

REQUEST FOR PROPOSALS

**TECHNICAL ASSISTANCE FOR THE
NATIONAL EMERGENCY MANAGEMENT SYSTEM**

Submission Deadline: **4:00 PM**
LOCAL TIME
APRIL 30, 2007

Submission Place: Lieutenant General Vladimir Secara
Inspector General
General Inspectorate for Emergency Situations
46, Banu Dumitrache Street
Sector 2, Bucharest
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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 Grantee in order to enhance emergency management of recent implemented National System for Emergency Situations Management (NSESMS). 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

Due to its climate and geographic position, Romania is dealing with a variety of natural risks, including landslides, floods, earthquakes, fires and in some isolated areas, storms or tornadoes. Also, entropic risks are present, such as technological risks, due to the economic and industrial growth.

This background, combined with recent flooding experiences, raised some great challenges in the area of disaster management and emergency response. This includes the collection of data, monitoring and analysis, system integration, equipment and decision-making tools, program planning and management.

Therefore, Romania requested a loan and in 2005 the Romanian Ministry of Administration and Interior (MAI) started working with the World Bank and other multi-lateral development agencies to implement a multi-sectorial program in the preparedness' domain, in order to reduce vulnerabilities and enhance risk mitigation capacity. This program comprises also a component focusing on improving risk management capacity.

As Romania works towards European Union integration, it is critical that the country address concerns regarding its ability to guarantee the security of its citizens from calamities. Romania is vulnerable to a variety of natural and non-natural disasters, including earthquakes, floods, landslides and other ecological hazards. Bucharest has the greatest seismic risk of any European capital, and floods are annual events that produce unnecessary human loss and devastating property damage. Approximately 20% of Romania's land area is at risk of landslides, and accidents at mining sites result in significant ecological damage.

Romania has undertaken a number of investments to better protect its citizens from potential calamities, including water, environmental and meteorological monitoring systems that are capable of detecting severe weather and most importantly flood situations. USTDA has supported multiple projects in Romania to address these issues. Since 2003, USTDA has invested over \$268,170 1.3 million towards the following projects: (1) the DESWAT project, which provides for flood monitoring equipment along river basins, (2) WATMAN, which builds upon the monitoring systems established in DESWAT to create a national flood monitoring system; and (3) INTEROPERATE, which is a meteorological monitoring system that forecasts national weather and is designed to interoperate with DESWAT and WATMAN. These systems allow the government to be able to forecast emergency situations, and the last piece of their civil

defense system is to have the ability to respond to these emergency situations. However, the MAI is concerned that it lacks the technical expertise to ensure that the equipment procured under NSESM will be able to interoperate and not duplicate technologies already in place such as DESWAT. Also the MAI would like to ensure that the equipment purchased leverages Romania's other assets to the best degree possible. The requested technical assistance would seek to provide assistance to the MAI in these areas, and it is designed to compliment and reinforce the ongoing World Bank project. Please note that the technical advisor would not be managing or assisting in the management of the World Bank project. The advisor would just provide technical support and advice to the MAI on integration technologies, technical specifications and requirements for systems to operate.

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

1.2 OBJECTIVE

The objective of the Technical Assistance is to assist the MAI coordinate projects within emergency agencies at the national and county level, and evaluate the telecommunications networks and environmental monitoring infrastructures needed to implement a national emergency management system. The Terms of Reference (TOR) for this technical assistance is attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

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

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. \$268,170 dollars.

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 "National Emergency Management System Technical Assistance 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. \$268,170 dollars.

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 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.

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; (e) in case of a "Joint Venture," proposal, the proposal will contain documents certify the association

and sharing responsibilities, and a document certifying who is responsible in the name of Joint Venture.

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 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:

Lieutenant General Vladimir Secara
Inspector General
General Inspectorate for Emergency Situations
46, Banu Dumitrache Street
Sector 2, Bucharest
Romania

Phone: +40-21-232-9586
Fax: +40-21-2329586 / +40-21-2420990
Email: igsu@mai.gov.ro

An Original and eight (8) copies of your proposal must be received at the above address no later than 4:00 PM, on April 30, 2007.

Proposals may be either sent by postal mail, overnight courier, or hand-delivered. Whether the proposal is sent by postal mail, courier or hand-delivered, the Offeror shall be responsible for actual delivery of the proposal to the above address before the deadline. Proposals received through e-mail will not be evaluated. 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 and eight (8) copies 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.

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. \$268,170 dollars.

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

The following sections and content are required for each proposal:

- Transmittal Letter,
- Documents certifying the association of firms (in case of Joint Venture) and who is the leader,
- 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. In case of Joint Venture, similar information is needed to be provided. 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. Present 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. Note specifically any task activities included or excluded and which may differentiate Offeror's technical approach from others. 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.

Offerors may elect to propose alternative approaches and/or activities and tasks if it is felt they will provide technical, schedule, or other advantages to the Grantee. The Offeror should cite the applicability of alternative approaches/activities to achievement of project objectives and the projected advantages to be gained through their use. To assure that all proposals will be comparable and any alternatives will be evaluated against a relevant background each Offeror must provide a full response to the RFP as written before any full or partial alternative is proposed. Alternatives must be clearly identified as such.

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 following criteria:

Approach to Tasks and Understanding of Terms of Reference – 15 points –

- Network Capabilities
- Monitoring Analysis
- Equipment and Decision Making Tools
- Program Planning and Management

Experience with Project Management/Systems Architecture – 15 points –

- Program management or high level information engineering in support of architecture, infrastructure, and standards development.
- Development of environment assessment methodologies, ICASE requirements analysis, internet architectures, implementation strategies and process modeling.
- Development of internet prototypes currently used by emergency management, defense, or other governmental agencies.
- Project management or technical assistance for governmental systems engineering concept and demonstration projects.
- Systems engineering automation, product certification, technology transition, and security technology assessments.
- Supervision of documentation.
- Program management or technical assistance for process modeling and acquisition management policy.
- Management of process improvement teams.
- Policy and process improvement with respect to project restructuring and contracts, namely Life Cycle Assessment Management (LCAM); LCAM initiative policy and acquisition guidance, and program management guides.
- Management of the transition of LCAM to web-based decision making tools. Technical consulting on TRM issues, information architectures, architecture environments and tools, applications, process modeling and analysis, optimization methods, interoperability and open systems.

Experience with Systems Assessment and Procurement – 10 points –

- Federal Emergency Management Agency (FEMA) in the United States, specifically its activities, functions and operations relating to the assessment of information systems.
- On-site assessment of FEMA's information systems support for disaster operations.
- Establishment of training programs for emergency management for information systems.
- Assessment tools for large scale information technology contracts and long term planning for procurements.
- Work with operations support for acquisition, tests, exercises and operations.
- Management of multimillion dollar technical/engineering assistance contracts.
- Aerial reconnaissance effort in support of disaster damage assessment and management of resources for disaster assistance.
- Overhead Imagery.
- Communications security, compromising emanations, and ADP security, including threat and vulnerability assessments.

Experience with Atmospheric Science – 10 points –

- Satellite remote sensing, data analysis, software development, climatological and meteorological research, general forecasting, and product development. technical management of task orders.
- NOAA GOES product development, Advanced TIROS Operational Vertical Sounder product development, and SSM/I data analysis.

Experience with Architecture Development Cycles – 10 points –

- Open Group Architecture Framework Architecture Development Cycle
- C4ISR Architecture Framework
- Approach for shortening life cycle development costs

Experience with Network Engineering – 10 points –

- Systems/network engineering with focus on the application of technology for optical, packet/TDM networks and 2.5G/3G broadband wireless networks and emerging technologies used in emergency management, or defense applications.
- Design and implementation of state-of-the-art voice and data networks for large enterprises or government agencies, providing network solutions for complex telecommunications networks.
- Network planning, SONET/SDH switching, architecture and design, traffic engineering, and solutions planning.
- Technical experience in network architecture (LAN/WAN metro, SONET, 2.5G/3G wireless networks, Virtual Private Networks, PSTN, optical switching/routing, and Frame Relay/ATM.) and related disciplines.
- Technical requirements analysis, traffic engineering, analysis & planning, packet voice switch, network/systems engineering, and ISO 9000.

Experience with Life Cycle for Standards-based Architecture and Software Engineering – 5 points –

- Software/information technology engineering.
- Life cycle for standards-based architecture, database design, design methodologies, structured analysis and design, data design, and testing, and full life-cycle documentation.
- Process engineering, web-based implementations, and electronic publishing tools.
- Quality assurance, geographical information systems, configuration management, and information assurance.

Approach to IP Communications Networks Development and Productivity Applications – 5 points –

Knowledge of Custom Applications for Critical Incident Management Systems – 5 points –

Knowledge of Special Telecommunications Service and Existing Network – 5 points –

Knowledge of GIES, Organization and Existing Operational Structure – 5 points –

Overall Experience and Qualifications of Assigned Personnel and Subcontractors – 5 points –

It is a firm requirement that the experience of the key personnel assigned to the project, as stated in their curriculum vitae, matches the evaluation criteria stipulated above and that the personnel assigned to the project in the response proposal are the personnel assigned to the project and actually perform the Tasks stated in the Terms of Reference, and participate in the meetings and work sessions in-country.

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

Price will not be a factor in contractor selection.

ANNEX 1

Federal Business Opportunities Announcement

General Vladimir Secara, Inspector General, General Inspectorate for Emergency Situations, 46, Banu Dumitrache Street, Sector 2, Bucharest, Romania, Phone: +40-21-232-9586, Fax: +40-21-2329586 / +40-21-2420990, Email: igsu@mai.gov.ro

B – Romania: National Emergency Management System Technical Assistance Project

POC Evangela Kunene, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. National Emergency Management System Technical Assistance 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 provide Technical Assistance to assist the Romanian Ministry of Administration and Interior (MAI) in the implementation of its integrated emergency management system.

The objective of the Technical Assistance is to assist the MAI to coordinate projects within emergency agencies at the national and county level, and evaluate the telecommunications networks and environmental monitoring infrastructures needed to implement a national emergency management system. This Technical Assistance will be comprised of the following tasks: Network Infrastructure Readiness Assessment (STS); Network Infrastructure Readiness Assessment (County and Municipal Networks); Network Infrastructure Readiness Assessment Report; Assessment of Data Collection and Analysis of Sources and Capabilities; Report on Data Collection and Analysis Sources and Capabilities; Assessment of Facility, Equipment, Software (GIS and Decision-making Tools), and Communications; Report on Facility, Technology, and Communications; Program Review; Report on National Emergency Operational Programs; Assist with Life Cycle Support Plan; and submit a Final Report.

The U.S. firm selected will be paid in U.S. dollars from a \$268,170 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

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

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

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 4:00 PM, April 30, 2007 at the above address. Evaluation criteria for the Proposal are included in the RFP. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

ANNEX 2

Definitional Mission Report*
(For background information only)
(Note: The final TOR is found in Annex 5)

*** Portions Omitted**

National Emergency Management System in Romania

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National Emergency Management System in Romania

A. Executive Summary

Reilly Associates was retained by the United States Trade and Development Agency (USTDA) to conduct a definitional mission assessing potential projects in Romania in the area of integrated emergency management systems (IEMS). USTDA had received a number of proposals for IEMS related projects, and had committed substantial funds to feasibility studies in environmental projects with data collection and monitoring that are components of IEMS, and could usefully be applied to them.

The need for a disaster management plan and a national emergency management system to respond to all hazard risks is evident from recent floods and the transition from the centralized organization of relief resources to the decentralized organizational framework that characterizes modern day Romania.

This definitional mission concentrated on clarifying requirements in Romania and ascertaining the most effective contribution that USTDA could make to the deployment of its emergency management system and supporting telecommunications network. As the Romanian government and the World Bank have already taken substantial initiatives with respect to a national emergency management system, the focus of the definitional mission inevitably shifted in that direction. The information and analysis of this definitional mission and the work of the World Bank effectively complete the feasibility study stage of any support activity. For this reason, the most effective contribution that the USTDA can make at this time is technical assistance.

Technical Assistance

The Ministry of Administration and Interior (MAI), through the General Inspectorate for Emergency Situations (GIES) is implementing an emergency management project under a loan agreement from the World Bank.

The technical assistance (TA) requested by the MAI is structured to assure compatibility between its concept of operations, as defined in the National System for Emergency Situations Management (NSES) and the implementation of the command and control and telecommunications infrastructure necessary to support its operations by the GIES. The TA will provide support to MAI/GIES to optimize and avoid duplications of projects planned or implemented within multiple emergency agencies at the national and county level. Further, the TA will provide objective and independent evaluations of critical telecommunications networks and environmental monitoring infrastructures with respect to their capabilities to support the National Emergency Operational Center.

The TA is timed to coincide and complement the studies and pilot projects sponsored by the World Bank under the *Hazard Risk Mitigation and Emergency Preparedness Project* (HRMEP). The time frames of the TA and World Bank studies are coordinated, and designed to complement and reinforce one another. The TA will aid the MAI in making

National Emergency Management System in Romania

informed decisions regarding system compatibility, ensuring that the latest technology is evaluated, specified, and procured.

The TA comprises tasks in four major areas, described in the paragraphs below.

Network Capabilities

The TA includes evaluation of the existing network capabilities, including the Special Telecommunications Service (STS), as the telecommunications backbone for the National Emergency Operational Center and will stipulate recommendations for necessary upgrades to provide an Internet Protocol (IP) platform with connectivity and capability to support data collection and dissemination, emergency communications for coordination and operations, notification systems and multimedia collaboration tools.

Monitoring and Analysis

The TA includes evaluation of the data sources and communications for environmental and seismological monitoring and analysis and validation of their usefulness for the National Emergency Operational Center and county centers, in particular with respect to early warning and assessment tools.

Equipment and Decision Making Tools

The TA includes evaluation of technologies under consideration for data presentation, decision making and telecommunications network for use by the National Emergency Operational Center, county centers, the ministries and central public agencies with responsibilities in emergency management.

Program Planning and Management

The TA includes support for the MAI on the accommodation of all relevant projects regarding the Emergency Management Information System (EMIS), upgrading the supporting telecommunications networks at the national, county and local level, the National Emergency Operational Center, and all relevant activities.

The MAI, GIES, and the Project Management Unit for the World Bank projects have indicated that the technical assistance and the resources that TA would bring to the decision making process for emergency management technology will significantly enhance the quality and functionality of the emergency operations center(s) that will be deployed over the next five years.

National Emergency Management System in Romania

Background

At the outset of the definitional mission, a project proposal for an emergency operations center for the Municipality of Bucharest (for an environmental mitigation system) was presented for consideration. However, this project was eclipsed upon learning about plans by the Ministry of Administration and Interior (MAI) for a National System of Emergency Management and a National Emergency Operational Center, and the World Bank's *Hazards Risk Mitigation and Emergency Preparedness Project*. Liaison with the World Bank's representative and the Project Management Unit in Bucharest, and close examination of the loan documents for this project, were priorities during the definitional mission. Strong support for technical assistance was expressed by the General Inspectorate for Emergency Situations (GIES) and the Special Telecommunications Service (STS).

Hazards and Natural Disasters

Romania's vulnerability to natural and non-natural disasters are mainly in four areas: earthquakes, floods, landslides and ecological hazards. Bucharest is the European capital with the highest exposure to seismic risk; this is among the top ten in the world. Floods are annual events that produce human loss and high property damage. Approximately 20% of Romania's land area is at risk of landslides. And, accidents at mining sites result in significant ecological damage from pollution. This establishes the need for a national emergency management system to respond to disasters.

National Emergency Management System

The present organization of the Government of Romania's emergency management system was created by Emergency Ordinance no. 21 of 15.04.2004. It is referred to as the National System of Emergency Management. Its structure and functions reside with the General Inspectorate for Emergency Situations (GIES), which was formed by the union of the Civil Protection Command and the General Inspectorate of the Corps of the Military Firefighters.

The GIES is a component of the National System of Emergency Management and part of the protection forces of the National Defense and Security System. The GIES ensures, according to its legal prerogatives, the cooperation and national representation in the field of civil protection, firefighting and emergency management, and coordinates at the national level, the emergency management activities of participating institutions, and NATO, the EU, and UN, and all other organizations which the Romanian government is obligated to cooperate with under agreements, conventions and treaties.

The National Emergency Operational Center is formed and functions within the GIES. The emergency management information and communications systems for this center, and related institutions is currently being developed. Considerable financial resources are

National Emergency Management System in Romania

being committed to this endeavor from national budgets, the European Union and the World Bank.

