in order to plan for NGN conversion and realization.

The Contractor shall assess the adequacy of the telecommunications infrastructure to support the EOC and its E112 emergency operations, the public service answering points (PSAPs), the intervention forces, dispatch centers, and all other ministries or national agencies holding responsibility for emergency and crisis management.

The Contractor shall assess the adequacy of network connectivity between the GIES and the EOC, determine if it allows sufficient capacity, and make recommendations for any upgrades that may be required.

### *1.3 Existing Providers and Service Level Agreements*

The Contractor shall review all service level agreements (SLA) in preparation for the analysis that is called for under task 5.3.

## **TASK 2: Satisfying EMIS Performance Requirements**

The EMIS interfaces with various entities, databases, sensors and applications; this task makes it incumbent upon the Contractor to synchronize NGN capabilities with EMIS performance requirements.

### *2.1 NGN Requirements for EMIS*

With regards to connectivity, bandwidth capacity and the ability to deliver next-generation services, the Contractor shall determine the requirements that the NGN must satisfy in order to support the EMIS for the expanded and extended EOC and its satellite agencies.

### *2.2 NGN Parameters*

The Contractor shall meet with the Grantee in order to define NGN parameters, where the Contractor shall learn of the bandwidth requirements for each of the technologies deployed at the EOC. The Contractor shall analyze these requirements and make recommendations regarding the configuration of the Project such that it meets the telecommunications requirements of the EOC and its satellite agencies. Particular

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emphasis shall be placed on the requirements of the agencies responsible for fire response, emergency medical services, police, gendarmerie, public works, and the environment.

### *2.3 Network Extensions and Upgrades*

The Contractor shall make recommendations with respect to the extension and upgrade of the existing telecommunications infrastructure. Upon completion of Task 2, the Contractor shall submit a report to the Grantee summarizing its assessments and recommendations. This report shall include supporting network diagrams, schematics and equipment specifications for each of the recommendations made.

## **TASK 3: Blueprint for Next-Generation Emergency Management Network**

### *3.1 Blueprint*

The Contractor shall prepare an NGN infrastructure blueprint in order to enable the Grantee to support crisis management in concert with participating ministries and agencies. The blueprint will consist of:

- a detailed design for a state-of-the art network characterized by high reliability, ubiquitous availability and comprehensive security;
- a statement on network interconnectivity for important stakeholders; and
- a discussion of additional upgrades and improvements to existing networks that will support mitigation measures in the proposed NGN design.

### *3.2 EOC Infrastructure Support*

The Grantee shall provide the Contractor with information regarding the architecture of the telecommunications network and the location of its assets (e.g. switches). Based on this information, the Contractor shall prepare a detailed technical report that provides, at a minimum, the following items:

- an overall plan for a site housing the models, tools and databases necessary for network tests and assessments;
- a discussion of impact assessment tools for specific threats (i.e. natural and man-made disasters), both prospective and currently existing in Romania;
- a representative model of telecommunications infrastructure in a selected area, including a geographical information system (GIS) mapping of network facilities with superimposed call processing activity;
- a sample model to assess typical timeframes for post-disaster recovery; and
- a discussion of methods and procedures to update models and improve performance assessments.

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*3.3 NGN Transition Roadmap*

In preparation for the Implementation Plan (Task 6.1), the Contractor shall produce a budget and a terms of reference that encompass projected equipment specifications, performance standards and legacy-to-NGN transitional deployment milestones, as well as technical reviews and the acquisition of critical asset data sets.

**TASK 4: Enhanced Network Functionality and Capacity to Support Geospatial Information Systems and Critical Incident Management Systems**

*4.1 Analysis of Transmission Rates for GIS files*

The Contractor shall make recommendations on network requirements for GIS tools and data exchange.

*4.2 Analysis of Real-Time Critical Incident Management System Collaboration Tools*

The Contractor shall interview the technical staff of the EOC's User Working Group (UWG) in order to analyze the staff's telecommunications needs.

The Contractor shall make recommendations on network requirements regarding the Critical Incident Management System for users at the EOC, at participating ministries and at the judet operations centers.

