

REQUEST FOR PROPOSALS

TECHNICAL ASSISTANCE FOR THE

NATIONAL EMERGENCY NETWORK PROJECT

Submission Deadline: **5:00 PM**
LOCAL TIME – Santiago, Chile
MAY 20, 2013

Submission Place: Subtel
Amunátegui 139, piso 5
Santiago, Chile

Attn: Jorge Molina & Nelson Contreras
Phone: 56-2-421-3578
Fax: 56-2-421-3660

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

REQUEST FOR PROPOSALS

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Section 1: INTRODUCTION

The U.S. Trade and Development Agency (USTDA) has provided a grant in the amount of US\$514,548 to the Undersecretariat of Telecommunications of Chile (“Subtel”) (the “Grantee”) in accordance with a grant agreement dated July 31, 2012 (the “Grant Agreement”). The purpose of this technical assistance (“Technical Assistance” or “TA”) is to assist Subtel, the Government of Chile (“GOC”) agency that is tasked with oversight over the telecommunications and ICT sectors, in the planning of the National Emergency Network (“NEN”) (the “Project”) in Chile (the “Host Country”). The NEN will serve as a common communications facility that will ensure uninterrupted operation under a wide range of emergency and disaster scenarios, while at the same time enabling interconnection and interoperability of existing and future emergency communications networks, thus providing a unified platform.

This Technical Assistance will involve the diagnostic of the national emergency networks, the desired model definition, the gaps identification (between current and desired model), the medium and long term plan to accomplish it, and finally, an RFP for a tender, while a second phase, which is not part of this Technical Assistance, will cover the acquisition of equipment. The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Technical Assistance.

1.1 BACKGROUND SUMMARY

The NEN is an important component of the efforts of the GOC, on a variety of fronts, to enhance national emergency/disaster response capabilities in the wake of the severe earthquake and tsunami that struck the country in February 2010. The objective of the project is to create a nationwide networking facility that is highly robust and redundant, and capable of uninterrupted and undegraded operation under a wide range of emergency and disaster scenarios. In addition, by incorporating a variety of interfaces and gateway devices, the NEN would enable the currently disparate systems of various public-safety organizations to interoperate, thus enhancing their ability to mount timely and coordinated responses to emergency/disaster situations. The new facility, together with the concomitant unification, standardization and streamlining of the underlying systems, hardware and software, is expected to yield a number of other benefits, in particular the following:

- More effective coordination among agencies responsible for emergency and disaster response
- More effective and better-targeted response to emergencies and disasters
- More efficient utilization of resources, equipment and personnel
- Rationalization of current voice/data/video/messaging networking systems and associated procedures
- Increased flexibility to accommodate future growth and expansion
- Improved security

The principal beneficiary of the NEN will be the GOC agency responsible for civil protection and for coordination of emergency/disaster relief efforts. That agency is currently the National Emergency Office (Oficina Nacional de Emergencia, ONEMI), but is expected to transition to a

newly created body, the National Civil Protection Agency (Agencia Nacional de Protección Civil, ANPC), with increased powers and a broader mandate. Subtel has been tasked by the GOC with providing expert assistance to the country's civil protection agency irrespective of whether that agency is ONEMI or ANPC) in the planning and procurement of the NEN. The proposed Technical Assistance is aimed at providing Subtel with the expertise and support it requires to plan and execute this high-priority, "mission-critical" project. Portions of a background Definitional Mission is provided for reference in Annex 2.

1.2 OBJECTIVE

The objective of the Technical Assistance is to assist Subtel in the planning of the National Emergency Network (NEN). The NEN will serve as a common communications facility that will ensure uninterrupted operation under a wide range of emergency and disaster scenarios, while at the same time enabling interconnection and interoperability of existing and future emergency communications networks, thus providing a unified platform.

This Technical Assistance will involve the diagnostic of the national emergency networks, the desired model definition, the gaps identification (between current and desired model), the medium and long term plan to accomplish it, and finally an RFP for a tender, while a second phase, which is not part of this Technical Assistance, will cover the acquisition of equipment. The Terms of Reference (TOR) for this Technical Assistance are attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

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

The amount for the contract has been established by a USTDA grant of US\$514,548. **The USTDA grant of US\$514,548 is a fixed amount. Accordingly, COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted.** Upon detailed evaluation of technical proposals, the Grantee shall select one firm for contract negotiations.

1.4 CONTRACT FUNDED BY USTDA

In accordance with the terms and conditions of the Grant Agreement, USTDA has provided a grant in the amount of US\$514,548 to the Grantee. The funding provided under the Grant Agreement shall be used to fund the costs of the contract between the Grantee and the U.S. firm selected by the Grantee to perform the TOR. The contract must include certain USTDA Mandatory Contract Clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA Mandatory Contract Clauses are attached at Annexes 3 and 4, respectively, for reference.

Section 2: INSTRUCTIONS TO OFFERORS

2.1 PROJECT TITLE

The project is called the National Emergency Network.

2.2 DEFINITIONS

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

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

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

2.3 DEFINITIONAL MISSION REPORT

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

2.4 EXAMINATION OF DOCUMENTS

Offerors should carefully examine this RFP. It will be assumed that Offerors have done such inspection and that through examinations, inquiries and investigation they have become familiarized with local conditions and the nature of problems to be solved during the execution of the 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 US\$514,548.

2.6 RESPONSIBILITY FOR COSTS

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

2.7 TAXES

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

2.8 CONFIDENTIALITY

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

2.9 ECONOMY OF PROPOSALS

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

2.10 OFFEROR CERTIFICATIONS

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

2.11 CONDITIONS REQUIRED FOR PARTICIPATION

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from the Host Country for up to 20 percent of the amount of the USTDA grant for

specific services from the TOR identified in the subcontract. USTDA's nationality requirements, including definitions, are detailed in Annex 3.

2.12 LANGUAGE OF PROPOSAL

All proposal documents shall be prepared and submitted in both English AND Spanish.

2.13 PROPOSAL SUBMISSION REQUIREMENTS

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

Subtel
Attn: Jorge Molina & Nelson Contreras
Amunátegui 139, piso 5
Santiago, Chile

Phone: 56-2-421-3578
Fax: 56-2-421-3660

An Original and eight (8) copies of your proposal must be received at the above address no later than 5:00 local (Santiago) time, on May 20, 2013.