Hazard Risk Mitigation and Emergency Preparedness Project

The main objective of the *Hazard Risk Mitigation and Emergency Preparedness Project* is to support the Romanian Government in reducing the ecological, social and economic vulnerability in case of natural disasters and catastrophe generated by mining spills. It has four major components: a) strengthening emergency management and risk financing capacity; b) earthquake risk reduction; c) flood and landslide risk reduction; and d) risk reduction of mining accidents in the Tisza basin.

The first component of the project – strengthening emergency management and risk financing capacity – is most relevant to the emergency management system proper, and this definitional mission.

Major elements of this component that are directly related to the emergency management system are:

- Modernization of the communications system in case of national, regional or local emergency;
- Development of an emergency management information system; and
- Development of a public information program.

The Ministry of Administration and Interior is responsible implementation of these elements, in close cooperation with the National Committee for Emergency Situations (NCES), the GIES and the project management unit (PMU) under the loan agreement. In order to provide a joint framework for project development and management, the NCES has set up a User Working Group (UWG) with representatives of the ministries and central public agencies with responsibilities in the field of emergency management.

The technical assistance recommended in this definitional mission report is intended to provide support to the MAI, in conjunction and coordination with the PMU and UWG.

Six consultancy firms (some in consortia) responded to the RFP. Although publicly advertised and eligible, no American consulting firms were in any of the consortia that responded to the RFP. The technical assistance proposed in this definitional mission report is a means for U.S. companies to contribute to the process, fill any technical gaps in the scope of work, and lend an American perspective to the process.

Telecommunications

The Special Telecommunications Service (STS) is a central specialized entity which organizes and coordinates the activities in the special telecommunications field for the public authorities in Romania. The telecommunications network (STS related scope) is

National Emergency Management System in Romania

an essential part of the IEMS and, thus, merits much attention in this definitional mission report. It is evident, although subject to confirmation and agreement, that the STS network is the most economical and reliable to support the crisis management center. However the ATM network will need to be upgraded. A needs analysis and network readiness assessment must take place.

Agreement between the STS and MAI on this sensitive area will eventually be found in the design of the network, definition of network services and network management (at the NOC). The network should be designed and managed especially for the NEMS, by the STS, but be separate from other networks. The STS would manage a network separately and secure with bandwidth dedicated exclusively to the NEMS. Other networks, administrative and E 112, would interface as required to support the NEMS. While it is very important for the NEMS to have its own dedicated network, it makes sense to use the resources of the STS to deliver the required network services.

Environmental Monitoring

Environmental monitoring is the area that should have more clarity. This is another critical area. The national operations center will require substantial environmental data and analysis, communicated in a usable and timely manner, clearly displayed, and integrated with the necessary decision making tools. All this depends on the data collected. There appear to be gaps in the data collection for flood detection and seismic instrumentation. The sources and quality of data will be critical to the working of whatever system is devised, along with a reliable supporting telecommunications infrastructure. The terms of reference for the technical assistance recommended in this definitional mission report are intended to provide a clear definition of the resources that are available for monitoring, and analysis, and display of information, and its timely communication.

Financing

Funding for Component A in the World Bank loan is USD 10.9 million; however, actual funding, in order to complete the procurement, installation and commissioning of the fully-deployed system nationally will most likely require twice that amount.

Investment/Exports

The initial deployment costs for investments that may result from the technical assistance recommended in this definitional mission report are estimated at approximately \$15.8 million. The extension of the emergency management and communications to all the prefectures (including the City of Bucharest) would result in investment of an additional \$39.7 million over a three year period following the initial deployment.

Total projected exports related to the recommended technical assistance would be \$40 million, or 72% of the total investment.

National Emergency Management System in Romania

The findings of this definitional mission indicate that the technical assistance requested by the MAI, as developed during this definitional mission, is soundly conceived and meets the USTDA's criteria for funding.

Recommendation

It is the recommendation of this definitional mission that the USTDA approve a Grant to the Romanian Ministry of Administration and Interior in the amount of \$268,170 to provide technical assistance in accordance with the TOR and Budget included in Annexes I and II respectively.

National Emergency Management System in Romania

B. Project Description

Introduction

Project proposals considered for Romania included a National Crisis Management Center and an Emergency Operations Center for the Municipality of Bucharest (for an environmental mitigation system). Projects related to emergency management with funding under the World Bank's *Hazards Risk Mitigation and Emergency Preparedness Project* were thoroughly investigated. Liaison with the World Bank's representative in Bucharest, and study of the loan documents for this project, were a priority during the definitional mission.

Collecting information on these proposals involved multiple meetings with the Ministry of Internal Affairs and Administration, the General Inspectorate for Emergency Situations, the State Telecommunications Service, General Inspectorate of Romanian Gendarmerie, and Department of Environment, learning about crisis management from each of their perspectives. A meeting was held with the Mayor of Bucharest to discuss the special position and role of the Mayor and the Bucharest Prefecture. Specific inquiries were made about the relationships (organizational and functional) between the national and municipal authorities with respect to crisis management, command and control, and the supporting communications infrastructure. Special attention was paid to the relationship of emergency management initiatives on the national level (GIES) and the Municipality of Bucharest.

The establishment of an effective national system for managing crises and its compatibility with international organizations is one of the major concerns for guaranteeing national security and stability. As the Government of Romania plans to join the European Union and NATO, it is imperative for the country to be able to handle man-made and natural disasters in a timely manner and to coordinate its response with neighboring countries. The GIES would like to develop an integrated emergency management system to coordinate emergency response activities on local, regional, and national levels.

The need for a national emergency management system is clear, indeed it is legislated and being implemented. It has financial support from national and international funding sources. And, it is an area where U.S. companies can make a significant contribution.

National Emergency Management System in Romania

All Hazard Risks in Romania

Hazard	Relative Risk Level
Civil Disturbance	Average
Communications Failure	Average
Computer Crime or Attack	Average
Crime	Average
Dam Failure	Average
Disease (Epidemic or otherwise)	Average
Drought	Low
Earthquake	High
Explosion	Average
Fire	Average
Flooding	High
Hardware/Software Failure	Average
Hazardous Material Incidents	Average
Hurricanes and Tropical Storms	Non existent
Landslides and Subsidence	High
Loss of Lifelines	Average
Radiological Accident	Low
Terrorist Acts	Low
Transportation Accidents	Average
Volcano	Low
Windstorm (Including Tornados)	High
Winter Storm	Low
Workplace Violence	Low

Table 1 All Hazard Risks in Romania

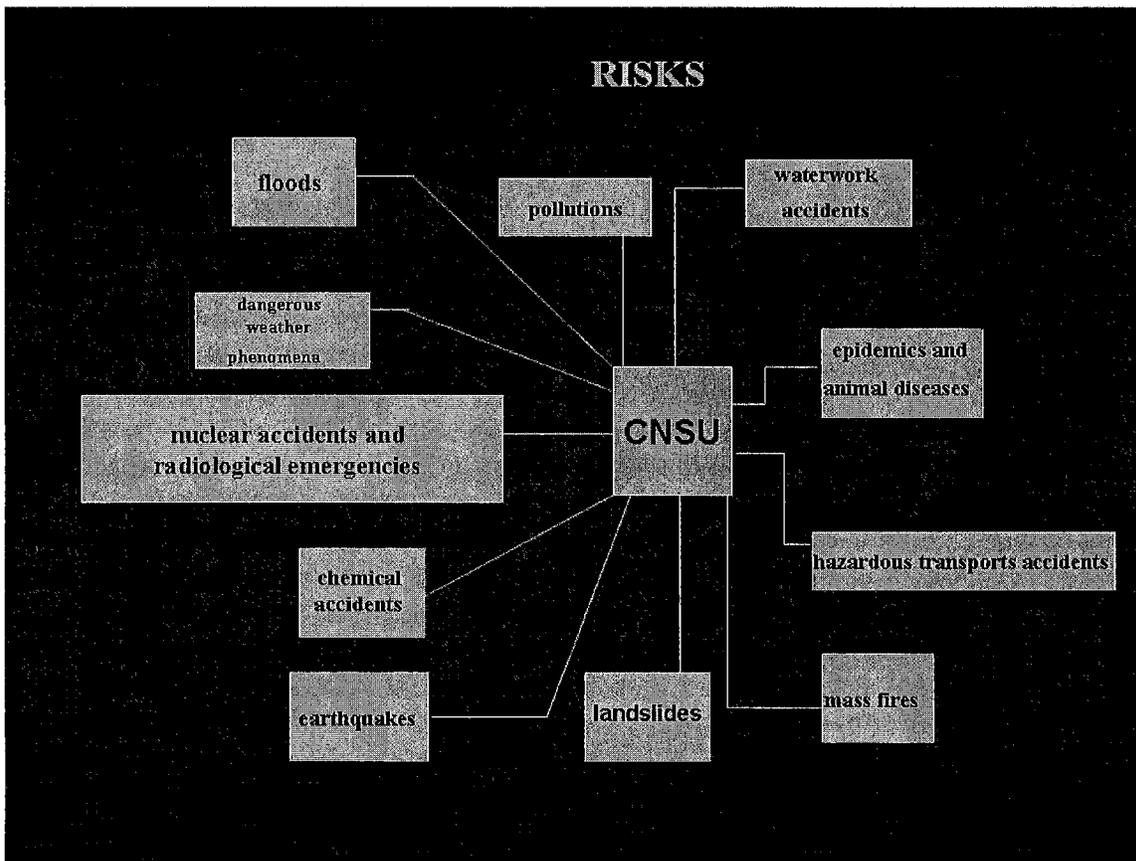


Figure 1 Risks

National Emergency Management System in Romania

Project Sponsor

The Ministry of Administration and Interior, General Inspectorate for Emergency Situations is a legal entity recommended as the project sponsor. The MAI approved the terms of reference for the proposed technical assistance, and has submitted a formal grant request.

Methodology

The definitional mission was conducted by closely examining documentation provided by USTDA, the GIES, STS and research into the technical infrastructure of emergency management entities in southeastern Europe. Extensive research was undertaken with respect to emergency management systems and technologies in the United States. Multiple visits were made to companies that supply many of the enabling technologies, and system integrators. Emergency management centers in New York and Washington, D.C. were visited.

During the definitional mission power point presentations were made on emergency management technology in the U.S. White Papers on topics of special interest, such as decision making programs, were distributed. These technical exchanges considerably facilitated the dialogue, and increased the value of the definitional mission to representatives and staff locally. These technical exchanges also helped to expose the local directors, management and support staff to U.S. technology that could usefully be integrated into the facilities that they were planning, and those under consideration for the World Bank consultancy projects. Another benefit of the technical exchanges was to increase the credibility of the entire effort, and underscore the interest of USTDA in making a real contribution.

Liaison with the World Bank's representative and the Project Management Unit in Bucharest, and close examination of the loan documents for this project, were priorities during the definitional mission. Multiple drafts of the terms of reference for technical assistance and sections of this report were exchanged with the General Inspectorate for Emergency Situations (GIES) and the Special Telecommunications Service (STS).

While in Bucharest, multiple meetings were held with the GIES, STS, MAI, and Ministry of Environment, USAID and the commercial Staff at the U.S. Embassy.

The advice and energetic support of Monica Eremia, commercial specialist at the U.S. Embassy was especially helpful to the definitional mission, and a major reason for its success.

Emergency Management - Institutional Framework

Political and Institutional Arrangements

National policy on disaster risk reduction is promulgated through various legislative documents, administrative authorities, public institutions and specialized institutions with responsibility for disaster prevention and response management.

The relevant laws regarding the national policy for disaster management are Government Ordinance (GO) no. 47/1994, regarding the defense against disasters, approved by Law no.124/15.12.1995, Law no.106/25.09.1996 – Civil Protection Law, modified by G.O. no. 21/15.04.2004 regarding the National System for Emergency Situations Management.

At the national level the system for emergency management was reorganized in 2005, and responsibilities for national and local institutions were redefined. According to Emergency Ordinance no.21/2004, the National System for Emergency Situations Management is composed of:

- Emergency Situations Committees;
- General Inspectorate for Emergency Situations;
- Professional Emergency Services;
- Operative centers for emergency situations; and
- Action commander.

The committees for emergency situations are organized as follows:

- National Committee for Emergency Situations;
- Ministerial committees and other central public institution committees for emergency situations;
- Bucharest Municipal committee for emergency situations;
- County committees for emergency situations; and
- Local committees for emergency situations.

National Emergency Management System in Romania

Ministries and Institutes National Committee for Emergency Situations

1. Ministry of Administration and Interior
2. Ministry of Defense
3. Ministry of Foreign Affairs
4. Ministry of Transports, Constructions and Tourism
5. Ministry of Economy and Commerce
6. Ministry of Agriculture, Forests and Rural Development
7. Ministry of Environment and Water
8. Ministry of Health
9. Ministry of Communications and IT
10. Ministry of Education and Research
11. Ministry of Public Finances
12. Romanian Intelligence Service
13. Special Telecommunications Service
14. Guard and Protection Service
15. Central State Office for Special Matters
16. General Inspectorate for Emergency Situations
17. National Administration of State Reserves
18. National Sanitary – Veterinarian and Food Safety Authority
19. Nuclear Agency
20. National Commission for Nuclear Activities Control

Table 2 Ministries and Institutes, National Committee for Emergency Situations

National Emergency Management System in Romania

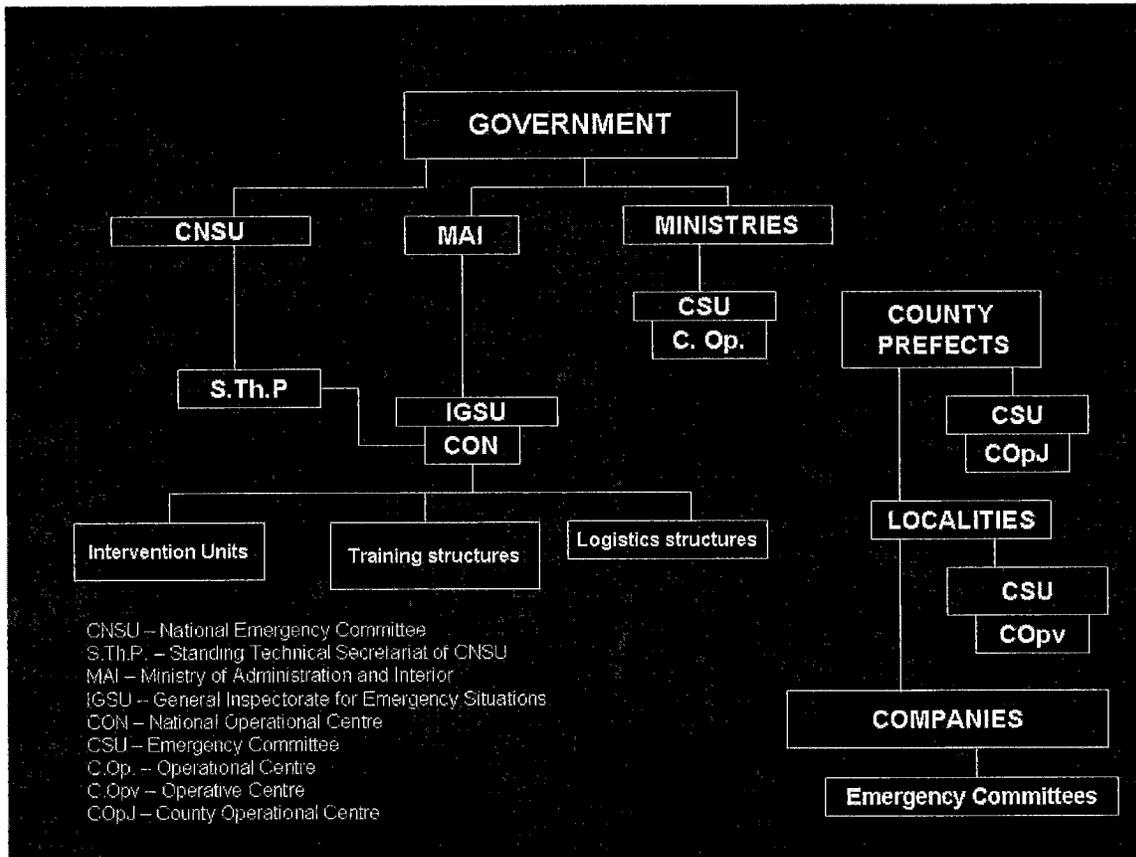


Chart 1 Organization Chart – Government of Romania, Emergency Management

The National Committee for Emergency Situations, organized under the Ministry of Administration and Interior, and the ministerial committees for emergency situations are responsible for application of disaster risk reduction policy at the national level. The national strategy for civil protection drafted, discussed and approved by the Supreme Council for Country Defense through the Decision no. 92 from 15.04.2004, outlines the strategic direction.