**TASK 5: Planning and Advisory Services**

*5.1 NGN for Emergency Management*

The Contractor shall prepare and submit to the Grantee guidelines for planning and implementing the NGN upgrades to support emergency management services in Romania.

*5.2 NGN for EMIS and Romanian Governmental Network*

The Contractor shall prepare a report that makes recommendations for the NGN vis-à-vis EMIS, which shall take into account any implications of the upgrade for the Romania-wide government network. This report shall include the Contractor's findings on existing and planned networks that support the EOC, the judet operations centers, the ministries, the police and the gendarmerie. It shall be written as an institutional framework guide for a Romanian Governmental Telecommunications Network. This report shall assess the capabilities of and make recommendations for connectivity, interoperability, capacity, and services organization and planning. Special attention shall be given to telecommunications infrastructure for data (e.g. SCADA sensors and video signals from police, traffic authorities, judet operations center closed-circuit television (CCTV) and

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other offices) and conferencing (including both voice and multimedia) exchanges that support emergency service requirements.

The Contractor shall provide assistance with strategic planning and associated activities, as they relate to the architecture for the NGN.

*5.3 Service Level Agreements/Pricing*

The Contractor shall provide recommendations for the development of procurement plans based on proposed SLAs. The Contractor shall also prepare an analysis that identifies cost-effective alternatives for owner-provided and owner-leased services, and shall make recommendations for renegotiation of the SLAs based thereupon. These recommendations should be included in the report on the Romanian Governmental Telecommunications Network.

*5.4 Security Safeguards*

The Contractor shall review aspects of the NGN system that are designed to prevent unauthorized access and protect against threats that may disrupt, deny, degrade or altogether destroy service. It is critical that security safeguards are implemented before NGN systems are launched, specifically in the areas of physical security, operational security, network security and information assurance. The Contractor shall include findings and recommendations relating to security safeguards in the report on the Romanian Governmental Telecommunications Network.

**TASK 6: Implementation and Financing Plan**

*6.1 Implementation Plan*

The Contractor shall prepare and submit to the Grantee an implementation plan for the Project incorporating each of the recommendations made in Tasks 1-5 above.

*6.2 Economic Analysis*

The Contractor shall analyze economic contingencies, market conditions for technologies and network services, supply agreements, alternative methods of achieving NGN potentiality, prospective enhancement technologies, and extension of the network as outlined in the implementation plan. The most likely source(s) of implementation financing shall be considered in this analysis.

The economic analysis and other supporting documentation prepared for the Grantee shall satisfy the requirements for prospective public, private and European Union (EU) funding sources.

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*6.3 Financial Analysis*

The Contractor shall analyze sources of financing for NGN implementation (i.e. the technology upgrade and the network extensions). This analysis shall include prospective financing based on the Grantee's operational budget as well as resources available from participating ministries, the U.S. Export-Import Bank, the World Bank, other multi-lateral development banks such as the European Bank for Reconstruction and Development (EBRD) and the EU Structural Fund.

**TASK 7: Development Impact Analysis**

The Contractor shall evaluate the development impacts that would be expected if the Project is implemented in accordance with the TA recommendations. This analysis shall include any additional developmental benefits that may result from the Project's implementation, including spin-off projects and the establishment of industry-related businesses.

The Contractor shall specifically address each of the following categories:

- Infrastructure  
The Contractor shall provide a brief synopsis of the new infrastructure required to complete the Project. (For example, "The NGN would result in the expansion of networks to support state services, including emergency services, urban land use, etc".)
- Human Capacity Building  
The Contractor shall assess the number and type of local positions that will be needed to develop the NGN (i.e. perform network extensions and upgrades), shall estimate the number of Romanians that will receive training, and shall describe such potential training programs. Human capacity building with respect to entities that would benefit from the NGN shall also be included, such as network users at public service facilities.
- Technology Transfer and Productivity Enhancement  
The Contractor shall provide a description of any advanced technologies that will be utilized as a result of the Project, and shall describe any efficiency gains that are to be expected. (For example, "by sharing video, weather information, and data from detection devices, productivity in terms of emergency response time, loss of life and property reduced would be improved by x amount of dollars or by x percentage").
- Other  
The Contractor shall describe any other developmental impacts or benefits that will result from the Project, such as follow-on or replication projects, trends toward safer workplaces or enhanced good governance.