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

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

2.14 PACKAGING

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

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

2.15 OFFEROR'S AUTHORIZED NEGOTIATOR

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

2.16 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.

2.17 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for FORTY-FIVE [45] 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.

2.18 EXCEPTIONS

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

2.19 OFFEROR QUALIFICATIONS

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

2.20 RIGHT TO REJECT PROPOSALS

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

2.21 PRIME CONTRACTOR RESPONSIBILITY

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

2.22 AWARD

The Grantee shall make an award resulting from this RFP to the best qualified Offeror, on the basis of the evaluation factors set forth herein. The Grantee reserves the right to reject any and all proposals received.

2.23 COMPLETE SERVICES

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

2.24 INVOICING AND PAYMENT

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

Section 3: PROPOSAL FORMAT AND CONTENT

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

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

The proposal shall consist of a technical proposal only. A cost proposal is NOT required because the amount for the contract has been established by a USTDA grant of US\$514,548, which is a fixed amount.

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

Each proposal must include the following:

- Transmittal Letter,
- Cover/Title Page,
- Table of Contents,
- Executive Summary,
- Firm Background Information,
- Completed U.S. Firm Information Form,
- Organizational Structure, Management Plan, and Key Personnel,
- Technical Approach and Work Plan, and
- Experience and Qualifications.

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

3.1 EXECUTIVE SUMMARY

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

3.2 U.S. FIRM INFORMATION

A U.S. Firm Information Form in .pdf fillable format is attached at the end of this RFP in Annex 6. The Offeror must complete the U.S. Firm Information Form and include the completed U.S. Firm Information Form with its proposal.

3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

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

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

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

3.4 TECHNICAL APPROACH AND WORK PLAN

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

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

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

3.5 EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications that 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. The Offeror shall provide information with respect to relevant experience and qualifications of key staff proposed. The Offeror shall include letters of commitment from the individuals proposed confirming their availability for contract performance.

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

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

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to 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. The Grantee will notify USTDA of the best qualified Offeror, and upon receipt of USTDA's no-objection letter, the Grantee shall promptly notify all Offerors of the award and negotiate a contract with the best qualified Offeror. If a satisfactory contract cannot be negotiated with the best qualified Offeror, negotiations will be formally terminated. Negotiations may then be undertaken with the second most qualified Offeror and so forth.

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

<u>Criterion</u>	Max. Points
Expertise and skills of proposed personnel	50
Proposed approach to the TA and to the individual tasks	30
Pertinent international experience and cross-cultural skills	15
Experience and capabilities of Local Support	5
Total:	100

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

Price will not be a factor in contractor selection.

ANNEX 1

Subtel
Amunátegui 139, piso 5
Santiago, Chile

Attn: Jorge Molina & Nelson Contreras
Phone: 56-2-421-3578
Fax: 56-2-421-3660

USTDA Activity No. 201251017A: Chile: National Emergency Network

POC: Anthony O'Tapi, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. National Emergency Network. The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms that are qualified on the basis of experience and capability to provide technical assistance to the Undersecretariat of Telecommunications of Chile ("Subtel" or "Grantee") in the planning of a National Emergency Network ("NEN" or "Project").

The NEN is an important component of the efforts of the Government of Chile ("GOC"), on a variety of fronts, to enhance national emergency and disaster response capabilities. Subtel is a GOC agency tasked with oversight over the telecommunications and ICT sectors. The NEN will serve as a common communications facility that will ensure uninterrupted operation under a wide range of emergency and disaster scenarios, while at the same time enabling interconnection and interoperability of existing and future emergency communications networks, thus providing a unified platform.

This Technical Assistance will involve the diagnostic of the national emergency networks, the desired model definition, the gaps identification (between current and desired model), the medium and long term plan to accomplish it, and finally, an RFP for a tender, while a second phase, which is not part of this Technical Assistance, will cover the acquisition of equipment.

The U.S. firm selected will be paid in U.S. dollars from a \$514,548 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 portions of 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/businessopps/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 both English and Spanish, directly to the Grantee by 5:00PM local (Santiago) time, May 20, 2013, 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

FINAL REPORT

DEFINITIONAL MISSION TO CHILE:
INFORMATION AND COMMUNICATIONS
TECHNOLOGIES
USTDA CO201151211

Submitted by

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January 31, 2012



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The U.S. Trade and Development Agency

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

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

Mailing and Delivery Address: 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901
Phone: 703-875-4357 **Fax:** 703-875-4009 **Web site:** www.ustda.gov **Email:** info@ustda.gov

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SECTION I

GENERAL INTRODUCTION

1. BACKGROUND ON THE DEFINITIONAL MISSION

The present Definitional Mission (DM) sought to identify opportunities for greater U.S. involvement in the ICT sector in Chile. The general objectives of the DM were as follows:

To conduct in-depth research into the Chilean ICT sector, with the aim of identifying specific project opportunities, as well as developing relevant and current information on activities in the sector, principal actors and stakeholders, interested U.S.-based parties, and other resources to support the subsequent DM in-country activities;

To assess and define ICT sector projects (feasibility studies, technical assistance or trade capacity building activities) which are regarded as viable options for USTDA consideration, which will both benefit the host country (e.g., through deployment of new and/or more cost-effective infrastructure, technologies and services; ICT sector resource capacity-building; strengthening of sector regulation and oversight, promotion of public-private partnerships in ICT), and offer potential for increased U.S. exports of ICT-related goods and services.

More specifically, the original DM Solicitation had indicated that several Chilean institutions had expressed interest in USTDA funding for ICT initiatives, and that certain particular requests for funding were to be followed up and assessed in the course of the DM. These requests were described in the DM Solicitation as follows:

Subtel National Emergency Response System and Spectrum Management. Recent natural disasters (volcanic eruptions, the February 2010 earthquake, and tsunami threats) have highlighted the need for improving the national emergency response system. The Subsecretariat of Telecommunications (Subtel) has requested USTDA funding for a feasibility study to develop such an emergency response system, which would be used to alert and mobilize citizens in such circumstances. Additionally, legislative discussions are under way to shift Subtel from the status of a Subsecretariat to the higher level of Superintendency. This would give the agency greater regulatory power over private-sector operators, and increase funding for telecommunications development. In preparing for this shift, Subtel has recognized that it lacks expertise in the area of spectrum management, and has also requested USTDA funding for a feasibility study regarding spectrum management and allocation in Chile. Besides advancing the progress of the new Superintendency, such a study should enhance U.S. prospects in the Chilean wireless/mobile communications sector.