This strategy includes the fundamental objectives and options in the event of disasters regarding specific responses for the protection of people, materials goods, patrimonial values and the environment, as well as preparedness and relief actions, in order to reduce consequences.

International conventions and other ratified accords and agreements are components of the Romanian legislative system and are part of the national policy for disaster risk reduction.

The main risks of natural disaster in Romania are floods, earthquakes, dangerous meteorological phenomena and technological disasters.

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Disaster risk reduction for floods, meteorological phenomena and hydro technical construction accidents is part of the national strategy for water management, which is under the authority of the Ministry of Environment and Water Management. The main issues are:

- Hydrographical basin management;
- Construction of reservoir lakes, polders, dam works on rivers, watercourse; regularization correlated with conservation;
- Stream arrangements and versants forestation;
- Working on fighting against the soil erosion and draining up;
- Rising of civic responsibility regarding the improvement of water purity; and
- Modernization of the informational system for the public warning system.

The water management strategy takes into account the implementation of European policies, weather changes, public involvement in decision-making and the role of public authorities in river rehabilitation.

With respect to the strategy for risk reduction for earthquakes and landslides, the National Program for Seismological Risk Management (2004) recognizes that the main issues are:

- Completion of legislative and organizational framework in order to reduce the consequences of earthquakes and secure building stocks;
- Improvement of legal framework and technical tools (software, handbooks, guides, equipment) for technical expertise, development of projects and buildings consolidation works;
- Setting up the technical and organizational conditions needed for the collection, stocking and automatic processing of information regarding buildings with high seismic risk;
- Diversification of resources and financing condition to continue the design and execution activities for the consolidation of dwellings;
- Improvement of the earthquake insurance system for buildings; and
- Improvement of disaster management, particularly in case of earthquakes, taking into account the main aspects of prevention, protection and intervention, as well as public education regarding earthquakes.

In order to achieve broader support and resources, programs are established in cooperation with international institutions for:

- Design and consolidation of high buildings, technical assessments of seismological risk which represent a public danger;
- Safety Raising for hospitals and schools in case of earthquakes;
- Development and upgrading of seismological networks in Romania;
- Safety Raising for buildings which must be completely functionally during and after an earthquake;
- Enlargement of international cooperation in prevention of earthquakes;

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- Surveillance of natural disaster which occur on Romanian territory, using Geographical Information Systems – GIS;
- Earthquake prevention, protection and relief management;
- Emergency buildings to relocate the victims of a major earthquake;
- Elaboration and update of territory management plans at county, regional and national levels; and
- Completion of unfinished buildings, including those needed for temporary shelter.

These programs receive financial support from the national budget of the GOR, the government of Japan, and the World Bank.

Development, Environment and Civil Protection

A high priority of the Romanian government is the implementation of the *acquis communautaire*¹, especially the chapters regarding the environment and civil protection. To this end, the country is undergoing a major process to fit its national legislation within the European legal framework, with respect to responding to and mitigating disasters and reducing risks. A part of the European directives have already been implemented through normative acts regarding the air quality, waste management, water quality, environmental protection, etc.

After the “Earth Summit” from Rio 1992, Romania recognized the urgent necessity to adopt the global strategy for the next century, named “Agenda 21”, to apply the principles of sustainable development. The Romanian government constituted a working group to elaborate a “national strategy for sustainable development”, with the fundamental objective of fostering economic development with available capital resources (national and international) while guaranteeing the quality of life for future generations.

The main objectives of the National Strategy for Sustainable Development are:

- Reshape the socio-economical structure into a sustainable system;
- Establish the potential competitive sectors and directions as priority for sustainable development;
- Provide public health assurance;
- Arrest and reverse capital deterioration;

¹ **Acquis communautaire**¹ is the body of common rights and obligations which bind all the Member States together within the European Union. It is constantly evolving and comprises the content, principles and political objectives of the treaties; Community legislation and the case law of the Court of Justice; the declarations and resolutions adopted by the Union; measures relating to the common foreign and security policy; measures relating to justice and home affairs; international agreements concluded by the Community and those concluded by the Member States between themselves in the field of the Union's activities. When further countries join the European Union, full compliance with the Community *acquis* is one of the requisites for accession.

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- Develop a coherent legislative and institutional system, according to EU standards;
- Establish human resources at international scientific, technological and informational levels; and
- Monitor and evaluate economic, social and environmental protection performance.

An important component of the National Strategy for Sustainable Development is the Strategy for Environment Protection, which includes short-term objectives (2004), medium term objectives (2010) and long-term objectives (2020).

Emergency Management Coordination

Accordingly Emergency Ordinance 21/15.04.2004, the national authority responsible for emergency management is the National Committee for Emergency Situations through the General Inspectorate for Emergency Situations (GIES). The Minister of Administration and Interior (MAI), under the Prime Minister, coordinates and manages the National Committee for Emergency Situations. The National Committee is an interministerial body, comprising decision makers and specialized experts in emergency management. According to the “road map” for public administration restructure², the GIES was operational at the end of 2004, as a unified structure of the Civil Protection Command and the General Inspectorate of Military Fire-fighters from the MAI.

Thus, the GIES is a specialized body within the MAI, responsible for cooperation at the national level in civil protection field, protection against fires and emergency situation management. The GIES is responsible for the National Emergency Operational Center and facilities needed for emergency management.

The main attributes of the GIES are as follows:

- Assess, evaluate and monitor risks, and make predictions regarding those risks in order to identify potential emergency situations, and make decisions with respect mitigation and notification of the public;
- Ensure the unified co-ordination of preventative actions and management of emergency situations, which cover the whole territory of the country;
- Co-ordinate national development programs for defense against disasters;
- Use the media to inform the public regarding the imminence of emergency situations and actions that must be taken to limit and reduce their effects;
- Ensure the technical and specialized co-ordination of operational and operative centers; maintaining the flow of information;
- Co-operate with international bodies, in accordance with international conventions and agreements;

² Elaborated to fulfill the responsibilities under Chapter 24 - Justice and Internal Affairs, for the Romanian accession to the EU.

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- Co-ordinate, at the national level, resources needed in emergency situations; develop and manage plans for use of human, material and financial resources in these situations; and
- Provide technical specialized assistance to local and central authorities in emergency management.

Transition from Centralized to Decentralized Organization

The organization of emergency management functions in Romania in 2005 is the result of a complex set of economic and social factors that coincide with the transition from a centralized economy to a decentralized market economy, from a centralized governmental structure, with emergency management responsibilities largely residing with the military. There is an international dimension to this transition as well, most importantly the steps necessary for accession to the EU.

A legal framework for the transition has been created through the passage of environmental legislation. Laws that mandate monitoring the environment³ bring technological infrastructure to collect data that is important to the effective functioning of an emergency management system. This is most important with respect to air quality and water management.

Annual Budget for Disaster Risk Reduction

The National Committee has an obligation to estimate the human, material and financial resources necessary for emergency management, as elaborated by the GIES. Further, it is obliged to propose to the government inclusion of financial funds in annual state budget, necessary for emergency management.

Local and county councils, with their own budgets, must assure the necessary funds for intervention and prevention of disasters.

The budget of the Ministry of the Environment and Waters Management contains funds for new public works for defense against floods, as well as for the repair of those damaged by previous years' flash floods. These include sensors and monitoring devices useful for emergency management systems.

The ministries and local and central public authorities are obliged by law to provide funds for the prevention and mitigation of disaster effects.

Private Sector and Non-governmental Organizations, Educational Institutions and Media

³ Legislation worth of note is the Danube Delta Biosphere Reservation and laws with respect to atmospheric protection, waste management, and hydro technical construction.

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Many non-governmental organizations (NGOs), universities, academies, schools, mass-media, private sector, trade unions, syndicates, and in general civil society are involved in providing assistance for endangered populations, in case of natural or technological disaster.

All these activities are coordinated by the GIES, and as such require reliable communications links.

At the national level there is a complex system of NGOs that recognize the necessity of coordination and collaboration with central and local structures throughout the country in the area of disaster management. NGOs and the private sector participate in various organized activities related to risk disaster mitigation, both theoretical (seminars, scientific symposiums, exhibitions on technical means for intervention) organized by the specialized research institutes, and practical (civil protection exercises and applications, alarming and evacuations exercises, demonstrative intervention activities, etc.) organized by GIES.

The National Red Cross Society is the most active of all the NGOs. The frequency and amplitude of disasters over the last ten years tested, proved, and helped build the capacity of the Romanian Red Cross Program regarding prevention, operative intervention and mitigation of disaster effects on the population. The program objective is to assist 10.000 possible victims of a disaster. The program has as human resources, intervention detachments formed by 250 specialists, augmented by approximately. 4,000 volunteers trained in intervention and first aid in case of disaster. They participate in exercises and applications in collaboration with local committees for defense against disaster.

Mountaineering, Mountain Rescuers and Marine Rescuers Associations are organized especially in the mountain and seaside areas and participate in search-and-rescue actions in case of disasters.

Radio Amateur Associations are used at exercises, as well as in many real interventions in less developed economic areas.

Dog Associations from Bucharest, Craiova, Ploiesti, Sibiu and Cluj-Napoca have leaders and dogs that are very well trained for search-and-rescue operations, who participate at international contests and missions.

Medical Associations and Foundations have a diversified chemical and toxicological laboratory network. The personnel are very well trained, the medical equipment and the technical means for intervention are modern (SMURD – Emergency Medical and Extrication Service). They are points of contact with similar organizations internationally, such as Medicine sans Frontier, Pharmaceutics sans Frontier, and CARITAS International.

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Ecological Associations have a good funding and training, and are especially effective for prevention and mitigating accidental pollution. Some of these associations were used to finalize educational programs for preventive control of environmental elements (Bucharest) and in international co-operative actions in disaster management.

Charity Associations and Foundations are engaged in supporting victims of calamities in floods cases from the last years, as well as for fitting out camps for evacuated population suffering from disaster affected area.

The Romania Orthodox Church, Romanian Catholic Church and other church establishments contribute, under the co-ordination of Romanian Patriarchy or independently, to philanthropic and religious assistance actions for the population in a disaster case. Also, nongovernmental religious organizations with international support, participate in philanthropic actions.

The Romanian Civil Federation of Fire Fighters is a well developed body, especially in Transylvania and Banat.

Some Romanian associations and foundations have contacts or are supported by NGO's international networks of NGOs, such as the Technical Rescue Agency from Renania Nord Westfalia Land (Germany), the Malta Knights Association, the St. John Ambulance Association, and the Samaritans Workers Association.

Major difficulties are encountered in obtaining necessary financial and logistical support from these NGOs, as well as in setting up a data bases and establishing coordination at the national level with the large number of NGOs participating in disaster risk reduction.

Mass media organizations take part actively in training and emergency management activities during disasters, by informing the population.

Hazards Mapping and Evaluation

Romania maintains an extensive inventory of maps for the risks of floods, landslides and earthquakes for every locality in the natural risk areas. These maps contain information on dangerous phenomena, existing objectives and population, as well the preventive measures applied. These maps are used for urban planning in order to facilitate that specific measures for building and terrain use are applied. These maps are highly useful for emergency response.

The current law concerning the seismic issues⁴ mandates the maintenance of maps of the areas of seismic intensity, noting recurrence periods as well classifications of urban localities in accordance with the areas of seismic intensity on MSK scale.

⁴ Law no 575/2001, the Code for Antiseismic Projecting P 100-92 and Standard S 11100/1-93.

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Seismic areas cover 65% of the Romania's territory, including almost 75% of population and 75-80% of the economical capabilities. The most important seismic area is Vrancea, which represents the source of more than 95% of the seismic energy produced on an average in Romania. An initial seismic mapping of the national territory was realized in 1952. New maps of seismic zoning were developed in 1963, 1978 and 1991, and after the earthquakes in 1977, 1986 and 1990-1991.

Under the new code for anti-seismic projections⁵ a new map of seismic zoning for 100 years of recurrence period will be created. Also, maps and tables will be drawn that provide information about localities with a potential to be affected by floods caused by torrents, draining or overflowing water courses, and landslides.

Locations of the largest hydro technical dams are mapped.

Various research institutes and private companies have developed electronic maps of high risk areas. The Geographic Institute of the Romanian Academy has developed a map of geomorphologic risks (landslides, avalanches, erosion, etc) as well as numerous atlases referring to the natural and technological risks specific for national territory. Detailed electronic maps of risks have been developed for the administrative units, for all types of natural and technological hazards, in order to support the territory development and to be used in framing defense plans in case of disaster.

For the plans of general urbanism, which are realized at local public authorities' level, the development of risks maps is under way at scales between 1:5 000 and 1:500, depending on the locality.

For the plans for disaster response are developed and used risks maps at scales between 1:15 000 and 1:50 000 for local level and for the national level at scales 1:1 000 000, 1:500 000 and 1:200 000. In this respect also were realized GIS ArcView electronic maps at scale 1:1000000 for major hydro technical dams, chemical accidents, pollutions with hydrocarbons, nuclear accident and explosions. (The maps used for disaster defense plans are in GAUSS-Kruger format.)

Vulnerabilities and capabilities assessment

in 2001 a vulnerability assessment was made on the impact, intensity and probability of the main types of hazards, as well as the human, material and financial resources available to respond to those hazards management. Based on studies and researches, specialized institutes established vulnerability levels for the national territory in case of floods, taking into account the frequency of their occurrences, the existent hydrographical net, relief configuration, and social, economic, cultural and environmental factors. These studies were essential in the development of basic schemes for hydrographical basins.

⁵ P100/1-2004 (harmonized with EUROCODE 8)

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The National Institute for Building Research has developed assessments of seismic vulnerabilities, which were included in earthquake scenarios, realized both at national and capital (municipality of Bucharest) level, the last one concentrating the highest seismic risk in the country. These scenarios took account of risk elements, urban localities exposed to seismic risk, building characteristics (height, age, technology and materials used), infrastructure and public utilities, mortality and morbidity factors (based on the experience of the 1977 earthquake).

Regarding environmental risks, methodologies for estimating vulnerability are established by the Ministry of Environment and Waters Administration.

Institutions responsible for assessing risks, vulnerabilities and response capacities are listed in Table 3 below.

Institutions Responsible for Risk Assessment
National Institute of Research-Development for Environment Protection
National Institute of Research-Development for Industrial Ecology
National Institute for Building Research
National Institute of Research-Development for Earth Physics
Institute of Nuclear Physics and Engineering
Institute of Geography from Romanian Academy
National Administration of Meteorology
National Institute of Hydrology
Army Center of Study and Research
Centre of Studies Experiments and Specialization in Prevention and Fire Fighting.

Table 3 Institutions Responsible for Risk Assessment

Risk Monitoring and Mapping

Risk mapping is the responsibility of specialized commissions for each type of disaster.

There are many seismic networks in Romania:

- a) The National Institute of Research-Development for Earth Physics (INCFDP) network contains fourteen seismic stations with local registering and seventeen telemetric stations with real time radio transmission and also forty-five accelerometers in territory (nineteen located in Bucharest)

- b) The National Institute for Building Research (INCERC) seismic network has 117 devices placed in free field and on buildings to obtain seismic recordings on structures and buildings. Of these thirty-two devices are placed in Bucharest and

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eighty-five in the regions. The seismic network administrated by the National Centre for Seismic Risk Reduction has six recording devices placed in Bucharest and eight regionally.

c) The hydro technical buildings seismic network contains eighteen devices that record induced seismic activity in the area of major dams and their reaction during an earthquake.

For dangerous meteorological phenomena and floods surveillance there is a hydrological observation, measurement and collecting system, on each watercourse and his main affluent, system that is studying the arising and propagation of the floods wave. Some of those hydrological stations have self-acting functioning and the others will be automated until 2007.

There is an automatic national meteorological system for observation and measurement; the Meteorological Forecast National Center is centralizing data provided. This system was upgraded in a cooperative project with Lockheed Martin, resulting in the National Integrated Meteorological System. This system contains last hour technology radars, and surface automatic observation stations for air/water and rain falls measurements. Among the benefits of this new system are continuum information and data flow regarding hydrological and meteorological status; the compatibility and informational integration with other international meteorological networks; anticipation of the water quantities (rain and snow) that will fall in a certain area on an certain period of time; anticipation of the floods produced by the rain falls, storms, tornados and torrents; anticipation of the atmospheric pollution dispersion; the anticipation of the rain falls and ice storms (the areas where the aerial electric and phone wire network will be affected).

National floods defense constructions system is overseen by the water services from the "Romanian Waters" National Administration, which has developed coordinated procedures for response in hydrographical areas.

The Ministry of Environment and Water Management organized the environment Radioactivity Surveillance Network in cooperation with monitoring subsystems from the Ministry of Administration and Interior, Ministry of National Defense and the National Commission for Nuclear Activity Control.