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**TASK 8: Regulatory Review and Preliminary Environmental Analysis**

The Contractor shall assess current Romanian law and EU regulations as they apply to the Grantee's NGN, and ensure compliance of the latter with the former. Implications of national and international law for the upgraded network shall also be discussed. The Contractor shall furthermore identify laws and regulations that, if modified, will enable more effective local and national NGN implementation.

The Contractor shall complete a preliminary environmental analysis of the proposed NGN to ensure its consistency with standards in Romania, the EU and with financing institutions such as the World Bank. This analysis shall identify potential and/or negative impacts, discuss the extent to which negative impacts can be mitigated, and develop plans for a full environmental impact assessment in anticipation of the Project moving forward to the implementation stage. The Contractor shall identify those mitigation measures the Grantee must take in order to meet applicable laws and regulations.

**TASK 9: Final Report**

The Contractor shall prepare and deliver to Grantee and USTDA a substantive and comprehensive Final Report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee in connection with the performance of those tasks. The Final Report shall incorporate the findings, recommendations and conclusions of the TA. It is the Contractor's responsibility to identify prospective U.S. sources of supply, assess their capabilities, and include their business names, points of contact, addresses, and telephone and fax numbers in the Final Report. The Contractor shall prepare the Final Report in accordance with Annex II, Clause I of the Grant Agreement.

The Contractor shall provide the Final Report and any additional briefings to the Grantee in English.

According to Annex II, Clause I of the Grant Agreement, the Contractor shall provide the Grantee and USTDA with two electronic copies of the Public version of the Final Report on CD-ROM.

The CD-ROM version of the final report shall include:

- Adobe Acrobat readable copies of all documents;
- Source files for all drawings in AutoCAD or Visio format; and
- Source files for all documents in MS Office 2000 or later formats.

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**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.

**BUDGET**  
STS Technical Assistance

TASK	DESCRIPTION	Program Manager & Customer Interface	PM & Principal Network Engineer	Principal Network Engineer / Consultant	Principal Reliability Engineer / Consultant	Principal Models and Tools Engineer / Consultant	Senior Reliability Engineer / Consultant	Principal Security Engineer / Consultant	Principal Business Case Analyst / Consultant	Total
1	Network Infrastructure Assessment Kickoff Meeting Network Security Infrastructure Assessment Existing Profiles and BEAS	5	24	24	9	5	5		5	77
2	Submiting EMS Performance Requirements RGN Requirements for EMS RGN Parameters Network Extensions and Upgrades	4	12	12	5	5	5			43
3	Support for RGN Support ECC Infrastructure Support Phases	4	16	16	20	18	10			84
4	Enhanced Network Functionality and Capacity Analysis of Transmission Rates for GTS Files Analysis of Real-Time CIMS Collaboration Tools	2	10	10	16	10				48
5	Planning and Advisory Services RGN for Emergency Management RGN for EMS and Extension Governmental Network Service Level Agreement Planning Security Strategies	6	18	18	5		15			60
6	Buy Identification and Funding Plan Implementation Plan Economic Analysis Financial Models	2	5					10		17
7	Development Impact Analysis	2	3	3				8		16
8	Regulatory Review and Environmental Analysis	4	5					5		14
9	Final Report	5	3	3	3	3			7	35
	Total Days	34	101	59	60	41	20	15	55	395
	Rate	Days	Rate/Day	Extension						
	Program Manager & Customer Interface	34	\$1,800	\$61,200						
	PM & Principal Network Engineer	101	\$1,600	\$162,800						
	Principal Network Engineer/Consultant	69	\$1,800	\$124,200						
	Principal Reliability Engineer/Consultant	60	\$1,320	\$79,200						
	Principal Models and Tools Engineer/Consultant	41	\$1,320	\$54,120						
	Senior Reliability Engineer/Consultant	20	\$1,200	\$24,000						
	Principal Security Engineer/Consultant	15	\$1,320	\$19,800						
	Principal Business Case Analyst/Consultant	35	\$1,320	\$46,200						
	Total	395		\$666,600						
	Budget	Extension								
	Net Flows (12 months from US @ \$1,000)			\$12,000						
	Fixed / per client (120 days @ \$325)			\$39,000						
	Ground Transportation			\$5,100						
	Project Expenses (documentation, drawings, printing)			\$2,300						
	Local Consulting			\$25,000						
	Total			\$103,400						
	TOTAL PROJECT BUDGET			\$700,000						