INAPI Web Portal and Enterprise Resource Planning. The National Institute of Intellectual Property (INAPI), a new agency within the Chilean government, has determined that its IT infrastructure requires expansion in order for the agency to operate efficiently and serve the public more cost-effectively. An enhanced and expanded Web portal would improve efficiency in processing requests, and increase transparency and public access to information on existing patents, thus promoting innovation and economic growth. INAPI has also expressed interest in a feasibility study to evaluate an Enterprise Resource Planning (ERP) system for the agency. Reportedly, no other Chilean government agency uses an ERP system, and INAPI wishes to be a leader in this area.

In addition, it was understood that other opportunities to be assessed by the DM might come to light in the course of the in-country activities. In all cases, the DM was tasked with evaluating the technical, financial and economic viability of the corresponding project possibilities, and to quantify the potential for exports of U.S. goods and services to Chile.

The DM Contractor traveled to Chile for a period of twelve business days (August 26 through September 2, 2011) and conducted interviews with a wide range of public- and private-sector entities. Additionally, the DM Contractor liaised with the Commercial Section of the U.S. Embassy in Santiago. The meetings held and the project opportunities reviewed are described in this section and also in Section III of this Report, while a general contact list may be found in Section IV.

As a result of these activities, one project opportunity was identified which, in the opinion of the DM Contractor, can be recommended for USTDA funding support. The opportunity in question is a Technical Assistance to the Subsecretaría de Telecomunicaciones (Subtel), the national telecom and ICT regulatory agency, in the area of planning the implementation of a national backbone network for emergency communications. (See Section II of this Report for a full description, as well as the proposed Terms of Reference and budget.)

The next section provides background on Chile and the ICT and telecom sectors of the country.

2. COUNTRY OVERVIEW

Chile enjoys a relatively high standard of living and a stable economy. According to the United Nations Development Programme (UNDP) *2010 Human Development Report*, Chile has the highest level of human development in Latin America. At the end of 2009, Chile became the first South American country to join the Organization for Economic Cooperation and Development (OECD).

Chile's market-oriented economy is characterized by a high level of foreign trade, sound economic policies and strong financial institutions. Exports account for more than one-fourth of GDP; copper alone provides one-third of government revenue. Since 1999, annual growth has averaged 4%. Chile deepened its longstanding commitment to trade liberalization with the signing of a free trade agreement with the U.S., which took effect on 1 January 2004. Foreign direct investment (FDI) inflows quadrupled over the period 2003-2010, although there was a significant drop in 2009 as a result of the worldwide economic downturn. Nonetheless, the Chilean economy began to recover in the fourth quarter of 2009, and GDP grew more than 5% in 2010. Chile achieved this growth despite the magnitude 8.8 earthquake – one of the strongest on record – that struck in February 2010.

With a GDP of some \$260 billion at PPP, Chile is a key player in an important and strategic

Chile: Key Macro Indicators	
Population (est. 2010)	16,900,000
GDP per Capita (est. 2010)	US\$11,785
GDP per Capita at PPP (est. 2010)	US\$15,500
Poverty Rate (UN est. 2009)	11.5%
Unemployment Rate (official est. 2010)	8.7%

export market for the U.S. The U.S. is Chile's largest trading partner, and Chile is the U.S.'s fifth largest trading partner in Latin America. Furthermore, total U.S. exports to Chile have risen sharply over the last several years, from US\$2.6 billion in 2002 to over US\$10 billion in 2010. Annual exports of ICT-related equipment have risen at approximately the same rate; in 2010, the U.S. exported US\$340 million worth of telecommunications equipment and US\$693 million of computer systems, equipment and accessories.

3. ICT AND TELECOMMUNICATIONS SECTORS

ICT

The GOC has been a pioneer in adopting a proactive approach to ICT. The country was one of the first nations in Latin America to begin deregulating its telecom industry, in the early 1990s, in order to increase competition and efficiency in the sector. More generally, Chile recognized that if ICT was to become an integral part of the nation's economy and the daily life of the citizenry, it needed to achieve a high degree of universality and availability, including among rural, remote and marginalized segments of the population.

Chile has implemented various initiatives aimed at increasing ICT usage. Most recently, the Chilean government has championed the so-called Agenda Digital, initially introduced in February 2010, to set Chile more firmly on the road to the Information Society. This plan comprises 34 initiatives across several major action areas, including access, e-Government, education and training, ICT industries, ICT enablement in business, and legal and regulatory framework.

On a general level, Chile scores high on measures of ICT readiness.¹ Levels of Internet awareness and usage are relatively high, although reportedly there are marked disparities between the situation in the capital city Santiago and the rest of the country, on the one hand; and between the under-25 and over-25 segments of the population, on the other. At the same time, broadband Internet access has currently achieved only a modest 10% penetration, and there are wide variations in availability across the country. A recent OECD study (September 2010) ranked Chile next-to-last among the organization's 34 member states in terms of measures of cost and quality of access. Additionally, the most recent Cisco/IDC *Broadband Barometer* indicates that, in 2010, Chile fell behind Uruguay and Argentina in terms of fixed and mobile broadband take-up.

Chile: Key ICT/Telecom Indicators	
Fixed-line penetration (Entel, mid-2009)	3,550,000 (21%)
Mobile penetration (mid-2010)	17,500,000 (>100%)
Internet users (IDC, 2009)	5,745,000 (34%)
Broadband Internet subscribers (2009)	1,690,000 (10%)
ICT turnover (exclusive of telecom, 2010)	US\$3.2 billion
Telecom sub-sector turnover (2009)	US\$8.5 billion
Number of Internet hosts (2009)	850,000
Number of ICT-Related Businesses (2010)	> 700

In the public sector, there is a high degree of awareness in the GOC, from the Presidency

¹ For example, Chile ranks in 30th place in the 2009 e-Readiness scores of the *Economist Intelligence Unit* – the highest place of any Latin American country; on the UN e-Government Readiness Index, Chile is in 34th place, second only to Colombia in the region.

downward, of the critical importance of ICT in improving the efficiency and quality of government services, increasing the productivity of public- and private-sector enterprises, and enhancing the quality of life of the citizenry. However, progress in public-sector ICT deployment has not been without problems. It is reported that, although large numbers of initiatives and projects have been undertaken, coordination among the numerous actors and stakeholders is sometimes poor, so that some projects have been implemented only in part, or abandoned altogether. Also, levels of ICT readiness and usage are said to be very unevenly distributed across public-sector institutions.