The National Institute for Research and Development on Environment Protection is participating in environment quality surveillance in cooperation with specialized laboratories that belongs to the Territorial Agencies of Environment Protection, Ministry of Health, Ministry of Agriculture, Forests and Rural Development, Ministry of Economy and Commerce and Ministry of Transportation, Constructions and Tourism.

Post disaster impact assessment system of socio-economic and environmental damages
After each disaster a systematic analysis of socio-economic and environment losses and impact is conducted, along with reports that contain the disaster effects mitigation

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measures that were made and also the measures that will be made to prevent that kind of situations. Those reports are presented to the Government and mass media and can be consulted by every interested person or institution.

The physical preliminary evaluation and the value disaster effects evaluation are the permanent responsibility of the Romanian institution for defense against disasters, aiming to realize some urgent operative measures and also medium and long term rehabilitation and reconstruction measures in order to normalize the social-economic activities and to promote the long lasting objectives.

At local level there are consequences evaluation commissions that use a specific methodology for the estimation of the losses.

In case of disasters with major consequences, governmental commissions are responsible for assessment of the impact, sometimes in cooperation with international experts.

Risk Reduction

Risk management is part of the Romanian government's plan for sustainable development.

For reducing floods risks, this plan contains the modernization of the hydro meteorological information system, rehabilitation of dams, adjustment of water flows, drainage systems, and surveillance for erosion and landslides. Investments for projects in these areas have been funded by the Development Bank of the European Council and the European Investment Bank. These projects include technologies that are important components of future emergency management systems.

In 2003, the Meteorological Integrating National System (SIMIN) was finished. SIMIN allows more precise knowledge and prognoses of dangerous meteorological phenomena. Likewise, in 2003 the Destructive Water Project (DESWAT) was started, with implementation planned from 2003 to 2007.

With the support of the U.S. Agency for International Development and the U.S. Trade and Development Agency, a feasibility study of the Water Management Decision Support Software for Canal Systems (WATMAN) was made. These studies and projects will increase the capability of the Romanian government to respond to floods and accidental pollution.

Also, there are on going projects for setting up notifications systems for warning populations downstream of the largest dams.

With respect to seismic risks, measures have been undertaken for warning and mitigation in the event of earthquakes. Among them are:

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- Seismic monitoring systems in the regions, as well as buildings and structures in cities and towns;
- Urban infrastructure protection;
- Continuation of the consolidation of the multi-flat buildings, technical assessed, included in the first class of seismological risk and which are public danger;
- Achieving the *Hazard Risk Mitigation and Emergency Preparedness Project*, Component B – Earthquake risk reduction for the public buildings with high importance, which is funded at USD 71.2 million; USD 55.0 from the World Bank; and
- Seismic education of the population from the education units, medical units and public places with agglomerations of people, living buildings.

The National Management Program for Seismic Risk, initiated by the GOR in 2004, brought together disaster specialists from the ministries, central public authorities, research institutions and universities. This program contains forty measures to be taken in the 2004-2006 period.

The World Bank co-financed the *Hazard Risk Mitigation and Emergency Preparedness Project*, which began in 2004, and will continue until 2009. This project includes four major components: 1) increasing disaster capacity and management, 2) reducing seismic risk, 3) reducing the floods and landslides risk, and 4) reducing mining accidents risks in the Tisa Basin. Through this project the World Bank is offering assistance to the GOR for reducing the economical, financial, environment and social vulnerability facing the natural disasters and accidental pollution.

Further, disaster risk reduction is included in implementation of the UN Millennium Objectives, the Strategic Document for Poverty Reduction, the National Environmental Action Plans and implementation plans with respect to the World Summit on Durable Development.

There is close regional cooperation between countries along Danube with respect to water management, and to strengthen the mechanisms for national and international measures on prevention, control and reduction of trans-border impact of dangerous activities in the Danube basin. The organization and functioning of the alarm system in case of accidental pollution is important for protection against the effects of accidents.⁶

Risk disaster reduction is integrated in the implementation of plans carried out within the framework of the Disaster Prevention Preparedness Initiative, Stability Pact for South-East Europe III.

⁶ (SAPA-ROM) and Order no. 278/1997

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Implementation of disaster prevention measures and plans are envisioned through cooperation between the Black Sea Basin countries.⁷

Early Warning Systems

There is a permanently functioning hydro-meteorological system for early warning in case of floods and dangerous meteorological phenomena. Hydro-meteorological warnings were made in March-April 2004 when major floods occurred because of heavy rainfalls and the sudden brake of the existing snow layer. The institutions involved in this system are the National Hydrological Institute and the Meteorological National Administration, the "Romanian Waters" National Administration's water management county units, local and county commissions for defense against disasters, and Civil Protection County Inspectorates.

Informational flows are directed to continuously to interested entities. For example the National Hydrological Institute transmits information, warnings, and alerts to the GIES that in turn transmits that information to Civil Protection County Inspectorates, which have the obligation to inform the localities at the police station level.

For earthquakes there is a real time surveillance medium term warning system. This system is made in cooperation with partners from Russia and Italy and functions in real time.

The early warning system in case of accidental pollution with dangerous substances or hydrocarbons on Danube River is established to notify countries along the Danube.

The alert status represents the fast application of the action plans and prevention, population warning, limitation and mitigation of the emergency situation consequences measures and is been declared by the National Comity for Emergency Situations with the Prime Minister approval.

Following its activation, the National Emergency Operational Center will provide coordinated decision making and the efficient flow of information, and timely and credible notifications to the public.

Generally speaking, the population is aware of the specific actions to take in the event of early warning signals and notifications. This was proven both during public warning exercises, which are held periodically, and also during real disaster situations. However, there are some gaps, especially in the isolated areas in the rural regions, regarding the capacity to transmit warning signals, as well as coordinating public response.

⁷ Agreement between the Governments of the Black-Sea Organization for Economic Cooperation participating countries regarding "cooperation in the field of emergency assistance and response to natural and man-made disasters."

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Database Management

At national level there is an integrated system for collecting information and transmitting the decisions made by specialized authorities regarding specific risks for which they are responsible (earthquake, landslides, floods, dangerous weather events and other technological disasters).

In order to prevent floods and accidents to hydro technical structures there is a national system for information management that collects data through the permanent monitoring of rivers, hydro technical structures for defense against floods, as well as reservoir lakes. This information is distributed to all national, county and local entities involved in operational actions for defense against floods. In collaboration with information research and risks management institutes the (former) Civil Protection Command was involved in the development of specialized software regarding some databases on disasters risks and their aftermaths (called MANDEZ). The Ministry of Administration and Interior, in cooperation with the ministries assigned specific risks, is responsible for the collection, recording, transmission, analysis and automatic processing of information regarding disasters, and preparing analysis and reports for all levels of the Romanian Government, Presidency and Parliament.

Disasters with cross border effects are reported to international bodies, under provisions of international conventions and agreements, using special networks.⁸

The National Integrated Meteorological System automatically collects data necessary to prevent disasters caused by dangerous weather events, and sends it to the

Ministry of Environment and Waters Management, Ministry of Administration and Interior, Ministry of National Defense, air transportation, marine, road and railway authorities, facilities networks, communications networks, radio and TV, international bodies (EU, NATO and World Weather Organization), the neighboring countries.

The Ministry of Transportation, Constructions and Tourism manages its own database on seismic risk containing information regarding over 2,600 buildings seismically assessed and 123 buildings in Bucharest included in first class of seismic risk.

The Civil Protection Command, Institute for Research and Development in Informatics and the Institute for Geography of the Romanian Academy are jointly working on a public information web site portal for disasters, using a Oracle database which will contain comprehensive information on risks and disasters, modules of an on-line course for training the population in disaster response and public maps on all-hazards risks.

Research Institutions

⁸ EURDEP; ECURIE

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There are many collaboration initiatives between the academic community and national and local research institutions involved in disasters prevention, manifested through different scientific manifestations, seminars, conferences, congresses and other training forums as well as joint research programs.

In order to establish and fulfill structural and non-structural measures for defense against floods there is a permanent collaboration between the Central Commission for Defense against Floods, Dangerous Weather Events and Dams Accidents and specialized institutes developing studies and research in this field. Mainly the National Institute for Hydrology and Geology,

The National Administration of Meteorology and AQUAPROIECT conduct hydrological studies, models for water waves propagation, risk maps, flowcharts for managing hydrographical dams against floods.

In the field of mitigation of seismic risk Project CRC 461 is an important international collaboration between the National Institute for Research & Development for Earth Physics, the National Institute for Building Research and Karlsruhe University of Germany.

For the atmospheric control pollution on mountainsides zones, the Romanian Academy, Japanese National Committee of the International Geographical Union and Hosei, Nihon and Mie Universities from Japan maintain a technical exchange of information received from an environmental surveillance system.

The Ministry of Education and Research has an on-going research and development core program called "TESIS – Advanced Technologies and Systems for the Knowledge-based Information Society" and a project for a system for public awareness and education concerning natural and technological disasters.

The institutes for science research of the Romanian Academy (Institute for Geography, Institute for Geology, Institute of Geodynamics) participate, as well as specialized institutions, evaluate Romanian territory for special risks and identify the most efficient response procedures.

Public Educational Programs

The public is informed through the media about potential risks areas, imminent occurrence of a disaster, its effects and defensive measures.

The County Commission and the Commission for Defense against Disasters of Bucharest Municipality coordinates the training of the population in localities, institutions, economic entities and sectors regarding prevention, protection and intervention in case of

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disasters, using the experience won from lessons learnt, meetings, conferences, drills and demonstrations.

With respect to the mitigation of buildings from seismic risk, the GOR maintains a program for the Program for retrofitting schools, developed during the years 1997-2002, estimated at USD130 million, co-financed by World Bank to retrofit 838 schools.

This project contributed to the increase of the quality of the Romanian training process, leading to the development of qualified personnel, firstly for the training process, which is an essential condition for a sustained economic increasing.

Generally speaking, the media is a good partner with the government in Romania during emergencies.

Financial Resources for Disaster Impact Reduction

After every major event, to reduce the disaster impact was used the Intervention Fund from the state budget. To rebuild damaged infrastructure funds are used from community budgets.

In the same way, external funds are used, coordinated by the Ministry of Finance and through other different ministries responsible for every type of risk. These funds are received from PHARE programs, the World Bank, and the European Bank for Reconstruction and Development or European Bank of Investment.

According the National Program for the Seismic Risk Management for the assurance of financial resources is foreseen to be creating an integrated insurance-reinsurance system for seismic damages to buildings, taking into account the private capital and the development of buildings market.

To support the disaster consequences reduction programs, financial resources are available from the European Union, for example:

- SAPARD Program – a financial instrument offered by the EU for helping nominee states in agriculture and rural development
- ISPA Program – supports the development and implementation of the EU's environmental legislation and policies, with emphasis on durable development within the framework of the EU. The European Commission finances up to 100% eligible costs
- PHARE RICOP Program – the EU offered 100 millions EURO for supporting the GOR in managing economic development programs

Technical Programs and Measures for Risk Reduction

In order to reduce the flood risk in Romania there is a defense system comprising

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9,560 km dams on internal rivers, 8,680 km water courses arrangements and 1,924 reservoirs (360 reservoirs are very important having a total volume 13.06 billion cubic meters), 3 billion cubic meters for flash floods attenuation and protect 1,298 localities with more than 5,000 habitants; 2,050 localities are still exposed to floods.

Romania has a very well organized warning hydro-meteorological informational-decisional system from the local to the national level. This system is being upgraded with state-of-the-art technology.

The Ministry of Transport, Building and Tourism promotes action programs to reduce the seismic risk of existing buildings. Between 1992 and 2003 more than 3,000 buildings in 26 counties and Bucharest were technically evaluated.

From the seismic vulnerability point of view, Bucharest is the most exposed European capital. The biggest problem is the old building stock. High rise buildings, constructed before 1940, represent the greatest public danger and are classified in the first class of seismic risk.

Programs to redesign and consolidate these buildings are promoted by the Ministry of Transport, Construction and Tourism

The World Bank supports the Romanian Government in the implementation of the Prevention and Natural Disaster Risk Management Program which is intended to reduce the social, financial, economical and environmental impact of natural disasters. The Ministry of Transport, Building and Tourism prepares and implements Component B of the program – seismic risk reduction of vital public buildings – and the Ministry of Administration and Interior prepares and implements the Component A – organizational capacity strengthening.

Historical Disasters

The floods during April 10-18, 2004 of the Cris river hydrographical basin – Bihor county – occurred following large rainfalls over 100 l/mp on the river Crişul Negru, with transboundary effects by overrunning of floods rates. The close working relationship between the water management territorial authorities and the County Inspectorates for Civil Protection led to an early and timely warning of localities. Officials at town halls were able to warn the population in the areas at risk and, therefore, enable them to prepare for potential evacuation. Permanent surveillance of defense dams was immediately established, as well of nearby dwellings, thus contributing to the protection of the population.

The Bihor Branch of the National Society “Lands Improvements” took measures for a good usage of the evacuation network and of inland waters. Measures were taken for avoiding floods in the Republic of Hungary according to the provisions of joint regulation to close gates channels at the border.

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Through cooperation between the County Commission for Defense against Disasters, local commissions, Civil Protection, units of waters management and land improvement as well collaboration with similar bodies from the Republic of Hungary, flooding was avoided for 500 householders and over 10.000 ha agricultural land, and roads and railways.

On 12 August 2002, following to an atmospheric instability, a tornado affected Facaeni locality, Ialomita county and produced 2 death people, 15 injures, 420 houses affected (15 totally destroyed) and 4 ha forest devastated.

The tornado was seen initially 3 km east from Fetesti town on route DN 3 A. A tornado was seen in south of Facaeni which affected the power supply network and about 30 electrical sticks. It also destroyed 15 houses, severely damaged another 20 houses and slightly damaged another 400 houses and 600 household annexes. Two persons died and other 14 were injured. The material damages exceeded 120 ha of forest with approximately 25,000 cm. wood and electrical power supply network.

Immediately after the event the Local Commission for Defense Against Disaster decided to send intervention detachments, county civil protection inspectorate, county police inspectorate, fire-fighters units, and other intervention teams and until 21.30 hour was constituted County Commission for Defense Against Disasters in town hall of Facaeni.

The main measures for limiting the effects were:

- Monitoring the phenomena;
- Warning authorities in areas most exposed to risks;
- Alarming and evacuation of the population from such areas;
- Administering first aid to affected people and providing transportation to hospitals;
- Distributing food, drinkable water, clothes and drugs for the affected population
- Relieving congestion on routes and maintain traffic flows;
- Repairing electrical power supplies and phone networks; and
- Securing the area and limiting access only to the intervention team.

Other teams from road section units, National Society “Lands Improvements” – Ialomita subsidiary, military units and economic development teams helped the morning of the next day for clearance of routes, and households.

The affected area was split in seven sectors each with own evaluation commission. After three days the process was end and 43 billion ROL (almost 1.5 million. EURO) damages were found.

In 2002 a Romanian central commission for defense against floods, meteorological dangerous phenomena and dam accidents analyzed the situation and elaborated a plan for

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prevention and rehabilitation measures. This plan established measures to release funds from the state budget for rehabilitation and reconstruction. Through this plan 2.5 billion lei was allocated for reconstruction and by the Ialomita Prefecture, 126 children from affected families were sent in Amara camp and other 14 in Balaton (Hungary) camp.

Many state institutions and NGOs started a campaign for fund raising to help displaced people.

The above examples illustrate the complexity of actions and relationships that require coordination in response to a disaster. All these are accomplished more efficiently and effectively with a well developed emergency response plan, with the institutional organization, and technological tools to manage the response. Of these communications is the most important.

International Cooperation

Natural and technological hazards have no boundaries; they generate complex environmental impact and consequences for society at large. Disasters have major long term effects, involving huge costs which overwhelm the resources of the local area, surrounding region, and even the country. In order to prevent and mitigate the cross border effects, it is necessary to foster a concept of operations that is built on local and international cooperation.

The exponential growth of hazardous materials, stored, used or transported by road, by train, by ship or by plane, lead to an increased number of serious accidents with major, life-threatening consequences which demand close cooperation between cross border entities responsible for disaster management system, including the scientific, local and international communities.

Terrorist attacks from all over the world, with biological, chemical, asymmetrical and conventional means, necessitate that efforts must be made to reduce the consequences of their actions by assuring a concept of operations at the international level, by realistic and meticulous planning, by assuring that first responders are trained and equipped to be capable of prompt reaction into emergency situations. These cooperative efforts are supported by international financial resources, through NATO and the EU.

Managerial measures and actions that have been taken to date have not been limited to resolving emergency situations, but to initiate and develop reconstruction, long term rebuilding and rehabilitating according to principles of sustainable development.