## **BUDGET NARRATIVE**

### **DIRECT COSTS**

#### **Direct Labor**

**Program Manager & Customer Interface** – Responsibility for the overall relationship and deliverables on the project. Provides technical direction and overall supervision and guidance to personnel. Oversees the project budgets and staff resources to best meet the needs of the project stakeholders.

It is estimated that 34 days will be required at a daily rate of \$1,800.

**Project Manager & Principal Network Engineer** – Provides necessary guidance and support to the Project to ensure successful completion of the project and oversee the completion of the Terms of Reference. Position requires 25 years experience in managing projects in the telecommunications area.

It is estimated that 101 days will be required at a daily rate of \$1,680.

**Principal Network Engineer/Consultant** – Provides or leads in-depth analyses for translating customer needs into the design of networks. Capable of applying extensive knowledge in at least one of the following areas to provide original and innovative solutions: network architecture, network interoperability, business case development, and testing and integration.

It is estimated that 89 days will be required at a daily rate of \$1,600.

**Principal Reliability Engineer/Consultant** – Provides or leads in-depth analyses for network reliability, robustness, resilience, continuity of operations, and disaster planning activities.

It is estimated that 60 days will be required at a daily rate of \$1,320.

**Principal Models & Tools Engineer/Consultant** – Provides or leads activities associated with developing and implementing the environment and the set of models and tools required for network management and modeling and simulation.

It is estimated that 41 days will be required at a daily rate of \$1,320.

**Senior Reliability Network Engineer/Consultant** – Works under the direction of the Principals in the area of reliability and related models and tools.

It is estimated that 20 days will be required at a daily rate of \$1,200.

**Principal Security Engineer/Consultant** – Provides or leads in-depth analyses for network security (physical and cyber) activities.

It is estimated that 15 days will be required at a daily rate of \$1,320.

**Principal Business Case Analyst/Consultant**– Provides or leads in-depth analyses of the financial aspects of the network evolution; namely, capital expenses, operational expenses, rate of return on investments, cost models, etc. Provides environmental analysis, regulatory analysis and development impact analysis.

It is estimated that 35 days will be required at a daily rate of \$1,320.

#### **Other Direct Labor**

**Local Engineer/Consultant** – Provides assistance with gathering data, network design and implementation plan under the direction of the Project Manager and Principal Network Engineer. This individual will develop an understanding of the STS network in Romania, and international connectivity with meteorological agencies and international humanitarian relief agencies, such as the Red Cross and NATO.

It is estimated that the local engineer/consultant will be required for nine (9) months at \$5,000 per month, inclusive of consulting fees and expenses.

#### **OTHER DIRECT COSTS**

##### **Travel**

International flights from New York to Bucharest for the program and project managers and principal engineers. Twelve flights at \$1,000; 120 days per diem at \$325/day; and ground transportation at \$5,100.

##### **Other Expenses**

Documentation, drawings and printing. Total cost \$2,300.



**ANNEX 3**

**USTDA NATIONALITY REQUIREMENTS**



**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 the 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.*

**A N N E X 4**

**USTDA GRANT AGREEMENT, INCLUDING TERMS OF REFERENCE AND  
MANDATORY CONTRACT CLAUSES**



RECEIVED  
U.S. TRADE AND  
DEVELOPMENT AGENCY  
JAN 29 2008

USDIA# 08-81062A



U.S. TRADE AND  
DEVELOPMENT AGENCY  
JAN 29 2008  
DB. JM-DW. EK  
MD, MV

# GRANT AGREEMENT

*between*

*The Government of The United States of America, acting  
through the U.S. Trade and Development Agency*

*and*

*The Special Telecommunications Service, Romania*



## GRANT AGREEMENT



### 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 Special Telecommunications Service ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US\$700,000 ("USTDA Grant") to fund the cost of goods and services required for Technical Assistance ("TA") on the proposed Next Generation Network Infrastructure for Emergency Management Project ("Project") in Romania ("Host Country").