Telecommunications

Chile is generally regarded as the most mature telecom market in Latin America, and a pioneer in the deployment of new technologies. In fact, Chile was the first country in Latin America to roll out services such as mobile WiMAX, Internet Protocol TV, the “triple play” service suite, EDGE-based data services, and mobile voice-to-text. It was the second country in the region, after Puerto Rico, to have advanced third-generation (3G) mobile services. Moreover, in December 2009, Chile became the first country in Latin America and the fifth in the world to test the fourth-generation mobile technology known as Long Term Evolution (LTE).

Basic fixed-line infrastructure in Chile is among the more advanced in Latin America. Fixed-line teledensity stands at 21%, one of the highest figures in the region. Additionally, the SAM-1, Pan American and other fiber-optic submarine cable systems provide good international connectivity, while the more remote southern regions of the country are linked to the center by the same technology. The mobile sub-sector, which accounts for about 75% of total turnover in the telecom sector, continues to develop vigorously; the 100% penetration level was reached in the course of 2009. On the other hand, the ambitious plans to deploy a National Internet Infrastructure that were proposed in the 2007 *Estrategia Digital*, involving a variety of technological platforms (fiber-optic, satellite, wireless), have been repeatedly delayed.

Major Actors

In the Chilean public sector, the institutions most directly engaged in ICT are:

Subsecretariat of Telecommunications (Subsecretaría de Telecomunicaciones, Subtel; see also below), an arm of the Ministry of Transportation and Telecommunications. The mission of Subtel is to promote equal access to ICT, in particular through subsidies, concessions and permits; to enhance the competitiveness of the market; to supervise the provision of telecom services; to maintain and update sector legislation and regulation; and to ensure consumer protection, all with the general objective of promoting economic, social and cultural development, equal opportunity, and improvement of the quality of life of the citizenry.

Ministry of the Economy, Development and Tourism (Ministerio de Economía, Fomento y Turismo, Minecon). The Ministry’s mission includes the promotion of innovation and entrepreneurship, and the digital development of Chile. A unit of the Ministry is the Secretariat of Digital Development (Secretaría de Estrategia Digital), created in early 2007 in response to the need for promulgating public policy to promote the use of ICT by citizens, business and government. In particular, the Secretariat develops recommendations for ICT investments in GOC institutions.

Ministry of the General Secretary of the Presidency (Ministerio del Secretario General de la Presidencia, Segpres). This Ministry coordinates and schedules the GOC's agenda, and is responsible for the GOC's internal modernization program.

In the telecom area, the principal actors are as follows:

Entel Chile, the former state-run long-distance monopoly, and now a publicly listed company with majority Chilean ownership. In addition to its traditional national and international long-distance business, the company now provides mobile service (branded as Entel PCS), Internet access and local telephony. Entel Chile also has a subsidiary operation in Peru.

Grupo Telefónica Chile (branded as Movistar), a subsidiary of the Spanish conglomerate Telefónica S.A., which acquired the former Compañía de Teléfonos de Chile (CTC) in the mid-1990s. Like Entel, Movistar is a "full-service" operator, providing local and long-distance telephony, mobile, Internet access, and satellite services. In recent years the company has diversified its portfolio, which now includes an extensive suite of business and security-related services.

There are five other fixed-line operators, including VTR Chile (the country's largest CATV provider, also offering Internet access and fixed-line telephony); GTD Manquehue, which operates primarily in the capital city Santiago; and Telsur, active in the southern regions of the country. According to recent press reports, Telsur is currently in the process of being acquired by GTD Manquehue.

The two major mobile operators Movistar (with a 42% market share) and Entel PCS (38%) are parts of the Grupo Telefónica Chile and Entel Chile organizations respectively, as noted above. The third mobile operator, Claro (the former Smartcom), with 20% of the market, is a subsidiary of Mexico's América Móvil. Claro was the first to deploy third-generation (3G) mobile technology on a nationwide basis.

In addition to the above, certain industry organizations play a prominent role in the promotion and development of ICT in the country, in particular the following:

Chilean Association of ICT Companies (Asociación Chilena de Empresas de Tecnología e Información, ACTI), established in 1984. The mission of this organization is to promote the development and application of ICT, through the establishment of adequate legislative and regulatory frameworks and encouragement of free competition, in order to develop the domestic and foreign markets for Chilean ICT products and services. ACTI's 155 members include Alcatel-Lucent, Cisco, D-Link, Dell, Global Crossing, GTS, Hewlett Packard, IBM, Intel, McAfee, Microsoft, Oracle, Unisys and Xerox.

Digital Country Foundation (Fundación País Digital, FPD). Established in 2001 as a nonprofit organization, FPD engages in research, dissemination, and development of various aspects of technology, with the general objective of promoting and consolidating a digital culture in Chile.

All of these companies stand to benefit, directly or indirectly, from increased activity in the telecom sector, and can be expected to have an interest in potential opportunities.

4. INSTITUTIONS TARGETED BY THE DEFINITIONAL MISSION

This section provides additional background information on the two institutions that were specifically targeted by the DM, and briefly summarizes in-country meetings and project reviews that were undertaken by the DM Contractor.

Subsecretaría de Telecomunicaciones (Subtel)

Background

The oldest telecommunications regulatory body in Latin America, Subtel was formally established in 1977, although until the demise of the Pinochet regime (in 1990) its role was more symbolic than real. Even today, its institutional status is that of a “vice-ministry,” and it remains technically subordinate to the Ministry of Transportation and Telecommunications (MTT). Nonetheless, in the 1990s Subtel oversaw the general opening of the Chilean market to competition, and also played a key role in initiatives such as the establishment and implementation of the Telecommunications Development Fund (Fondo de Desarrollo de las Telecomunicaciones, FDT). The FDT provides subsidies to operators who undertake to expand telecommunications services into the remoter areas of the country.