The development of a database of natural and technological disasters (date and location, the effects over population and environment, the resource capacities, response mechanisms of international systems, the resources capabilities, viability of defense program systems) can be used with specialized software to manage interventions and response actions. Among these applications are:

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- Using models for early estimation of the disaster effects – earthquake, mudflow, flood over the exposed elements;
- Using decision support software for emergency situation management;
- Issuing identification markers for vulnerable buildings and infrastructure;
- Standard Internet availability of geographic information about natural; and technological hazard area, presented by national links with information accessible to the public.

To access the available assets at NATO, specifically the Euro - Atlantic Disaster Response Coordination Centre (EADRCC), and coordinate measures to prevent and mitigate the specified national disaster, it is necessary to have well developed communications systems – for both data exchange and voice – and protocols.

The Group of Experts for Early Warning and Detection System (GOEWDS) and General Environment Directorate and Monitoring and Informing Centre (European Union) coordinate the responses where disasters have cross border effects (e.g. forest fires in France, Portugal and Croatia; floods in Central Europe; earthquakes in Turkey and Morocco from the last five years). Likewise, communications links need to be in place.

Local initiatives and incentives for prevention and mitigate of disasters⁹ contribute significantly to the harmonization of disaster preparedness and emergency management in Romania. These attract donations from various fields as well as being a source of valuable financial support for projects and programs.

⁹ Stability Pact for South-Eastern Europe, Working Table III, Disaster Prevention and Preparedness Initiative; Central European Initiative; EUR-OPA Major Risks Agreement

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Observations on Water Monitoring – SEMIN, DESWAT, WATMAN – and the National Emergency Operational Center

There seems to be a “control center” focus at the GIES with respect to the emergency management operational center, and not enough attention to the data inputs with respect to environmental warnings. More attention needs to be placed on the collection of data, its analysis, display, dissemination, and protocols for communications. Also, dissemination of environmental information to the judets is an important element in overall emergency planning. On the environmental side projects such as DESWAT and WATMAN may not interconnect with what the MAI is currently considering, and may not be able to feed all the data and analysis that such a system requires. This problem becomes evident rather dramatically at the Alert Center at the Ministry of Environment. It impression is given that the staff is lacking certain data that would be expected to be received from such major projects as SEMIN and DESWAT, and later WATMAN. There is a question as to the availability of the necessary tools to interpret the data that is already provided, but possibly not fully developed. There are also issues related to the quality of data and sufficiency of data to solve predictive models. There was not enough time during the definitional mission to investigate these issues, but it is essential that they are examined closely, and that the GIES received and is knowledgeable in interpreting whatever environmental information it receives. For this reason it is recommended that some time be spent during the proposed technical assistance to identify areas where SEMIN, DESWAT and later WATMAN can be directed to be most useful to emergency management operations, centrally and in the judets.

Projects like SIMIN, INTEROPERATE (sometimes viewed as SIMIN II), DESWAT and WATMAN address dangerous hydro-meteorological situations. These projects represent substantial investments in automatic monitoring and state-of-the-art meteorological and hydrologic informational systems. WATMAN introduces the additional component of intervention equipment for RRC, in the first stage; and alarms in the second – 1,600 devices as well as the DSS system for water crisis management. All these systems are designed now for the National Administration Apele Romane, but they hold significant potential for use by crisis managers at the National Emergency Operational Center.

The information collected by these systems should most likely be delivered to the MEWM, together with basic analysis to expedite processing with respect to decision making. Then, the information should be integrated at the national level together with other information generated by the other ministries according to their specialized areas of responsibility.

Areas for attention during the proposed technical assistance, and in future studies and projects, are:

- Design of applications for assembling data collection and consolidating databases from the various ministries, national administrations and institutes, using the modern procedures of data replication and storage, and translation into GIS;

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- Improvements in environmental monitoring; automation of stations and data collection; organization of data collection as part of the water management system (an adequate data base should be designed to “circulate” data from this level, using data replication);
- Real time systems for delivering data to the Inspectorates for Emergency Situations to allow for timely intervention. Installation of communication equipment to support the entire alarming system;
- Equipment and spare parts required to support intervention; and
- A study of HAZMAT, and other environmental hazards to provide systems to support disasters from sources other than flooding.

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Special Telecommunications Service

The Special Telecommunications Service (STS) is a central specialized entity which organizes and coordinates the activities in the special telecommunications field for the public authorities in Romania and for other users as specified by law. It is organized as a military structure and is part of the national defense system.

Special telecommunications includes the transmission, emission or reception of signs, signals, writings, images, sounds or information of any kind, transmitted by wire, radio, optic systems or by other electromagnetic systems.

The STS provides special telecommunications services for the following Romanian public authorities:

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



Figure 2 Governmental Network Managed by the STS

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

A high level of security and confidentiality characterize the telecommunications services of 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 the communications security policy and ensure application of the methods and measures required for the protection of the information processed, stored or transmitted through the special telecommunications networks according to the national standards for information protection;
- Manage and ensure protection of government-assigned frequency bands used to achieve its legal attributions or those of the institutions competent in the field of national security and public order;
- Monitor across the country, for protection purposes, government-assigned frequency bands under its management and keeps a record of their use;
- Develop co-operative relations with other institutions within the national system of defense and provides special communications for the High National Headquarters and the National Command and Control Authority;
- Co-operate with the institutions within the national system of defense, as well as with other legal entities carrying out activities in this field, in order to harmonize and ensure compatibility of their communication systems;
- Install, operate and maintain the National Unique System for Emergency Calls – 112, according to the quality requirements;
- Apply procedures related to Public Key Infrastructure technology within the national system of defense;
- Organize the electronic signature authentication system;
- Take part in applying specific measures for the integrated management of the national border (together with the Ministry of Administration and Interior); and
- Provide telecommunications services for private or public persons, according to law.

Emergency Management Telecommunications Network

Examination of the requirements for a telecommunications network for the National System of Emergency Management and discussions with technical experts at Cisco in Romania lead to the view that there are major challenges for meeting the bandwidth requirements (data, voice, video and other applications) with the existing infrastructure.

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The STS is very well positioned for communications between Bucharest (center) and the 41 counties. However the STS ATM core should make room for the IP core with interfaces more suitable for the high bandwidth requirements. One solution would be DWDM that would allow Gigabit Ethernet, 10GE and Fiber channel for business continuity applications to be accommodated over the same fiber.

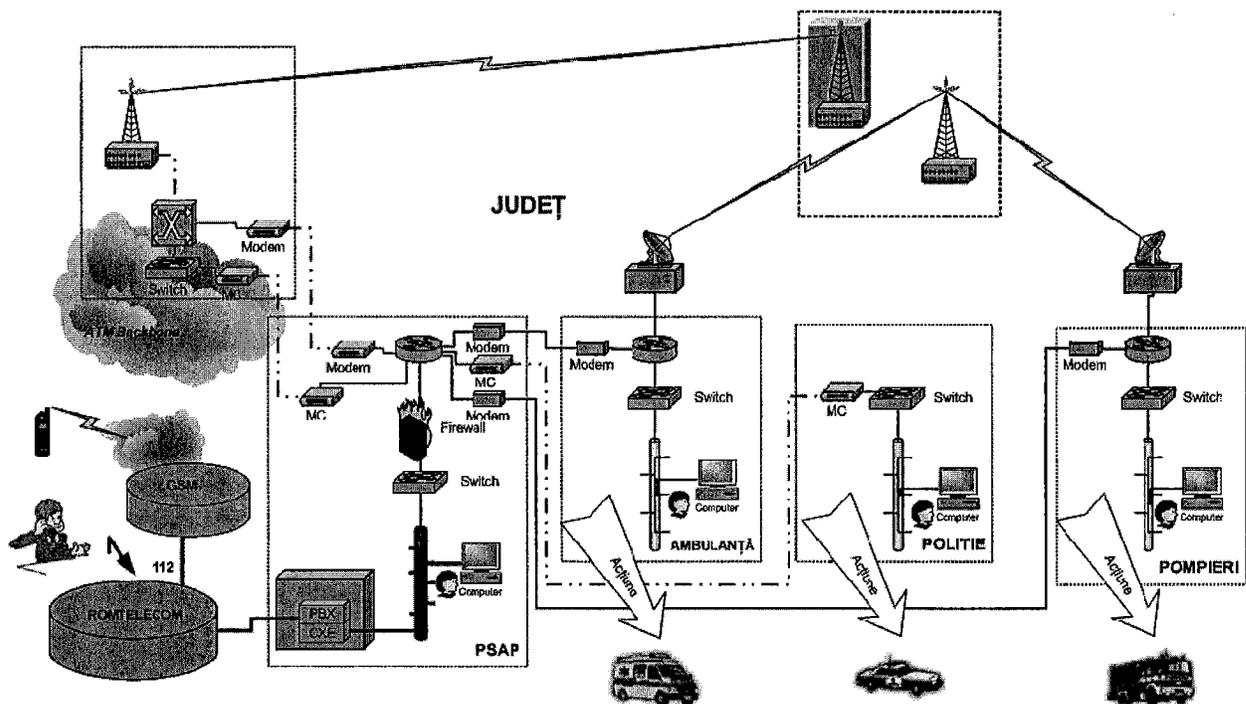


Figure 3 Network Structure (STS)

With the current Border Police projects under way – EADS and Phare, MAI will be very well positioned for all communications in the areas around Romanian Border.¹⁰

Other than high bandwidth requirements, major issues related to telecommunications support for the National Emergency Management System are:

- High-capacity interconnection of different networks, e.g. MAI, STS and the primary data - sensors provided by National Institute of Meteorology and Hydrology, Romanian Seismic Network Acquisition Center, National Agency for Environment Protection;

¹⁰ See details of EADS project at http://www.mai.gov.ro/english_files/home_page/OBIECTIVE%20-engl.pdf and Phare programs at <http://www.politiadefrontiera.ro/>

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- Call prioritization in emergency situations; and
- Interconnectivity for first responders from different organizations.¹¹

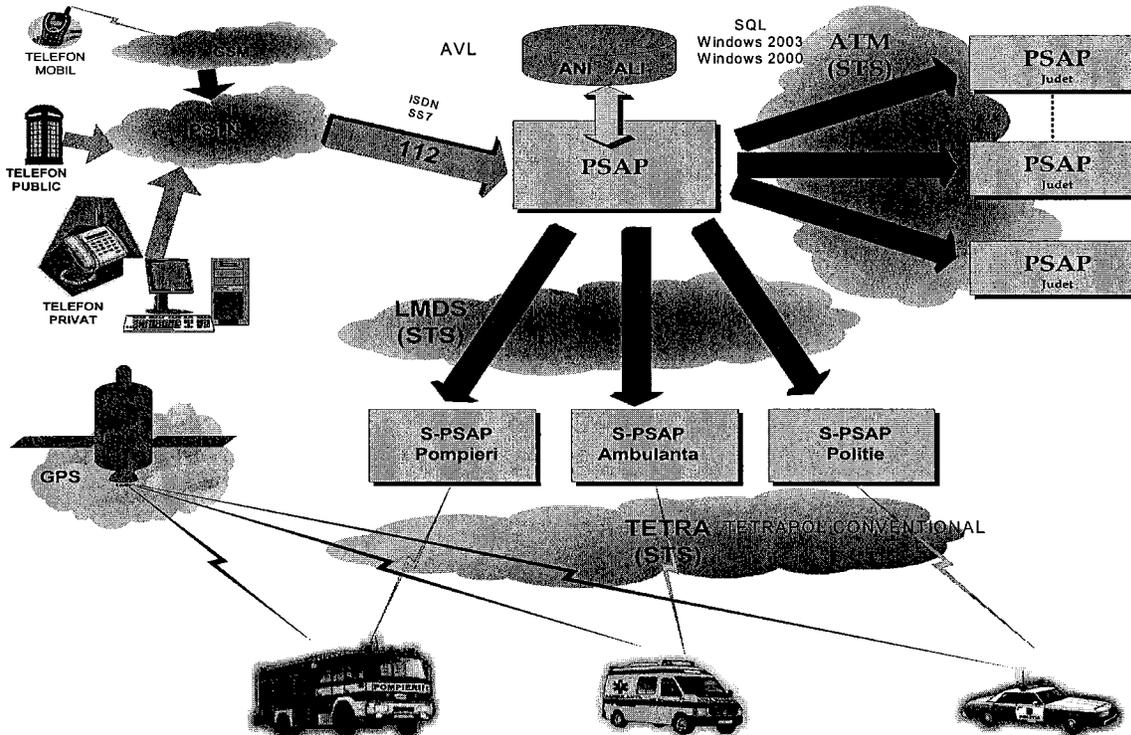


Figure 4 Communications Technologies (STS)

STS Network Plans

The MAI has a project in development to establish metropolitan area networks (MAN) within county capitals which connects all its subordinated structures, the GIES (and all its county inspectorates) being one of them. In Bucharest and in other twelve county capitals the MANs are fully operational. These MANs are interconnected using the backbone offered by the STS. STS maintains and operates the operative cooperation communications networks countrywide, including the networks connecting the state institutions involved in providing emergency response.

¹¹ Cisco IPICS would be an excellent solution.

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E112

STS has implemented a unique national system for emergency calls – E112 which interconnects 112 county dispatches all over the country. The E112 system is a fully operational system which consists of emergency calls answering centers (Public Safety Answering Points) and their associated equipment – an operative telecommunications system, designed to notify, receive, process and transfer the emergency calls to the requested services (Police, Ambulance, GIES), in a centralized and unitary way.

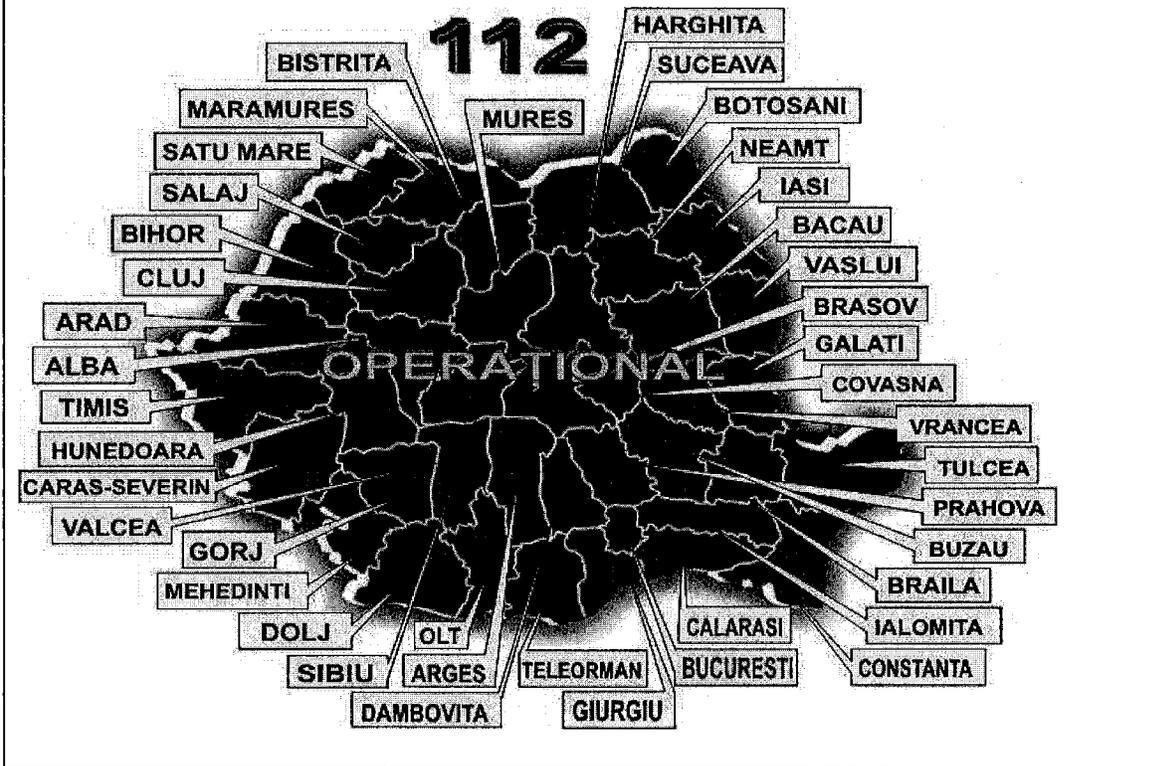


Figure 5 E112

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STS Information Systems Network (STS-ISN)

STS ATM Network (STS-ATM)

Non-Classified Internet Protocol Router Network (NIPRNET)

The STS should consider creating an STS Information Systems Network (STS-ISN) that could be used for defense and emergency management telecommunications. In addition to consolidating all service agency transmission multiplexer infrastructures, this network would consolidate all service and agency Internet Protocol (IP) router networks. The transmission infrastructures would be consolidated by converting all service and agency multiplexer networks to the same hardware base, the NET IDNX. While the specifics of consolidating the router networks vary between STS-ISN and the various router network managers, the STS is centrally operating at least two IP router networks, one for the sensitive but unclassified environment and one for the secret environment.