#### **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 TA ("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 TA ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The TA will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the TA 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 TA.

#### **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.



## GRANT AGREEMENT



### 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](http://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 TA. Upon approval of this selection by USTDA, the Grantee and the Contractor shall then enter into a contract for performance of the TA. The Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the TA 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 TA. 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 TA 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.



## GRANT AGREEMENT



### **(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 TA 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. TA Schedule**

### **(A) TA Completion Date**

The completion date for the TA, which is March 31, 2009, is the date by which the parties estimate that the TA 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.



## 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 TA 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 TA 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.



## GRANT AGREEMENT



### **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 TA, 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 TA 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 TA 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 Romania or USTDA and the Grantee will be represented by the Director of the Special Telecommunications Service. 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:



## GRANT AGREEMENT



To: Marcel Opris  
Director  
Special Telecommunication Service  
323A, Splaiul Independentei  
Sector 6, 060044 Bucharest  
Romania

Phone: +40-21-202-21-01  
Fax: +40-21-311-20-39

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.: 118/91001  
Activity No.: 2008-81002A  
Reservation No.: 2008810001  
Grant No.: GH2008810001

### **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 TA, 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.



## GRANT AGREEMENT



### **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 TA, 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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## GRANT AGREEMENT

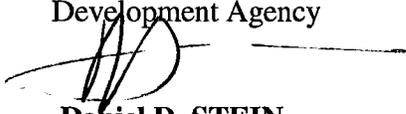


**IN WITNESS WHEREOF, the Government of the United States of America and the Special Telecommunications Service, each acting through its duly authorized representative, have caused this Agreement to be signed in the English language in their names and delivered as of the day and year written below. In 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 Special Telecommunications  
Service**

By: Regional Director for Europe and  
Eurasia – US Trade and  
Development Agency

  
**Daniel D. STEIN**

By: The Director of The Special  
Telecommunications Service

  
**Marcel OVRİŞ**

Date: January 21<sup>st</sup> 2008

Date: January 21<sup>st</sup> 2008

**Annex I -- Terms of Reference**

**Annex II -- USTDA Mandatory Clauses**



## GRANT AGREEMENT



### Annex I

#### Terms of Reference

These Terms of Reference (TOR) outline the successive tasks that shall be incumbent on the Contractor in undertaking the Technical Assistance (“TA”) on the proposed Next Generation Network Infrastructure for Emergency Management Technical Assistance Project (“Project”) in Romania. The Contractor shall provide TA to the Romanian Special Telecommunications Service (“Grantee”) in order to develop a network that supports the requirements of the Emergency Operations Center (EOC) and the Emergency Management Information System (EMIS) of the General Inspectorate for Emergency Situations (GIES). This activity is an essential complement to the overall Hazard Risk Mitigation and Emergency Preparedness Project (HRMEP) which is being funded by the World Bank and will set Romania on course to establish comprehensive Next Generation Network (NGN) levels of service.

Towards this end, the Grantee requires the services of a Contractor to complete the following Tasks under this TA. The Contractor shall:

#### **TASK 1: Network Infrastructure Assessment**

##### *1.1 Kick-off Meeting*

The Contractor shall meet with the Grantee in Bucharest at a “kick-off meeting” to launch the TA. During this meeting, the initial work plan shall be reviewed, as shall expectations for deliverables. During this meeting, the Contractor and the Grantee’s technical experts shall discuss the existing system and plan for information gathering on the network layout, service types and objectives, existing data transmission speeds, existing coverage areas, existing equipment and facility locations. The Contractor shall inquire about Grantee’s objectives for network expansion, including traffic volume, coverage area and equipment under consideration. All information gathered during the kick-off meeting will be used as a basis for the network backbone infrastructure assessment.