Currently, Subtel lists its primary responsibilities as follows:

- To promote equitable access to ICT, through the granting of subsidies, concessions and permits
- To enhance competitiveness in the marketplace
- To update and maintain the regulatory framework of the sector
- To ensure appropriate consumer protection through oversight of telecommunications services

with the general objective of fostering the economic, social and cultural development of the country, equality of opportunity, and improvement of the quality of life of the citizenry.

In 2009, Subtel had some 235 employees and an operating budget of around US\$31 million, virtually all of which was provided by GOC budgetary allocations. The current head of the agency is Jorge Atton Palma.

In recent years, the agency has faced an increasing number of challenges. Perhaps the foremost of these concerns its institutional status and role. Subtel shares responsibilities with other GOC institutions in a number of areas, such as spectrum management, licensing, tariffing and ICT development, and the lines of demarcation are not always clear-cut. Furthermore, these divisions of responsibility have become increasingly problematic as the industry moves toward a convergence paradigm in which traditional distinctions among operators and service offerings are increasingly difficult to maintain. Finally, Subtel’s position as a subordinate entity – and, moreover, one whose Administrative Council includes representatives of various GOC Ministries in addition to the MTT – raises questions about its degree of independence and susceptibility to conflicts of interest. The prospect of a new institutional model for Subtel has been mooted for at least a decade, and in 2007 a draft law was proposed that would raise its status to one of a Superintendency. Such a move would effectively make Subtel independent of

the Ministry and would place it on a par with, for example, the agencies that oversee the banking, insurance and environmental sectors. So far, however, further action has not been taken, and currently there does not appear to be a clear timetable for the law's adoption.

A further challenge to Subtel originates in recent natural disasters, and particularly the February 2010 earthquake and tsunami (see also Section II). The GOC judged that the response of the National Emergency Office (Oficina Nacional de Emergencia, ONEMI) had been inadequate; furthermore, a consensus emerged that the national emergency communications service, known as the Integrated Emergency System (Sistema Integrado de Emergencia, SIE-100), performed poorly despite the fact that its infrastructure for the most part escaped serious damage. In response, in early 2011 the GOC enacted a law creating a new body, the National Civil Protection Agency (Agencia Nacional de Protección Civil, ANPC), with increased powers and a broader mandate.² Provision was also made for the creation of a National Emergency and Civil Protection System, intended to rectify the shortcomings of SIE-100, and furthermore, for Subtel to provide expert support to the civil-protection agency in planning and implementing the corresponding network infrastructure.

In addition to the high-visibility issue of allocation of spectrum for emergency communications, Subtel has a number of other concerns in the area of spectrum management. In particular, Subtel needs to decide how to make most effective use of the so-called "digital dividend," i.e., the spectrum that will be freed up as a result of the transition from analog to digital over-the-air broadcasting.³ Also, under pressure from Chile's mobile operators, Subtel has indicated that it intends to hold auctions for fourth-generation (4G) wireless/mobile services in 2012. Important decisions, that comprehensively take account of the needs of government, operators and the citizenry, will need to be made concerning spectrum allocation for 4G, and, furthermore, considerable preparation will be required if these auctions are to be successfully carried out.

Summary of DM In-Country Activities

The DM Contractor conducted a series of meetings with Subtel personnel during the in-country portion of the DM. In addition, he arranged an on-site visit to the Centro de Alerta Temprana (Early Warning Center, CAT) of ONEMI, during which time he met with the staff on duty at the time and reviewed the systems and procedures currently in place.

On the basis of these meetings, the DM Contractor judged that a request on the part of Subtel for technical assistance (TA) with a high-priority project, namely the National Emergency Backbone Network (NEBN) Project, merited USTDA support. The NEBN Project is an important component of the efforts of the GOC to enhance national emergency/disaster response capabilities in the wake of the February 2010 earthquake and tsunami. The objective of the project is to create a nationwide backbone networking facility that is highly robust and redundant, and capable of uninterrupted operation under a wide range of emergency and disaster

² As of this writing, ANPC has yet to become operational; ONEMI continues to be the GOC agency responsible for public safety and emergency/disaster response.

³ The International Telecommunications Union (ITU) has mandated that this transition be completed worldwide by 2015.

scenarios. In addition, by incorporating a variety of interfaces and gateway devices, the NEBN would enable the currently disparate systems of various public-safety organizations to interoperate, thus enhancing their ability to mount timely and coordinated responses to emergency/disaster situations. A complete description of this project, together with a Terms of Reference (TOR) and budget for the proposed TA, is given in Section II.

The DM Contractor judged that a second request for by Subtel, for assistance in providing training in the area of spectrum management, did not offer as good a fit with USTDA criteria, and could not be given a positive recommendation. Further details may be found in Section III.

National Institute of Intellectual Property (INAPI)

Background

INAPI was established by Law 20.254 in April 2008. In effect, the law converted what was formerly the Intellectual Property Department within the Ministry of the Economy into a quasi-autonomous governmental body, with a director appointed directly by, and answerable to, the President of Chile. The current Director is Maximiliano Santa Cruz Scantlebury. Under the law, the principal responsibilities of the organization are:

- To carry out all administrative activities related to the protection of intellectual property established by the laws of Chile
- To carry out activities and initiatives that promote awareness of intellectual-property issues
- To act as consultative and advisory body to the President on matters related to intellectual property, and to inform the competent authorities of draft legislation and regulations in this area
- To propose, via the Ministry of the Economy, Chile's adherence to international treaties or conventions related to intellectual property

INAPI's Annual Report for 2010 (*Balance de Gestión Integral 2010*) provides extensive information on the agency's organization and activities. According to Annual Report, employees numbered 171 at the end of the year, and the total annual budget amounted to the equivalent of around US\$11 million, while expenditures for ICT hardware and software were approximately US\$551,000. The Sub-Directorate of Patents and the Sub-Directorate of Trademarks are the most prominent units, providing technical, legal and administrative resources for patent and trademark review and registration, as well as support for patent/trademark applicants. INAPI also includes a Division of Development, under which there is an ICT unit. There is also a separate unit responsible for electronic documentation and digital imagery.