The Non-Classified but Sensitive Internet Protocol Router Network (NIPRNET), Secure Internet Protocol Router Network (SIPRNET), and STS ATM network (STS-ATM) are a Ministry of Defense (MoD) virtual private network (VPN) which provide unclassified and classified computer networking service for official defense business, using ATM. The STS can use a three layer model to define the different areas of network management responsibility. The top management center is referred to as the Control Center (CC). The CC provides management oversight for the deployed networks of the MoD infrastructure for which the STS has network management responsibility. The second layer is comprised of the Regional Control Centers (RCCs). The RCCs are responsible for the day to day operations of the networks under their immediate control. They are geographically oriented with several centers dispersed across Romania, and a center located at NATO. The RCCs are responsible for the STS assets within their areas and operate as peers to each other. The RCCs and the GCC are responsible for STS assets only. The third layer of the hierarchy model is the Local Control Centers (LCCs) which belong to the individual subscriber communities. These management centers control or monitor the assets owned by the individual service/agencies connected to the WANs.

A Emergency Management Information System Network could provides a wide range of information services to GIES and MoD users, including voice telephony, formal messaging, data networking and video. Each of these services today is largely provided by independent and duplicative transmission and switching infrastructures. Enabling technologies such as ATM can overcome the limitations of the existing "stovepipe" systems while improving the overall quality of service (QoS).

The STS ATM network (STS-ATM) is a MoD VPN which provides unclassified and classified computer networking service for official MoD business. STS-ATM connections are controlled by the STS and must be requested from the STS via normal long-haul communications request procedures. Asynchronous Transfer Mode (ATM) is the only protocol specifically designed for multimedia transmissions. It is designed to accommodate data, video, and voice traffic simultaneously and provide the various levels

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of service required for each type of data. Furthermore, ATM supports data bursting for sudden, unexpected bandwidth requirements.

ATM is standardized for use in the local area network (LAN), metropolitan area network (MAN), and wide area network (WAN). It operates on most transmission media – copper, fiber, satellite, radio frequency, and laser. The STS Information Systems Network (STS-ISN) wide area network employs ATM technology for its backbone. The MoD should consider that the STS would provide the network, including the entire WAN up to the end device. This would serve to centralize network management and support, a cost saving advantage. STS's costs for ATM network bandwidth on the leased portions of its lines are probably less than bandwidth costs for fixed point-to-point lines. For example, in the United States the cost of a point-to-point T1 line (providing 1.5 Mbps) is about \$2,000 per month, which works out to about \$1,333 per Mbps per month. The cost of 10 Mbps guaranteed bandwidth for ATM is \$2,850 per month, which works out to \$285 per Mbps per month.

An encryption device compatible with the transport data rate can be employed on numerous STS transmission links, especially fiber backbone and satellite/microwave links. There are two types of encryption: (1) Bulk encryption and (2) Cell encryption. Bulk encryption devices, such as the KG-189, KG-95, KG-194, etc., approved by either the National Institute for Standards and Technology (NIST) or the National Security Agency (NSA) are used as point to point bulk encryption devices. The KG-75 (FASTLANE) is used to provide ATM cell encryption. This encryption device could be installed as part of the classified STS SDN, on the trunk side of the classified STS SDN ATM switch.

The existing STS Transmission Segment is composed of both government owned and commercially leased connectivity. There is a direct relationship between the performance of the transport systems and the resulting ATM services. A variety of transport systems are used in the STS transmission subsystem. An issue when using ATM over transmission media such as SATCOM (or similar media such as line of sight radios) is error correction and interoperability. Forward Error Correction (FEC) is necessary to condition these transmission links for ATM service. FEC can be applied at the Physical Layer or at the ATM Layer. A number of current and planned ATM systems offer proprietary FEC at the ATM Layer.

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Hazard Risk Mitigation and Emergency Preparedness Project¹²

The Romania government requested the aid of the International Bank for Reconstruction and Development (IBRD) in preparing a Global Management Project for natural risk management. On May 26, 2004, the Loan Agreement and the Global Environmental Facility Fund Financial Assistance Agreement regarding the “project of risk reduction in case of natural disasters and emergency situation preparedness” were signed by the Romanian government and the IBRD. The amount of the loan is USD 150 million and the GEF USD 7 million.

The objective of the project is to support the Romanian Government in reducing social and economic vulnerability to all-hazards risks through a set of high priority global measures. The project encourages and reinforces a global approach to risk management and promotes a close coordination between responsible authorities.

The Components of the project are designated in the project document as

- A) Strengthen and enhance the capacity of Romanian authorities to better prepare for, respond to, and recover from natural or man-made disasters, through:
 - modernization of information technology and communications systems
 - public awareness and preparedness
 - technical feasibility work, and institutional framework for launching of the Romanian Catastrophe Insurance Program

- B) Reduce the seismic vulnerability of priority technical and social infrastructure, through the retrofitting of key structures, and institutional strengthening

- C) Reduce flood risk and vulnerability in critical areas in Romania, to improve safety of large and small dams, in order for these to function as designed, and, to map and model the risk of landslides, so as to reduce losses, providing better land use planning tools

- D) Reduce the risk of water and soil contamination, and loss of human and aquatic life from catastrophic mining accidental spills of pollutants

The main objective of the *Hazard Risk Mitigation and Emergency Preparedness Project* is to support the Romanian Government in reducing the ecological, social and economic vulnerability in case of natural disasters and catastrophe generated by mining spills. It has four major components: a) strengthening emergency management and risk financing

¹² *Hazard Risk Mitigation and Emergency Preparedness Project*, Project Appraisal Document, World Bank. April 19, 2004.

National Emergency Management System in Romania

capacity, b) earthquake risk reduction, c) flood and landslide risk reduction and d) risk reduction of mining accidents in the Tisza basin.

The first component of the project – strengthening emergency management and risk financing capacity – is most relevant to the emergency management system proper, and this definitional mission.¹³

Major elements of this component that are directly related to the emergency management system are in Component A:¹⁴

- Modernization of the communications system in case of national, regional or local emergency
- Development of an emergency management information system
- Development of a public information program

The Ministry of Administration and Interior is responsible implementation of these elements, in close cooperation with the National Committee for Emergency Situations (NCES), the GIES and the project management unit (PMU) under the loan agreement. In order to provide a joint framework for project development and management, the NCES has set up a User Working Group (UWG) with representatives of the ministries and central public agencies with responsibilities in the field of emergency management. The MAI hosts the PMU which performs project management in accordance with the loan agreement.

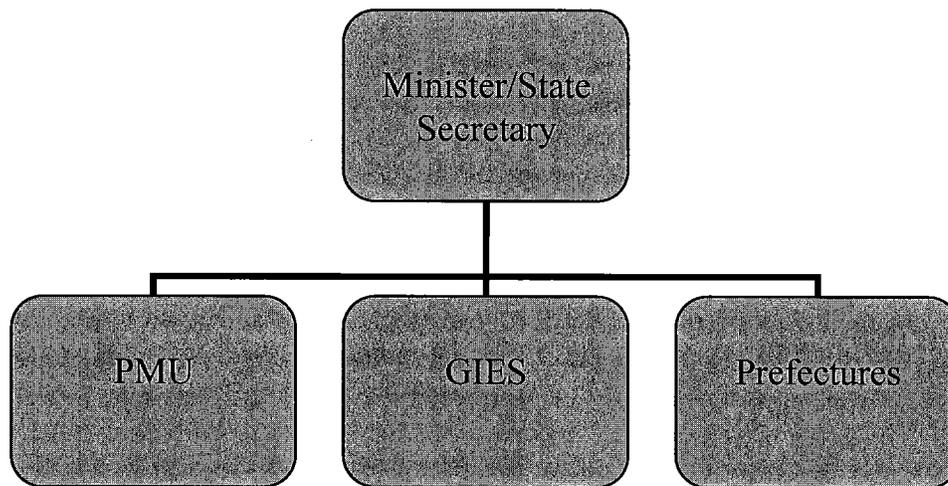


Chart 2 Organizational Chart – World Bank Consultancy

¹³ For details see memorandum “National Emergency Operational Center and Supporting Telecommunications”. Meeting with World Bank. 27 October 2005.

¹⁴ Funding for Component A is USD 10.9 million; however, actual funding in order to complete the procurement, installation and commissioning of the recommended systems will most likely require twice that amount.

National Emergency Management System in Romania

World Bank Consultancy

As part of the *Hazard Risk Mitigation and Emergency Preparedness Project*, the World Bank has prepared an RFP and released terms of reference for two consultancy projects, one for the emergency management information system and the other for emergency communications.

*Emergency Management Information System*¹⁵

The World Bank consultancy for the emergency management information system will take place in two phases. The first phase will include a feasibility study, design of the emergency management information system (EMIS) and complete detailed technical and functional specification ready for procurement. The second phase will include the supervision and monitoring of the installation and system testing.

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 study will focus upon information sharing among the operational centers of the professional services, as well as between the operative centers of the responsible emergency management central public institutions, using the existing communications backbone. The EMIS will be designed to ensure the timely gathering of information, its storage, processing, display, and dissemination. Information will be shared between the national emergency operational center (NEOC) and the operations centers of the various ministries and the central public institutions with responsibilities in emergency management. The NEOC will exchange information with the county emergency operational centers. In turn, the county operations centers will share information among themselves, and with the NEOC. The system will have national coverage. Internationally, information sharing will take place between the NEOC and the UN Office for the Coordination of Humanitarian Affairs, NATO Euro Atlantic Disaster Response Coordination Center (EADRCC), and the EU Monitoring and Information Center.

The emergency management information system is expected to meet the following requirements:

- Ensure data communications within the National Emergency Management System, nationally, regionally and locally
- Ensure that information required for decision making is available at all levels
- Interconnect existing systems, ensuring full interoperability; collect and process data delivered by those systems
- Process information and establish communications in a bi-directional manner, from/to user, in accordance with their legal responsibilities

¹⁵ Consultancy services for *Feasibility and System Design Study for the Development of Emergency Management Information System*.

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- Ensure confidentiality according to NATO, EU, and national regulations
- Preserve operability in case of disasters
- Support routine activities of the interworking institutions within the NEMS

*Upgrading Emergency Communications*¹⁶

The World Bank consultancy for upgrading emergency communications will include a feasibility study and design analysis for enhancing the functionality, interoperability and coverage of the voice communications capability of emergency management agencies focusing on the provision of emergency communications.

The World Bank consultancy will pay special attention to the provision of emergency communications in rural areas where a lack of coverage with mobile systems is a major problem. Another area that will be given special attention is the compatibility of existing communications equipment.

The enhanced emergency communications system is expected to meet the following requirements:

- Ensure the management and coordination as well as cooperation during interventions through operations center dispatches
- Ensure intervention operability by reducing response times
- Integrate existing systems
- Preserve operability during disasters

Schedule

Six consultancy firms (some in consortia) responded to the RFP. Although publicly advertised and eligible, no American consulting firms responded to the RFP.

Selection of a consultant will take place in early 2006.

The first phase - the EMIS consultancy project and the emergency communications study will take approximately nine months to complete. Then, the equipment and systems will be procured. This is expected to take about ten months, at which time the second phase of the EMIS consultancy will start, and continue for approximately six months.

Milestone Approval

The User Working Group must approve milestone reports of the World Bank consultancy, and ensure consensus between the parties.¹⁷

¹⁶ Consultancy Services for *Feasibility Study and Design Analysis for Upgrading the Emergency Communications at the National, Regional and Local Levels*.

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C. Developmental Impact

An emergency response capability is an essential precondition for the functioning of the Romanian economy and its development, not least because of the basic provisions for protection of life and property

This project would have a positive impact on the Romanian economy by encouraging the development of call centers, data centers, and internet exchanges in multiple critical sectors of the Romanian economy, both governmental and private. It should be noted that investments in these businesses would result in the substantial import of telecommunications equipment, surveillance systems, and services from U.S. sources.

This project would have a positive impact on the development of human capital by strengthening the information technology and communications sectors in Romania by expanding the need for support personnel

Additional educational and job training opportunities are likely to accompany deployment of the emergency management system, opening up opportunities for students of information technology, and the eventual creation of small businesses to provide support for regional emergency service entities.

This is a high-priority private sector infrastructure project, especially as regards the telecommunications network. USTDA support will be beneficial to the development of the project, and the demand it will create for the involvement of U.S. contactors and the supply of U.S. goods and services that will transfer intellectual capital to Romania.

The positive developmental impact of protection of lives and property cannot be overestimated.

Developmental impact in USTDA delineated areas is described in the sections below.

Infrastructure

Substantial improvements follow from emergency management facilities to be built and equipped as a consequence of this project. First and foremost are improvements in voice and data telecommunications infrastructure. These include improvements in radio infrastructure, including towers and base stations. Command and control centers established in central and remote (satellite) locations are a major building block for other governmental activities for use during normal operations, such as police and fire.

¹⁷ The technical assistance recommended in this definitional mission report is intended to provide support to the UWG and PMU.

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The enhanced capabilities for weather analysis and forecasting are a fundamental contribution to infrastructure improvement not only for emergency management, but planning as well.

Positive impact is derived from:

- Increased investment due to improved infrastructure;
- Employment growth in technology related industries;
- Exposure of local firms to US firms as potential business venture partners or suppliers; and
- Increased trade with the United States based on compliance with US Departments of Homeland Security and Transportation standards that will be implicitly included in any solutions proposed as a consequence of this definitional mission.

Market Oriented Reforms

Market reforms are supported in sectors supplying and maintaining technologies and systems required for emergency management under transparent conditions. The interdependent nature of emergency management systems and operations, and the requirement for interaction with international bodies with strict procurement regulations creates an environment that is encouraging to market oriented reforms. Creation of demand for services under competitive contract for the systems themselves is another encouragement to market oriented reforms.

The current challenge is to complete implementation and to provide for reliable and consistent enforcement of reform legislation for the decentralization of emergency management. This project includes actions and decisions that require a strong linkage between the national and municipal levels of government. This linkage, or relationship, is still evolving. It is an important stimulus to the implementation and enforcement of reform legislation. The contributions of this project to relationships in vendor and governmental procurement, at the national and local levels of government will as a consequence contribute to further market reforms.

Reinforcement of numerous market oriented reforms, including procurement regulations that have already been enacted.

Human Capacity Building

Human capacity building related to this project is concentrated in the operators and liaison personnel at the emergency management centers and all the satellite entities and the individuals who would be installing and maintaining the facilities and equipment.

Training for command and control center staff in new procedures, technology and management techniques is critical to the success of any project in emergency

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management. First responder, police, fire and emergency medical staff require training with new technologies and procedures. Enhanced national, regional and local management of emergency management systems to be deployed as a consequence of emergency management projects will provide a platform for this training, and training related to normal operations.

Training and opportunities to learn new technologies will be provided to those individuals who install and maintain the equipment as part of any enhancements to emergency management systems. This training can be translated to other sectors, substantially contributing to the building of human capacity in these technologies, and operational applications.

Technology Transfer

Access to new radio communications technology such as Motorola Tetra system, maintenance of these systems as well as a significant portion of the infrastructure implementation could be performed by local companies under the management of Motorola would be a major technology transfer, and represent a substantial transfer of communications capability throughout the country.

The use of new command and control technology applications such as decision-making tools, first responder dispatching, plume analysis, paging, incident management, and weather analysis software applications are areas where technology will be transferred as part of emergency management projects. It is highly unlikely that these technology transfers would take place without a project or projects similar to those described in this definitional mission.

The use of computer telephony integration equipment and applications for communications between citizens and communications center personnel is another major area where technology and skills would be transferred. This includes access to location identification technologies for wireless and voice over internet (VoIP) applications.

Productivity Improvements

New operational procedures between national, regional and local governments will certainly improve response times during emergencies. This is the single most beneficial impact of emergency management projects in terms of saving lives and protecting property.

New command center procedures and management techniques will significantly improve the effectiveness or resource utilization among first responder units, increasing their efficiency and productivity. This will also allow for cross training, giving a major boost to the productivity of existing personnel.

Emergency Response Capability

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Enhancing emergency management capabilities are another positive developmental impact from this technical assistance. This is achieved through:

- Improved command and control infrastructure;
- Enhanced emergency communications infrastructure;
- Improved operational procedures and coordinated response between national and local government resources; and
- Enhanced capabilities to respond and prevent chemical, biological and radiological incidents.