##### *1.2 Network Backbone Infrastructure Assessment*

The Contractor shall conduct an assessment of the current network infrastructure with a view toward its evolution into a NGN. This assessment shall focus on the suitability of current resources to support the transformation of the network into a high-bandwidth, high-traffic capacity, and resilient infrastructure with ubiquitous service availability.



## GRANT AGREEMENT



The Contractor shall conduct an evaluation of network readiness to support the technologies and services of the EOC and judet operations centers, which shall include, but not be limited to the following:

- a definition of services and how they relate to mission and technical objectives;
- a baseline assessment of the current network infrastructure with respect to
  - existing network capabilities;
  - current service capabilities;
  - current capacity and utilization;
  - existing network infrastructure requirements;
  - existing operation and implementation planning requirements; and
- an identification of major gaps in the existing infrastructure in order to plan for NGN conversion and realization.

The Contractor shall assess the adequacy of the telecommunications infrastructure to support the EOC and its E112 emergency operations, the public service answering points (PSAPs), the intervention forces, dispatch centers, and all other ministries or national agencies holding responsibility for emergency and crisis management.

The Contractor shall assess the adequacy of network connectivity between the GIES and the EOC, determine if it allows sufficient capacity, and make recommendations for any upgrades that may be required.

### *1.3 Existing Providers and Service Level Agreements*

The Contractor shall review all service level agreements (SLA) in preparation for the analysis that is called for under task 5.3.

## **TASK 2: Satisfying EMIS Performance Requirements**

The EMIS interfaces with various entities, databases, sensors and applications; this task makes it incumbent upon the Contractor to synchronize NGN capabilities with EMIS performance requirements.

### *2.1 NGN Requirements for EMIS*

With regards to connectivity, bandwidth capacity and the ability to deliver next-generation services, the Contractor shall determine the requirements that the NGN must satisfy in order to support the EMIS for the expanded and extended EOC and its satellite agencies.

### *2.2 NGN Parameters*

The Contractor shall meet with the Grantee in order to define NGN parameters, where the Contractor shall learn of the bandwidth requirements for each of the technologies deployed at the EOC. The Contractor shall analyze these requirements and make recommendations



## GRANT AGREEMENT



regarding the configuration of the Project such that it meets the telecommunications requirements of the EOC and its satellite agencies. Particular emphasis shall be placed on the requirements of the agencies responsible for fire response, emergency medical services, police, gendarmerie, public works, and the environment.

### *2.3 Network Extensions and Upgrades*

The Contractor shall make recommendations with respect to the extension and upgrade of the existing telecommunications infrastructure. Upon completion of Task 2, the Contractor shall submit a report to the Grantee summarizing its assessments and recommendations. This report shall include supporting network diagrams, schematics and equipment specifications for each of the recommendations made.

### **TASK 3:     Blueprint for Next-Generation Emergency Management Network**

#### *3.1 Blueprint*

The Contractor shall prepare an NGN infrastructure blueprint in order to enable the Grantee to support crisis management in concert with participating ministries and agencies. The blueprint will consist of:

- a detailed design for a state-of-the art network characterized by high reliability, ubiquitous availability and comprehensive security;
- a statement on network interconnectivity for important stakeholders; and
- a discussion of additional upgrades and improvements to existing networks that will support mitigation measures in the proposed NGN design.

#### *3.2 EOC Infrastructure Support*

The Grantee shall provide the Contractor with information regarding the architecture of the telecommunications network and the location of its assets (e.g. switches). Based on this information, the Contractor shall prepare a detailed technical report that provides, at a minimum, the following items:

- an overall plan for a site housing the models, tools and databases necessary for network tests and assessments;
- a discussion of impact assessment tools for specific threats (i.e. natural and man-made disasters), both prospective and currently existing in Romania;
- a representative model of telecommunications infrastructure in a selected area, including a geographical information system (GIS) mapping of network facilities with superimposed call processing activity;
- a sample model to assess typical timeframes for post-disaster recovery; and
- a discussion of methods and procedures to update models and improve performance assessments.