The Annual Report notes that considerable progress was made during 2010 in terms of consolidating the operations of the agency and improving the quality and timeliness of services to the public. For example, in the trademark area, processing time was reduced by more than 20% on average, while for patents the backlog of requests was reduced by 19%. The Annual Report also notes the increased activity of the Sub-Direction for Knowledge Transfer, in terms of making available, via the agency's Web site, extensive information on patents utilizing technology in the public domain, with the aim of facilitating access on the part of Chilean entrepreneurs to such information.

Summary of DM In-Country Activities

Prior to the in-country portion of the DM, INAPI furnished the DM Contractor with several documents related to projects which the agency wished to propose for USTDA support. Briefly, these projects concerned 1) a redesign of INAPI's Web portal, and 2) a Customer Relationship Management / Workflow Management (CRM/WM) system which was being proposed to INAPI by a local Chilean consultancy, CMetrix. INAPI also provided estimates for the cost of implementation of these two projects: US\$75,000 and US\$58,124 respectively. On this basis, the DM Contractor judged that neither of these two projects was likely to meet USTDA's export-potential criteria; furthermore, the size of the agency's total budget and level of ICT-related expenditures in 2010 suggested that any projects proposed by INAPI agency would likely be problematic in this respect.

In the initial in-country meeting, INAPI staff proposed what was essentially an expanded version of the CRM/WM project, namely assistance with planning and implementation of a so-called Enterprise Resource Planning (ERP) system. An ERP system is a comprehensive hardware/software package that integrates management information across an entire organization, typically encompassing finance/accounting, human resources, customer relationship management, workflow, and business processes generally, typically with the objective of facilitating information flows between and among business functions inside the boundaries of the organization, as well as across the interfaces to outside organizations, stakeholders and customers.

After extensive review and discussion, the DM Contractor judged that the proposed ERP project could not be recommended for USTDA support, for two main reasons: 1) the cost of its procurement and implementation would greatly exceed INAPI's available budgetary resources; 2) successful deployment of ERP systems requires extensive preparation, particularly as regards workflow analysis and business process evaluation and re-engineering, and it was apparent that INAPI had yet to address this requirement. Further details are given in Section III, along with information on other initiatives that were not recommended for USTDA support.

* * *

The remainder of this report describes the project opportunity which the DM Contractor recommends for USTDA support, namely a Technical Assistance (TA) to Subtel in the area of planning and procurement of a National Emergency Backbone Network (NEBN), a key element in the strategy of the GOC for improving national emergency/disaster response preparedness.

SECTION II

PROPOSED TECHNICAL ASSISTANCE ON BEHALF OF THE SUBSECRETARÍA DE TELECOMUNICACIONES (SUBTEL) IN SUPPORT OF THE NATIONAL EMERGENCY BACKBONE NETWORK (NEBN) PROJECT

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A. EXECUTIVE SUMMARY

In the course of the in-country portion of the DM (25 August to 2 September 2011), a series of meetings was conducted with representatives of the Subsecretaría de Telecomunicaciones (Subtel), the GOC agency that is tasked with oversight over the telecommunications and ICT sectors. Subtel is seeking assistance with one particular high-priority project, namely the National Emergency Backbone Network Project (henceforth the “NEBN Project”). The NEBN Project is an important component of the efforts of the GOC, on a variety of fronts, to enhance national emergency/disaster response capabilities in the wake of the severe earthquake and tsunami that struck the country in February 2010. The objective of the project is to create a nationwide backbone networking facility that is highly robust and redundant, and capable of uninterrupted and undegraded operation under a wide range of emergency and disaster scenarios. In addition, by incorporating a variety of interfaces and gateway devices, the NEBN would enable the currently disparate systems of various public-safety organizations to interoperate, thus enhancing their ability to mount timely and coordinated responses to emergency/disaster situations. The new facility, together with the concomitant unification, standardization and streamlining of the underlying systems, hardware and software, is expected to yield a number of other benefits, in particular the following:

- More effective coordination among agencies responsible for emergency and disaster response
- More effective and better-targeted response to emergencies and disasters
- More efficient utilization of resources, equipment and personnel
- Rationalization of current voice/data/video/messaging networking systems and associated procedures
- Increased flexibility to accommodate future growth and expansion
- Improved security

The principal beneficiary of the NEBN Project will be the GOC agency responsible for civil protection and for coordination of emergency/disaster relief efforts. That agency is currently the National Emergency Office (Oficina Nacional de Emergencia, ONEMI), but is expected to transition to a newly created body, the National Civil Protection Agency (Agencia Nacional de Protección Civil, ANPC), with increased powers and a broader mandate.

Subtel has been tasked by the GOC with providing expert assistance to the country’s civil protection agency (irrespective of whether that agency is ONEMI or ANPC) in the planning and procurement of the NEBN. It is anticipated that the NEBN will be created and put into operation through an international tender process, as mandated under Chilean law. While Subtel, as the telecommunications sector regulator, has considerable technical, economic and legal expertise at its disposal, it has not previously undertaken a network planning/implementation project of this magnitude, complexity or criticality, and is seeking outside assistance with its planning and execution. The proposed Technical Assistance is aimed at providing Subtel with the expertise and support it requires to plan and execute this high-priority, “mission-critical” project.

The DM Contractor believes that the proposed TA is justified on the basis of its central importance to Chile’s need for robust and effective national emergency/disaster response

capabilities, and attendant potential for broad positive developmental impacts. In particular, it will enhance the capability of Chilean public-safety organizations to respond in a vigorous, timely and coordinated fashion to a range of emergency and disaster situations to which the country is prone, thus improving the security of the citizenry at large. The NEBN Project also offers strong opportunities for participation of U.S.-based suppliers of systems, equipment and services. Given the fact that the NEBN Project is still in the planning stages, and that the choice of technology or technologies for its implementation is not known (and cannot be known) at this stage, its U.S. export potential is difficult if not impossible to calculate directly, but can be approximated on the basis of expert estimates from and also from “benchmarking” against similar initiatives in comparable environments. Based on these sources, the export potential is believed to be on the order of US\$42 million, and there is reason to believe that this figure is conservative.

A further consideration is that, as a large-scale, high-priority and high-visibility initiative, the NEBN Project is virtually certain to attract the attention of foreign competition; a USTDA-funded TA will enhance the prospects for U.S. participation.

Accordingly, the DM Contractor believes that the proposed TA on behalf of Subtel represents a good use of USTDA resources, and makes a recommendation that it be funded under the conditions set forth in the accompanying Terms of Reference.