D. Project Sponsor's Commitment

The MAI is completely committed to deploying the national Emergency Management System, indeed it has taken major steps with the World Bank. And, both the MAI and the World Bank are already embarked on a course to develop specific plans and specifications for procurement.

In the opinion of the PMU, the technical assistance would be most successful if timed with the World Bank study. If the time frames coincide and the consultancies are coordinated, there will be substantial and complementary benefits, and the MAI will be aided in making informed decisions regarding system compatibility, ensuring that the latest technology is evaluated, specified, and procured.

The MAI, GIES, and the PMU have indicated that the technical assistance and the resources that technical assistance would bring to the decision making process for technology for emergency management will substantially increase the quality and functionality of the emergency operations center(s) that will be deployed over the next five years.

Schedule

For the reasons outlined above, the GIES would like the USTDA to award a grant as soon as possible in order for the technical assistance to be available within the time frame of the World Bank's study. If approved, USTDA assistance should be delivered to follow the schedule of the World Bank's study milestone dates as actually determined by the PMU, and begin in July 2006 and be completed by March 2007, unless the USTDA agrees in extensions to accommodate changes in the actual milestone dates.

E. Implementation Financing

The investment required for the complete, nationwide deployment of the NEMS as foreseen in this definitional mission report, is roughly estimated at \$55.4 million, of which \$40.0 million, or 72%, could be expected to be sourced from U.S. suppliers. These investment figures relate to the emergency management system itself, not physical structures, emergency equipment or operations personnel.

The total investment for the initial deployment of the NEMS is estimated at only \$15.8 million, of which \$10.9 million is already available from the World Bank loan. The remainder is committed from the national budget of the MAI and the STS. Future investment requirements, and their financing sources, will be identified as the World Bank consultancy studies proceed (as assisted by the proposed technical assistance). In the course of the definitional mission, many sources indicated that the eventual cost of the initial deployment would be twice the World Bank amount, or over \$22 million. There is every indication that financial support for the broad area of emergency management will expand even further once more activities are brought under its umbrella. Examples are monitoring devices, network expansions, satellite communications facilities, and weather forecasting tools. Investments in all of these areas can be used on a daily basis, for normal business. This expands their usefulness, and makes the investments all the more attractive.

For these reasons, it is not necessary to devote resources in the Romanian technical assistance to financial analysis and seeking specific investors or additional lenders. Sufficient resources for implementation financing appear to be well in place.

Financing sources

The MAI stated during the definitional mission that funding sources for implementation of the NEMS – build out of the system from the initial 15.8 million to the national system at \$55.4 million – will be allocated in the Romanian national and local (county) budgets. Funding will be from a mix of sources. Among these are the budgets of the MAI and the STS; local municipal budgets; and EU funding. This financing, of course will depend on circumstances beyond the investment plans for which commitments have already been made, namely the \$15.8 million for the initial deployments.

Another source of financing is the ITU Telecom Surplus Fund that has programs to support emergency communications. The ITU funds projects aimed at assisting ITU member states that have been affected by various emergency situations. Past projects have been funded by both ITU and Inmarsat Limited. The ITU has contributed USD 291,000 while Inmarsat Limited has contributed Euros 105,000 that was used for the procurement of 15 Inmarsat GAN satellite terminals. Under this project, the ITU would, upon request by a member state, deploy these satellite terminals to assist in disaster mitigation and relief.

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F. U.S. Export Potential

U.S.-sourced exports are shown in Table 6 below. The values were estimated in relationship to the total investment expected to be attributable to the technical assistance.

Romania

Potential Investment and Exports

Emergency Management Systems

(000 U.S. \$)

Category	Value - Initial Deployment	Value - National Deployment	Potential U.S. Exports
Automation of data collection & dissemination	500	2,350	940
Communications, Equipment (including integrated communications consoles)	1,500	4,750	4,750
Communications, Telecommunications Systems + Network Upgrades	2,500	6,000	4,800
Computer & Data Center, Equipment/Services (data storage)	300	2,500	2,000
Consolidated IT infrastructure	250	3,050	2,135
Consulting & Planning (Architecture & Engineering Services)	600	1,400	1,120
Connectivity and interfaces (telecommunications gateways)	400	960	864
Control Room Equipment (including map stations)	650	2,075	1,245
Emergency Warning Systems (alert and notification)	1,650	5,400	4,320
Emergency Equipment & Supplies	400	1,100	330
Emergency Management Software	200	1,050	1,050
Engineering project management support	300	850	765
Environmental monitoring and controls	1,250	3,320	1,992
Facility resources	400	1,700	1,020
Geographical Information Systems	1,250	3,800	3,420
Integration of computer systems	200	650	325
Power Sources (Generators, Uninterruptible Power Supplies)	100	700	280
Processing environmental data	350	2,150	860
Satellite communications and services	500	2,500	2,000
Security, Equipment & Systems	50	250	100
Surveillance systems	2,000	6,000	4,800
Training	300	1,100	770
Vehicles (specialized, emergency response and communications)	100	1,750	1,050
TOTAL	15,750	55,405	39,996

Table 4 Exports

National Emergency Management System in Romania

US Companies

US companies have expressed an interest in the IEMS in Central Europe, and Romania in particular. These companies include Cisco, Raytheon, Unisys, Lockheed Martin, IPC, Winbourne & Costas, Motorola, HewlettPackard, IBM, BAE Systems North America, Avaya, and Artel.

At least three of these companies are already working on projects in Romania. Cisco is involved with a project with the STS. Motorola is involved with a project with the TETRA system involving the Gendarmerie. Artel is working with the Ministry of Defense and STS on various classified projects related to communications. These projects are directly relevant to the proposed technical assistance.

Major U.S. companies that would provide the goods and services necessary for these investments are shown in Table 5 below. There are dozens of smaller companies and independent contractors that provide software development services that would potentially be vendors.

Major Equipment & Service Providers

ADT Security Systems	Lockheed-Martin
Amrel	MA-Com
Artel	McCann Systems
Avaya	Motorola
Barco	Nice
Cisco	Nortel Networks
CNAC	Northup-Grumman
Dell	Plangraphics
Environmental Sensors	Plant Equipment
ESRI	Polycom
E-Team	Positron
Fencil	Raytheon
H-P	Rim
IBM	SAIC
Imtech /Activu	Siemens
Intergraph	SRA
Intrado	3COM
IPC	Tiburon
Itronix	WebEOC
Johnson Controls	Winbourne & Costas

Table 5 Major Equipment & Service Providers

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Some potential contractors have already initiated discussions with principals at these companies, and relationships are already in place from which to move forward quickly to consult on the systems and equipment requirements that will flow from the consultants' recommendations.

G. Foreign Competition

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

Toshiba and Acer are the main competitors to U.S. equipment suppliers on the Romanian computer market, while the main competitors to U.S. companies for peripherals sales are Canon, Epson, Kyocera, Oki, Brother, UMAX, Plustek and Mustek.

U.S. telecommunications equipment is very well received in the Romanian market. U.S. telecommunication equipment manufacturers represented in Romania include Avaya, Hewlett Packard, Cisco, 3Com and Bay Networks. However, the Romanian market is heavily dominated by European producers such as Siemens, Ericsson, Nokia and Alcatel.

H. Impact on the Environment

Emergency management projects can have consequences for the environment insofar as the deployment of remote devices and aerial communications devices are involved. However, the impact is small and mostly aesthetic (unsightly towers and overhead cables). However, most of this infrastructure is already in place by commercial, civil governmental or military entities in Romania.

Any projects that may proceed from this definitional mission, however, are not expected to have a negative impact on the environment because the infrastructure is largely in place already.

When the value of IEMS is measured in terms of early warning, disaster recovery, and lives, the environmental impact is almost always positive.

I. Impact on U.S. Labor

There is a potential for a positive impact on U.S. labor from orders to manufacturers of telecommunications equipment, surveillance equipment, sensors, and consulting services related to emergency planning and services.

There should be no negative impact on U.S. labor.

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J. Qualifications

A detailed description of the qualifications, expected levels of expertise and background, of the consultants from the U.S. consulting company who would be awarded a contract to provide the technical assistance stipulated in this definitional mission are stated as Qualifications and Evaluation Criteria, Annex III.

It is mandatory that the individuals qualified for the technical assistance in the scoring of the evaluation criteria are the same individuals actually assigned. Exceptions and substitutions should only be made with the express written approval of the USTDA and the grantee.

Generally speaking an emergency management generalist must on the consulting firms's team. This person should have familiarity with the organization of emergency management in Romania; knowledge of key people in the system; a deep understanding of the hazardous / risk environment; knowledge of the reform process over the past 10-15 years in the area of emergency management in Romania in relation to the MoD, MAI and local authorities; awareness of legislation, budgeting process, new technologies and legacy systems; knowledge of local business partners for implementation of the complex emergency management and communications systems; and expertise in life cycle management.

Emergency management specialists should have broad experience in emergency response, fire rescue and emergency management, environmental protection, monitoring and alarm systems, command and control systems, and related visual displays and communications.

The consulting engineer for communications technology is the key team member who must be experienced in telecommunication networks, in particular network design, functionality of command and control systems, and interfaces with existing networks and facilities. This consultant should be familiar with integrated communications systems, including microwave, cellular, land-line, and satellite. Capabilities of the consultant should include high level LAN/WAN design and network management.

K. Justification

USTDA grant funding is justified on multiple grounds, foremost being the positive impact on economic security in the country and region, the benefits in terms of the protection of life and property, and the deployment of communications systems and emergency response equipment from U.S. vendors.

The exports directly attributable to the proposed technical assistance would be substantial, and sufficient to justify it. In addition, there are substantial benefits on the development side. The economic and social benefits of IEMS projects are substantial, as evidenced by the World Bank's mainstreaming disaster management. Recognition of

National Emergency Management System in Romania

these benefits is one of the reasons for the World Bank's support of the Romanian government with substantial funding, EU funding support, and the willingness of governments to budget expenditures for these facilities themselves.

The proposed technical assistance would provide the Romanian government with an impressive and broad display of U.S. emergency management products and services. It would create an advantage to U.S. firms that wish to enter the market. It would provide a means for optimizing the investment potential of emergency management services and equipment in the Romanian market. This technical assistance and the emergency management tools that would be thereby introduced would demonstrate the benefits of acquiring U.S. technology for emergency management, and thereby encourage the Romanian authorities to make further investments in expanded and enhanced systems.

L. Terms of Reference

Terms of Reference (TOR) for the Technical Assistance is located in Annex I.

Budget for the Technical Assistance is located in Annex II.

Qualifications and Evaluation Criteria for contractor selection is located in Annex III.

M. Recommendations

It is recommended that the USTDA support *Technical Assistance for a Emergency Management System for Romania*, as defined in the terms of reference as stated in this definitional mission, to be offered under competitive bid.

It is the recommendation of this Definitional Mission that the USTDA approve a grant to the MAI in the amount of \$291,340 to support the technical assistance in accordance with the Terms of Reference and Budget. (See Annex I and II, respectively).

N. Contacts

A list of individuals contacted during the definitional mission with their addresses, phone and fax numbers, and e-mail addresses is located in Annex IV.

National Emergency Management System in Romania

ANNEXES

ANNEX I	Terms of Reference
ANNEX II	Budget
ANNEX III	Evaluation Criteria
ANNEX IV	Contacts
ANNEX V	Grant Request Letter

REFERENCE DOCUMENTS

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A N N E X 3

USTDA Nationality, Source, And Origin 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 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 Mandatory Contract Clauses

ROM ~~2~~ 2001-81002A

FForig: REE, DW,
EK
1stps: LZ, PD, GJ, J

GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and the Government of Romania, acting through the Ministry of Administration and Interior ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US\$268,170 ("USTDA Grant") to fund the cost of goods and services required for Technical Assistance ("TA") on the proposed National Emergency Management System 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 cooperate with and, in appropriate circumstances, assist and provide reasonable support for the Contractor.

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, as provided for by Romanian law, for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities (www.fedbizopps.gov)*. Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA Approval of Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 17 below upon selection of the Contractor to perform the 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.

(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 April 30, 2008, 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.

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.

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.

USTDA and its authorized representatives shall maintain the confidentiality of such information in accordance with USTDA practice.

16. Representation of Parties

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

17. Addresses of Record for Parties

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

To: General Vladimir Secara
Inspector General
General Inspectorate for Emergency Situations
46, Banu Dumitrache Street
Sector 2, Bucharest
Romania

Phone: +40-21-232-9586
Fax: +40-21-2329586 / +40-21-2420990
Email: igsu@mai.gov.ro

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.: 116/71001
Activity No.: 2007-81002A
Reservation No.: 078102013
Grant No.: GH078102013

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 termination.

19. Non-waiver of Rights and Remedies

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

20. U.S. Technology and Equipment

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

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IN WITNESS WHEREOF, the Government of the United States of America and the Government of Romania, acting through the Ministry of Administration and Interior, 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.

DONE in BUCHAREST, on the December 14, 2006, in duplicate, in the English language.

FOR
The Government of the United
States of America
United States Trade & Development Agency

By: CAB
Cynthia A. Biggs, Commercial Attaché

Date: 12/14/06

FOR
The Government of Romania
Ministry of Administration and Interior

By: [Signature]
Victor Paul DOBRE, Secretary of State

Date: 14.12.2006

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

28/08 18 JUN 20.00 FAX

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Annex I

Terms of Reference

The objective of the Terms of Reference (TOR) is to provide technical assistance to the Romanian Ministry of Administration and Interior (MAI), the Grantee, to aid in the implementation of its integrated emergency management system, known as the National System for Emergency Situations Management (NSESMS). The technical assistance (TA) will provide support to the Grantee to facilitate the coordination of projects within emergency agencies at the national and county level. Further, the TA will provide independent evaluations of critical telecommunications networks and environmental monitoring infrastructures with respect to their capabilities to support the National Emergency Operational Center (NEOC), in addition to technologies recommended by the World Bank under the *Hazard Risk Mitigation and Emergency Preparedness Project* (HRMEP).

The TA comprises tasks in four major areas, described in the paragraphs below.

Network Capabilities

The TA includes evaluation of Romania's existing network capabilities, including the Special Telecommunications Service (STS), as the telecommunications backbone for the NEOC and will stipulate recommendations for necessary upgrades to provide an Internet Protocol (IP) platform with connectivity and capability to support data collection and dissemination, emergency communications for coordination and operations, notification systems and multimedia collaboration tools.

The STS is a specialized public body, legally established under the laws of Romania, which organizes and coordinates the activities in the telecommunications field in Romania.

Monitoring and Analysis

The TA includes evaluation of the data sources and communications for environmental and seismological monitoring, analysis, and validation of their usefulness for the NEOC and county centers, in particular with respect to early warning and assessment tools.

Equipment and Decision Making Tools

The TA includes evaluation of technologies under consideration for data presentation, decision making and use of the telecommunications network by the NEOC, county centers, the ministries and central public agencies with responsibilities in emergency management.

Program Planning and Management

The TA includes support for the Grantee on the accommodation of all relevant projects regarding the Emergency Management Information System (EMIS), upgrading the supporting telecommunications networks at the national, county and local level, the NEOC, and all relevant activities.

The Contractor shall complete the following tasks in order to achieve these objectives:

TASK 1. Network Infrastructure Readiness Assessment – Existing Network Capabilities Including STS

The Contractor shall conduct an assessment of Romania's network readiness to support additional technology and services that shall include, but not be limited to the following:

- Definition of services and how they relate to business goals and technical objectives;
- Evaluation of the existing network's capability;
- Analysis of proposed network or network changes;
- Evaluation of the current services' capability;
- Analysis of traffic flow and bandwidth requirements;
- Analysis of power and environmental requirements;
- Comparison of the existing infrastructure and proposed infrastructure;
- Evaluation of the network infrastructure requirements; and
- Evaluation of operation and implementation planning requirements.

TASK 2. Network Infrastructure Readiness Assessment - County and Municipal Networks

The twenty-six county and municipal emergency operations and monitoring centers must be interconnected in order for the NEOC to perform its mission. The Contractor shall assess the adequacy of existing network connectivity between the counties and municipalities, determine if it allows sufficient capacity to support emergency communications, and make recommendations for any expansion that may be required. The connectivity and network infrastructure that exists among these centers is shown in bullets below.

Connectivity

- Connectivity to NEOC
- Connectivity between county and municipal emergency operations centers
- Connectivity between monitoring and analysis centers and county and municipal emergency operations and monitoring centers

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The Contractor shall conduct a *Network Infrastructure Readiness Assessment* at the NEOC and county levels. The Contractor shall give special attention to the Bucharest City and County Level.