## GRANT AGREEMENT



### *3.3 NGN Transition Roadmap*

In preparation for the Implementation Plan (Task 6.1), the Contractor shall produce a budget and a terms of reference that encompass projected equipment specifications, performance standards and legacy-to-NGN transitional deployment milestones, as well as technical reviews and the acquisition of critical asset data sets.

#### **TASK 4: Enhanced Network Functionality and Capacity to Support Geospatial Information Systems and Critical Incident Management Systems**

##### *4.1 Analysis of Transmission Rates for GIS files*

The Contractor shall make recommendations on network requirements for GIS tools and data exchange.

##### *4.2 Analysis of Real-Time Critical Incident Management System Collaboration Tools*

The Contractor shall interview the technical staff of the EOC's User Working Group (UWG) in order to analyze the staff's telecommunications needs.

The Contractor shall make recommendations on network requirements regarding the Critical Incident Management System for users at the EOC, at participating ministries and at the judet operations centers.

#### **TASK 5: Planning and Advisory Services**

##### *5.1 NGN for Emergency Management*

The Contractor shall prepare and submit to the Grantee guidelines for planning and implementing the NGN upgrades to support emergency management services in Romania.

##### *5.2 NGN for EMIS and Romanian Governmental Network*

The Contractor shall prepare a report that makes recommendations for the NGN vis-à-vis EMIS, which shall take into account any implications of the upgrade for the Romania-wide government network. This report shall include the Contractor's findings on existing and planned networks that support the EOC, the judet operations centers, the ministries, the police and the gendarmerie. It shall be written as an institutional framework guide for a Romanian Governmental Telecommunications Network. This report shall assess the capabilities of and make recommendations for connectivity, interoperability, capacity, and services organization and planning. Special attention shall be given to telecommunications infrastructure for data (e.g. SCADA sensors and video signals from police, traffic authorities, judet operations center closed-circuit television (CCTV) and other offices) and



## GRANT AGREEMENT



conferencing (including both voice and multimedia) exchanges that support emergency service requirements.

The Contractor shall provide assistance with strategic planning and associated activities, as they relate to the architecture for the NGN.

### *5.3 Service Level Agreements/Pricing*

The Contractor shall provide recommendations for the development of procurement plans based on proposed SLAs. The Contractor shall also prepare an analysis that identifies cost-effective alternatives for owner-provided and owner-leased services, and shall make recommendations for renegotiation of the SLAs based thereupon. These recommendations should be included in the report on the Romanian Governmental Telecommunications Network.

### *5.4 Security Safeguards*

The Contractor shall review aspects of the NGN system that are designed to prevent unauthorized access and protect against threats that may disrupt, deny, degrade or altogether destroy service. It is critical that security safeguards are implemented before NGN systems are launched, specifically in the areas of physical security, operational security, network security and information assurance. The Contractor shall include findings and recommendations relating to security safeguards in the report on the Romanian Governmental Telecommunications Network.

## **TASK 6: Implementation and Financing Plan**

### *6.1 Implementation Plan*

The Contractor shall prepare and submit to the Grantee an implementation plan for the Project incorporating each of the recommendations made in Tasks 1-5 above.

### *6.2 Economic Analysis*

The Contractor shall analyze economic contingencies, market conditions for technologies and network services, supply agreements, alternative methods of achieving NGN potentiality, prospective enhancement technologies, and extension of the network as outlined in the implementation plan. The most likely source(s) of implementation financing shall be considered in this analysis.

The economic analysis and other supporting documentation prepared for the Grantee shall satisfy the requirements for prospective public, private and European Union (EU) funding sources.



## GRANT AGREEMENT



### 6.3 Financial Analysis

The Contractor shall analyze sources of financing for NGN implementation (i.e. the technology upgrade and the network extensions). This analysis shall include prospective financing based on the Grantee's operational budget as well as resources available from participating ministries, the U.S. Export-Import Bank, the World Bank, other multi-lateral development banks such as the European Bank for Reconstruction and Development (EBRD) and the EU Structural Fund.