B. PROJECT DESCRIPTION

1. Background

In the course of the in-country portion of the DM (25 August to 2 September 2011), a series of meetings was conducted with representatives of the Subsecretaría de Telecomunicaciones (Subtel). Subtel is seeking assistance with one particular high-priority and high-visibility project, namely the planning and execution of a National Emergency Backbone Network (NEBN). The objective is to provide a common communications transport facility that would ensure uninterrupted and undegraded operation under a wide range of emergency and disaster scenarios, while at the same time enabling interconnection and interoperability of existing and future emergency communications networks, thus providing a unified platform that would overcome the limitations of today's patchwork of emergency communications services. The NEBN, together with the concomitant unification and standardization of the component networks, is expected to yield a number of other benefits, in particular the following:

- More effective coordination among agencies responsible for emergency and disaster response
- More effective and better-targeted response to emergencies and disasters
- More efficient utilization of resources, equipment and personnel
- Rationalization of current voice/data/video/messaging networking systems and associated procedures
- Increased flexibility to accommodate future growth, expansion and reconfiguration
- Improved security

Planning and execution of the NEBN Project has been entrusted to Subtel. Subtel has identified overall objectives for the NEBN, as well as a general framework for a high-level framework for project phasing and timing. However, Subtel has not previously been directly involved in network planning and design initiatives, nor has it undertaken a project of this magnitude, complexity or criticality, and is seeking outside assistance with its planning and execution.

Additional information on Subtel and on the NEBN Project follows.

2. Subtel Organization and Activities

Overview

A brief overview of Subtel's primary role and functions was given in Section I of this report. As noted there, Subtel was originally established in 1977, as an entity subordinate to the Ministry of Transport and Telecommunications, although under the Pinochet administration (i.e., until 1990) its role was more symbolic than real. Nonetheless, in the 1990s Subtel oversaw the general opening of the Chilean market to competition, and also played a key role in initiatives such as the establishment and implementation of the Telecommunications Development Fund (Fondo de Desarrollo de las Telecomunicaciones, FDT).

Administratively, Subtel consists of six major divisions specializing in various aspects of the telecom and ICT sectors, namely:

- Administration and Finance (Administración y Finanzas) (Division Head: Mr. Claudio Sabat)
- Regulatory Policy and Studies (Política Regulatoria y Estudios) (Division Head: Ms. Geraldine González)
- Legal (Jurídica) (Division Head: Mr. Roberto Von Bennewitz)
- Concessions (Concesiones) (Division Head: Mr. Eduardo Charme)
- Oversight (Fiscalización) (Division Head: Mr. Jorge Molina)
- Management of Telecommunications Development Fund (Gerencia del Fondo de Desarrollo de las Telecomunicaciones) (Division Head: Mr. Juan Luis Núñez)

As noted in Section I, in the wake of the February 2010 earthquake and tsunami the GOC made provision for the creation of a National Emergency and Civil Protection System, and furthermore, for Subtel to provide expert support to the national civil-protection agency in planning and implementing the corresponding network infrastructure. However, network planning and implementation lie outside the scope of Subtel's primary responsibilities, and require engagement of expertise and experience beyond that typically embodied in the staff of a telecommunications sector regulator.

3. Emergency and Disaster Situations in Chile

General

By virtue of its geographic location at an active boundary of two major tectonic formations (the Nazca and South American plates), Chile is particularly prone to earthquakes and volcanic eruptions. Furthermore, its more than 4,000 miles of coastline include several major cities (Arica, Iquique, Antofagasta, Valparaíso and Constitución, among others), as well as a large number of smaller urban centers, that are vulnerable to tsunamis generated by seismic events both inside and outside the country.

The Valdivia earthquake of 1960 – at magnitude 9.5 the strongest instrumentally recorded event in human history – caused over 2,000 deaths and untold millions in property damage, and generated a tsunami that added significantly to the local destruction and reached as far as Hawaii and Japan. Other major seismic events in recent history include the Antofagasta quakes of 2007 and 1995; the Tarapacá quake of 2005; and the Arica quake of 2001.

Volcanic eruptions are also fairly common in Chile. Some 500 volcanoes are considered to be geologically active, and some 60 are known to have erupted within historical times. At least half of these are regarded as sufficient threats to life and property that they are kept under constant surveillance by the Observatorio Vulcanológico de los Andes del Sur (Vulcanological Observatory of the Southern Andes, OVDAS), a unit of the Servicio Nacional de Geología y Minería (National Geological and Mining Service). A major volcanic event, known as the Puyehue eruption, began in the Puyehue-Cordón Caulle volcanic complex in the Los Lagos Region in June 2011. At least 3,500 people needed to be evacuated from nearby areas; the resultant ash cloud dispersed all around the Southern Hemisphere and disrupted air travel in

several countries. Other recent volcanic events include the Volcán Chaitén eruption of 2008, which required evacuation of the town of Chaitén and the surrounding area; the Volcán Llaima eruption in 2000; and several severe eruptions of Volcán Villarica since the mid-20th century, each of which resulted in extensive damage and loss of life.

Finally, mention should be made of two other types of disasters – generally of human origin – to which Chile is prone: wildfires and forest fires (about 45% of the continental land area of Chile is susceptible to such events, and much of Chile’s forest cover lies in inaccessible areas); and mining disasters, of which the 2010 Copiapó accident and subsequent successful rescue of 33 trapped miners is perhaps the best known (mining accidents are highly localized, but at the same time require a vigorous, timely and coordinated response if human lives are at stake).

However, the disaster most relevant to the present circumstances is the earthquake of February 27, 2010. For this reason, it is discussed in greater detail below.

The Earthquake of February 2010 and Its Consequences

Background

The so-called mainshock of the earthquake, with an estimated magnitude of 8.8, struck at around 3:30 AM local time on February 27, 2010. According to the Servicio Sismológico de Chile (Seismological Service of Chile), the epicenter lay some 12.5 km off the coast, opposite the village of Cobquecura in the Biobío Region (Region VIII). In that region, as well as in parts of the adjacent Maule Region (Region VII), the intensity of the earthquake was ruinous; however, the destructive effects extended to large areas of the country, including metropolitan Santiago and much of Regions V, VI and IX (Valparaíso, O’Higgins and Araucanía). The quake left an estimated 2 million homeless, more than 10% of the country’s inhabitants.