The Contractor shall evaluate the telecommunications networks supporting data collection and dissemination at the National Institute of Meteorology and Hydrology and the Romanian Seismic Network Acquisition Center, and make recommendations for remediation where required to support the data and analysis requirements of the NEOC as well as the applications and decision-making tools used at the NEOC.

TASK 3. Network Infrastructure Readiness Assessment Report

Based on the findings from Tasks 1 and 2, the Contractor shall prepare and submit a Network Infrastructure Readiness Assessment Report, which shall include recommended changes to the feasibility study for the EMIS as prepared by the World Bank for the HRMEP necessary to enable an IP communications solution, specifically with respect to:

- Network design;
- Network hardware;
- Network software;
- Power and environmental requirements;
- Local Area Network (LAN) and Wide Area Network (WAN) bandwidth; and
- Connectivity with other networks for emergency data transmission.

The Network Infrastructure Readiness Assessment Report containing all recommendations shall be presented within 30 days after completion of the Network Infrastructure Readiness Assessment.

TASK 4. Assessment of Data Collection and Analysis of Sources and Capabilities

The Contractor shall:

- Evaluate the existing system for meteorological surveillance, forecast and alert, entitled the National Integrated Meteorological System;
- Evaluate the existing system for flood monitoring and forecasting known as the Destructive Water Abatement and Control (DESWAT) project;
- Evaluate existing system for water resources management known as the Integrated Water Resources Management system (INTEROPERATE);
- Propose an integrated information system with WATMAN network from the Ministry of Environment and Water Management;
- Propose an integrated information system for warning and impact analysis utilizing the National Institute of Meteorology and Hydrology sources;

- Evaluate the system for seismological monitoring, warning, and impact analysis at the National Institute for Building Research;
- Evaluate capabilities at the National Institute for Building Research with respect to an acceleration map for seismological events. The Contractor shall make recommendations regarding format, communications transport, and display (cross-referenced with Geographic Information System (GIS) maps showing critical infrastructure);
- Evaluate data transmission capabilities to emergency county centers, received through the European Community Urgent Radiological Information Exchange; and
- Evaluate connectivity capabilities of the European Community Urgent Radiological Information Exchange Working Station from the General Inspectorate for Emergency Situations (GIES) with the radiological monitoring maintained by the Ministry of Environment and Water Management.

TASK 5. Report on Data Collection and Analysis Sources and Capabilities

The Contractor shall prepare a Report documenting the findings from the evaluations completed in Task 4. This Report shall contain the Contractor's recommendations on equipment and software to be utilized at the NEOC and shall take into consideration all previous recommendations made by the World Bank and other international donors.

TASK 6. Assessment of Facility, Equipment, Software (GIS and Decision-making Tools), and Communications

The Contractor shall review the equipment configuration for the existing NEOC with respect to immediate objectives (prior to specification of equipment by the World Bank through HRMEP) and make appropriate recommendations, which may include the following:

- Additional equipment and software, such as IP communications consoles and critical information management systems;
- Possibilities for use of equipment and facility for training or pilot programs or laboratory; and
- Possibilities for use of equipment at a back up center.

TASK 7. Report on Facility, Technology, and Communications

The Contractor shall prepare a Report documenting findings from Task 6 assessments and the recommendations on the equipment and software required.

With respect to the World Bank's Design Document for Emergency Communications, the Contractor shall review the detailed design of the emergency management communications system, capacity building plan and cost estimates, as prepared by the World Bank, and prepare a Report on the capabilities, compatibility, and integration of the emergency management communications system with the EMIS. The Contractor shall focus on the telecommunications equipment that is compatible with an IP platform, and allows for multimedia collaboration tools.

With respect to World Bank's EMIS, the Contractor shall review both the preliminary and final design documents and prepare a report on compatibility and use of state-of-the-art technology. The Contractor shall pay special attention to transport and displays of data from environmental and seismological sources, interfaces with international entities, decision making software, and conference calling capabilities between the NEOC, state emergency service personnel, and regional entities.

TASK 8. Program Review

The Contractor shall review World Bank program documents and deliverables to ensure the adequacy of network connectivity and capacity, inclusion of latest generation technologies in the specifications and system recommendations, and system compatibility.

The Contractor shall develop business cases and economic analyses supporting recommendations provided to the designated implementing agencies in Tasks 1 through 7. The goal is to implement a seamless interoperable network that provides the telecommunications information technology and data transmission services necessary to meet the operational needs of the NSESM.

TASK 9. Report on National Emergency Operational Programs

The Contractor shall prepare a Report on the existing and planned programs that support the NEOC. The Report shall include a business case and economic and financial analysis for each recommendation (taken from Task 8). The Report shall be made according to the provisions of the Romanian legislation. The Contractor shall provide detailed analysis of the supporting telecommunications infrastructure for data and voice, most importantly data exchange and conferencing (voice and multimedia) in the Report.

TASK 10. Life Cycle Support

The Contractor shall provide a NEOC Life Cycle Support framework, which shall incorporate the recommendations of the World Bank's HRMEP program and provide recommendations on training and future services needed for the Grantee and GIES to properly manage the HRMEP, and related programs. The framework shall provide the following:

- ***Assistance with strategic planning and associated activities***
The Contractor shall review planning, budget, and program management system life cycle documents, as prepared and submitted by the World Bank, and, in those instances where updating is required; the Contractor shall update the World Bank's lifecycle documents accordingly.
- ***System engineering***
The Contractor shall review engineering documents submitted by the World Bank under HRMEP for their technical sufficiency and ability to satisfy NSESM requirements.
- ***Other Technical Services***
The Contractor shall review system design to protect against threats to service that disrupt, deny, degrade, destroy, or allow unauthorized access. It is critical that security safeguards are implemented at the beginning of the life cycle design, before the systems are fielded specifically in the areas physical security, operational security, network security, and information assurance.

TASK 11. Final Report

The Contractor shall prepare and deliver to the 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 pursuant to Tasks 1 through 10 that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall incorporate the findings, recommendations, and conclusions of the TA and shall incorporate all other documents and/or reports provided pursuant to Tasks 1 through 10 above. It is the Contractor's responsibility to identify prospective U.S. Sources of Supply in the Final Report to be submitted to USTDA and the Grantee in accordance with Clause I of Annex II of the Grant Agreement. The U.S. Suppliers list will identify the capabilities for each of the suppliers.

Notes:

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

Annex II

USTDA Mandatory Contract Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this contract acknowledge that this contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and the Romanian Ministry of Administration and Interior ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the technical assistance ("TA") for the National Emergency Management System Technical Assistance 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 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.

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.

(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."

(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.

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

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

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

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

(c) USTDA Address for Disbursement Requests

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

(4) Termination

In the event that the Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to 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) Three (3) copies 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 (provided USTDA receives a total of four (4) copies). In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

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, and 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 and any subcontractor that performs 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.

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

(e) 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 April 30, 2008, 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.

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M. USTDA Address and Fiscal Data

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

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

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

Fiscal Data:

Appropriation No.:	116/71001
Activity No.:	2007-81002A
Reservation No.:	078102013
Grant No.:	GH078102013

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.

A N N E X 5

**Terms of Reference
(from USTDA Grant Agreement)**

Annex I

Terms of Reference

The objective of the Terms of Reference (TOR) is to provide technical assistance to the Romanian Ministry of Administration and Interior (MAI), the Grantee, to aid in the implementation of its integrated emergency management system, known as the National System for Emergency Situations Management (NSESMS). The technical assistance (TA) will provide support to the Grantee to facilitate the coordination of projects within emergency agencies at the national and county level. Further, the TA will provide independent evaluations of critical telecommunications networks and environmental monitoring infrastructures with respect to their capabilities to support the National Emergency Operational Center (NEOC), in addition to technologies recommended by the World Bank under the *Hazard Risk Mitigation and Emergency Preparedness Project* (HRMEP).

The TA comprises tasks in four major areas, described in the paragraphs below.

Network Capabilities

The TA includes evaluation of Romania's existing network capabilities, including the Special Telecommunications Service (STS), as the telecommunications backbone for the NEOC and will stipulate recommendations for necessary upgrades to provide an Internet Protocol (IP) platform with connectivity and capability to support data collection and dissemination, emergency communications for coordination and operations, notification systems and multimedia collaboration tools.

The STS is a specialized public body, legally established under the laws of Romania, which organizes and coordinates the activities in the telecommunications field in Romania.

Monitoring and Analysis

The TA includes evaluation of the data sources and communications for environmental and seismological monitoring, analysis, and validation of their usefulness for the NEOC and county centers, in particular with respect to early warning and assessment tools.

Equipment and Decision Making Tools

The TA includes evaluation of technologies under consideration for data presentation, decision making and use of the telecommunications network by the NEOC, county centers, the ministries and central public agencies with responsibilities in emergency management.

Program Planning and Management

The TA includes support for the Grantee on the accommodation of all relevant projects regarding the Emergency Management Information System (EMIS), upgrading the supporting telecommunications networks at the national, county and local level, the NEOC, and all relevant activities.

The Contractor shall complete the following tasks in order to achieve these objectives:

TASK 1. Network Infrastructure Readiness Assessment – Existing Network Capabilities Including STS

The Contractor shall conduct an assessment of Romania's network readiness to support additional technology and services that shall include, but not be limited to the following:

- Definition of services and how they relate to business goals and technical objectives;
- Evaluation of the existing network's capability;
- Analysis of proposed network or network changes;
- Evaluation of the current services' capability;
- Analysis of traffic flow and bandwidth requirements;
- Analysis of power and environmental requirements;
- Comparison of the existing infrastructure and proposed infrastructure;
- Evaluation of the network infrastructure requirements; and
- Evaluation of operation and implementation planning requirements.

TASK 2. Network Infrastructure Readiness Assessment - County and Municipal Networks

The twenty-six county and municipal emergency operations and monitoring centers must be interconnected in order for the NEOC to perform its mission. The Contractor shall assess the adequacy of existing network connectivity between the counties and municipalities, determine if it allows sufficient capacity to support emergency communications, and make recommendations for any expansion that may be required. The connectivity and network infrastructure that exists among these centers is shown in bullets below.

Connectivity

- Connectivity to NEOC
- Connectivity between county and municipal emergency operations centers
- Connectivity between monitoring and analysis centers and county and municipal emergency operations and monitoring centers

The Contractor shall conduct a *Network Infrastructure Readiness Assessment* at the NEOC and county levels. The Contractor shall give special attention to the Bucharest City and County Level.

The Contractor shall evaluate the telecommunications networks supporting data collection and dissemination at the National Institute of Meteorology and Hydrology and the Romanian Seismic Network Acquisition Center, and make recommendations for remediation where required to support the data and analysis requirements of the NEOC as well as the applications and decision-making tools used at the NEOC.

TASK 3. Network Infrastructure Readiness Assessment Report

Based on the findings from Tasks 1 and 2, the Contractor shall prepare and submit a Network Infrastructure Readiness Assessment Report, which shall include recommended changes to the feasibility study for the EMIS as prepared by the World Bank for the HRMEP necessary to enable an IP communications solution, specifically with respect to:

- Network design;
- Network hardware;
- Network software;
- Power and environmental requirements;
- Local Area Network (LAN) and Wide Area Network (WAN) bandwidth; and
- Connectivity with other networks for emergency data transmission.

The Network Infrastructure Readiness Assessment Report containing all recommendations shall be presented within 30 days after completion of the Network Infrastructure Readiness Assessment.

TASK 4. Assessment of Data Collection and Analysis of Sources and Capabilities

The Contractor shall:

- Evaluate the existing system for meteorological surveillance, forecast and alert, entitled the National Integrated Meteorological System;
- Evaluate the existing system for flood monitoring and forecasting known as the Destructive Water Abatement and Control (DESWAT) project;
- Evaluate existing system for water resources management known as the Integrated Water Resources Management system (INTEROPERATE);
- Propose an integrated information system with WATMAN network from the Ministry of Environment and Water Management;
- Propose an integrated information system for warning and impact analysis utilizing the National Institute of Meteorology and Hydrology sources;

- Evaluate the system for seismological monitoring, warning, and impact analysis at the National Institute for Building Research;
- Evaluate capabilities at the National Institute for Building Research with respect to an acceleration map for seismological events. The Contractor shall make recommendations regarding format, communications transport, and display (cross-referenced with Geographic Information System (GIS) maps showing critical infrastructure);
- Evaluate data transmission capabilities to emergency county centers, received through the European Community Urgent Radiological Information Exchange; and
- Evaluate connectivity capabilities of the European Community Urgent Radiological Information Exchange Working Station from the General Inspectorate for Emergency Situations (GIES) with the radiological monitoring maintained by the Ministry of Environment and Water Management.

TASK 5. Report on Data Collection and Analysis Sources and Capabilities

The Contractor shall prepare a Report documenting the findings from the evaluations completed in Task 4. This Report shall contain the Contractor's recommendations on equipment and software to be utilized at the NEOC and shall take into consideration all previous recommendations made by the World Bank and other international donors.

TASK 6. Assessment of Facility, Equipment, Software (GIS and Decision-making Tools), and Communications

The Contractor shall review the equipment configuration for the existing NEOC with respect to immediate objectives (prior to specification of equipment by the World Bank through HRMEP) and make appropriate recommendations, which may include the following:

- Additional equipment and software, such as IP communications consoles and critical information management systems;
- Possibilities for use of equipment and facility for training or pilot programs or laboratory; and
- Possibilities for use of equipment at a back up center.

TASK 7. Report on Facility, Technology, and Communications

The Contractor shall prepare a Report documenting findings from Task 6 assessments and the recommendations on the equipment and software required.

With respect to the World Bank's Design Document for Emergency Communications, the Contractor shall review the detailed design of the emergency management communications system, capacity building plan and cost estimates, as prepared by the World Bank, and prepare a Report on the capabilities, compatibility, and integration of the emergency management communications system with the EMIS. The Contractor shall focus on the telecommunications equipment that is compatible with an IP platform, and allows for multimedia collaboration tools.

With respect to World Bank's EMIS, the Contractor shall review both the preliminary and final design documents and prepare a report on compatibility and use of state-of-the-art technology. The Contractor shall pay special attention to transport and displays of data from environmental and seismological sources, interfaces with international entities, decision making software, and conference calling capabilities between the NEOC, state emergency service personnel, and regional entities.

TASK 8. Program Review

The Contractor shall review World Bank program documents and deliverables to ensure the adequacy of network connectivity and capacity, inclusion of latest generation technologies in the specifications and system recommendations, and system compatibility.

The Contractor shall develop business cases and economic analyses supporting recommendations provided to the designated implementing agencies in Tasks 1 through 7. The goal is to implement a seamless interoperable network that provides the telecommunications information technology and data transmission services necessary to meet the operational needs of the NSESM.

TASK 9. Report on National Emergency Operational Programs

The Contractor shall prepare a Report on the existing and planned programs that support the NEOC. The Report shall include a business case and economic and financial analysis for each recommendation (taken from Task 8). The Report shall be made according to the provisions of the Romanian legislation. The Contractor shall provide detailed analysis of the supporting telecommunications infrastructure for data and voice, most importantly data exchange and conferencing (voice and multimedia) in the Report.

TASK 10. Life Cycle Support

The Contractor shall provide a NEOC Life Cycle Support framework, which shall incorporate the recommendations of the World Bank's HRMEP program and provide recommendations on training and future services needed for the Grantee and GIES to properly manage the HRMEP, and related programs. The framework shall provide the following:

▪ ***Assistance with strategic planning and associated activities***

The Contractor shall review planning, budget, and program management system life cycle documents, as prepared and submitted by the World Bank, and, in those instances where updating is required; the Contractor shall update the World Bank's lifecycle documents accordingly.

▪ ***System engineering***

The Contractor shall review engineering documents submitted by the World Bank under HRMEP for their technical sufficiency and ability to satisfy NSESM requirements.

▪ ***Other Technical Services***

The Contractor shall review system design to protect against threats to service that disrupt, deny, degrade, destroy, or allow unauthorized access. It is critical that security safeguards are implemented at the beginning of the life cycle design, before the systems are fielded specifically in the areas physical security, operational security, network security, and information assurance.

TASK 11. Final Report

The Contractor shall prepare and deliver to the 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 pursuant to Tasks 1 through 10 that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall incorporate the findings, recommendations, and conclusions of the TA and shall incorporate all other documents and/or reports provided pursuant to Tasks 1 through 10 above. It is the Contractor's responsibility to identify prospective U.S. Sources of Supply in the Final Report to be submitted to USTDA and the Grantee in accordance with Clause I of Annex II of the Grant Agreement. The U.S. Suppliers list will identify the capabilities for each of the suppliers.

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.**