### **TASK 7: Development Impact Analysis**

The Contractor shall evaluate the development impacts that would be expected if the Project is implemented in accordance with the TA recommendations. This analysis shall include any additional developmental benefits that may result from the Project's implementation, including spin-off projects and the establishment of industry-related businesses.

The Contractor shall specifically address each of the following categories:

- **Infrastructure**  
The Contractor shall provide a brief synopsis of the new infrastructure required to complete the Project. (For example, "The NGN would result in the expansion of networks to support state services, including emergency services, urban land use, etc".)
- **Human Capacity Building**  
The Contractor shall assess the number and type of local positions that will be needed to develop the NGN (i.e. perform network extensions and upgrades), shall estimate the number of Romanians that will receive training, and shall describe such potential training programs. Human capacity building with respect to entities that would benefit from the NGN shall also be included, such as network users at public service facilities.
- **Technology Transfer and Productivity Enhancement**  
The Contractor shall provide a description of any advanced technologies that will be utilized as a result of the Project, and shall describe any efficiency gains that are to be expected. (For example, "by sharing video, weather information, and data from detection devices, productivity in terms of emergency response time, loss of life and property reduced would be improved by x amount of dollars or by x percentage").
- **Other**  
The Contractor shall describe any other developmental impacts or benefits that will result from the Project, such as follow-on or replication projects, trends toward safer workplaces or enhanced good governance.



## GRANT AGREEMENT



### **TASK 8: Regulatory Review and Preliminary Environmental Analysis**

The Contractor shall assess current Romanian law and EU regulations as they apply to the Grantee's NGN, and ensure compliance of the latter with the former. Implications of national and international law for the upgraded network shall also be discussed. The Contractor shall furthermore identify laws and regulations that, if modified, will enable more effective local and national NGN implementation.

The Contractor shall complete a preliminary environmental analysis of the proposed NGN to ensure its consistency with standards in Romania, the EU and with financing institutions such as the World Bank. This analysis shall identify potential and/or negative impacts, discuss the extent to which negative impacts can be mitigated, and develop plans for a full environmental impact assessment in anticipation of the Project moving forward to the implementation stage. The Contractor shall identify those mitigation measures the Grantee must take in order to meet applicable laws and regulations.

### **TASK 9: Final Report**

The Contractor shall prepare and deliver to Grantee and USTDA a substantive and comprehensive Final Report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee in connection with the performance of those tasks. The Final Report shall incorporate the findings, recommendations and conclusions of the TA. It is the Contractor's responsibility to identify prospective U.S. sources of supply, assess their capabilities, and include their business names, points of contact, addresses, and telephone and fax numbers in the Final Report. The Contractor shall prepare the Final Report in accordance with Annex II, Clause I of the Grant Agreement.

The Contractor shall provide the Final Report and any additional briefings to the Grantee in English.

According to Annex II, Clause I of the Grant Agreement, the Contractor shall provide the Grantee and USTDA with two electronic copies of the Public version of the Final Report on CD-ROM.

The CD-ROM version of the final report shall include:

- Adobe Acrobat readable copies of all documents;
- Source files for all drawings in AutoCAD or Visio format; and
- Source files for all documents in MS Office 2000 or later formats.



## GRANT AGREEMENT



### 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.



## GRANT AGREEMENT



### 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 Special Telecommunications Service ("Client"), dated \_\_\_\_\_ ("Grant Agreement"). The Client has selected \_\_\_\_\_ ("Contractor") to perform the Technical Assistance ("TA") for the Next Generation Network Infrastructure for Emergency Management Project ("Project") in Romania ("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 TA 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



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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 TA 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 TA 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.



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### **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 TA. 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.



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### **(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 an advance 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 an advance payment (if any):

"As a condition for this advance payment, which is an advance against future TA costs, 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."



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(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 an advance 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



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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 advance 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.



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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.



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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. TA Schedule**

#### **(1) TA Completion Date**

The completion date for the TA, which is March 31, 2009, is the date by which the parties estimate that the TA 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 TA. 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 TA 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:



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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.: 118/91001  
Activity No.: 2008-81002A  
Reservation No.: 2008810001  
Grant No.: GH2008810001

### **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.