The effects of the mainshock were aggravated by an ongoing series of aftershocks. More than 100, some of considerable intensity, occurred within 24 hours of the mainshock, and a number of others were experienced over the ensuing days and weeks. Many structures that had been damaged by the main quake collapsed entirely as a result. Furthermore, some of these events resulted in the generation of tsunami alerts; although no tsunamis of consequence occurred after the one triggered by the main event (see below), chaos and mass hysteria spread among the inhabitants of the large coastal cities of La Serena, Coquimbo, Valparaíso and Viña del Mar.

On March 11, nearly two weeks after the mainshock, another major earthquake – ostensibly an independent event, but presumably triggered in some way by the previous one – struck central Chile, affecting virtually the same area that had already been ravaged. The magnitude of the second earthquake was estimated at 6.9. In turn, it was followed by more than a dozen aftershocks with magnitudes greater than 5.0. Moreover, it provoked a further tsunami alert for the coastal areas lying between Regions IV and X – well over a thousand miles of coastline – adding to the sense of panic among the affected inhabitants.

Because the epicenter of the mainshock lay under the surface of the sea and in close proximity to the coast, it was capable of generating a tsunami that arrived before most people could be alerted, or emergency evacuation measures undertaken. Within a few minutes, the initial mass of water struck the Chilean coast, in the Maule and Biobío regions. In the major city of Constitución, the first tsunami wave, over 8 meters high, arrived about half an hour after the mainshock, followed a few minutes later by a stronger second wave of about 10 meters and finally a third, similar to the first. In the port of Talcahuano, waves up to 5 meters high flooded much of the city, while at Valparaíso the sea level rose by nearly 2 meters. The outlying Chilean islands, including the Juan Fernández archipelago and Isla Robinson Crusoe, were particularly hard hit.

An immediate consequence of the earthquake was a general blackout across the so-called Sistema Interconectado Central (Central Interconnected System), the main AC power grid in Chile, which accounts for over 68% of the installed generating capacity in Chile and serves around 93% of the population. Within 24 hours of the disaster, power had been restored to about 80% of the Metropolitan Santiago and Valparaíso Regions, but for the O'Higgins Region the corresponding figure was between 40% and 50%, while parts of the Maule and Biobío Regions remained without power for an extended period. Moreover, local distribution systems were particularly hard hit, due to collapse of towers and poles, rupture of cables, and various incidents at substations. Frequently, lack of electricity created a kind of “domino effect,” for example, cutting off the supply of drinking water in places where electric pumps were required.

Impact on Telecommunications Infrastructure and Services

Telecommunications infrastructures experienced some damage as a result of the earthquake and tsunami – for example, some bridges carrying fiber-optic cables across rivers and other natural obstacles collapsed – but the level of damage sustained by these infrastructures did not constitute the most salient problem. In the immediate aftermath of the earthquake, the most severe problem affecting telecommunications services in general, and telephony in particular, was blockage due to congestion, which severely degraded the performance of both fixed-line and mobile commercial networks. For example, in the first several hours, the volume of telephone traffic between Regions V and VIII peaked at around three times the level typically experienced on New Year's Eve (blockage levels could not be recorded with exactitude, but it was estimated that at times up to 90% of all phones were attempting to make calls).

In general, once this initial “crisis phase” had passed, fixed-line service recovered a semblance of normality relatively quickly. Mobile service, on the other hand, was often impacted by the “domino effect” referred to above – many mobile base stations that had lost primary mains power initially continued to function with backup generators, only to fail several hours later when their generators ran out of fuel and could not be resupplied, either because of disruptions to the fuel-delivery system or damage to the access roads. Thus, for example, five days after the event, only 25% of mobile subscribers in Region VIII had service, while in Biobío, a week afterward, the figure was 58%. Moreover, further disruptions, particularly of mobile service, occurred in the wake of the March 11 earthquake and its aftershocks. The GOC was obliged to establish a number of temporary communications centers, particularly in Regions VII and VIII,

to serve people who were deprived of service for an extended period; in addition, the major fixed-line and mobile operators offered free or discounted services and other benefits.

Somewhat surprisingly, domestic Internet service, particularly mobile Internet access, experienced relatively little disruption during the early hours of the earthquake, beyond that caused by loss of electric power. Damage to several data centers rendered a number of domestic Web sites inoperative, sometimes for a period of several days. However, international connectivity was significantly curtailed, such that Chile was virtually incommunicado with the outside world. Subsequent studies indicated that the earthquake reduced Chile's accessibility from the outside by nearly 70%.

Effects and Economic Impact

Overall, the effects of the earthquake were devastating. Some towns, particularly in the Maule and Biobío Regions, were completely flattened. Early estimates indicated that 500,000 homes had been destroyed, while another 1,500,000 had suffered some degree of damage. Tallies of the number of fatalities fluctuated considerably as various government agencies sought to re-establish communications, rising to 799 a week after the event, but subsequently adjusted downward to an official estimate of 525.

The GOC released estimates of the attendant economic impact shortly after the event. In dollar terms, the overall impact was reckoned at US\$30 billion – around 15% of the country's annual GDP. The total was allocated roughly as follows: US\$20 billion for rebuilding the half-million most affected homes; US\$5 billion for repair of roads, bridges and similar infrastructures (a total of some 1,200 individual infrastructure items); and, finally, another US\$5 billion for reconstruction of hospitals and public-health facilities.

Problems of Coordination and Communication

In Chile, primary responsibility for coordination and execution of emergency/disaster response activities is entrusted to the Oficina Nacional de Emergencia (National Emergency Office, ONEMI) under the Ministry of the Interior. ONEMI's actions in the wake of the February 2010 earthquake came under severe criticism, for a variety of reasons. In the first place, there were accusations that ONEMI had been negligent in disseminating information on the tsunami hazard following the quake, or at least had contributed to a breakdown in coordination with other Chilean government entities and with the Office of the President. A further charge leveled against ONEMI was that its communications infrastructure and systems were deficient and/or unprepared; a widely cited example was the fact that in 2008 ONEMI had acquired a number of satellite communications devices, which could have provided "last-resort" emergency backup for failed terrestrial services, but had not gotten around to inventorying them, let alone putting them into service.

A more general criticism of ONEMI was that it was unprepared for the breakdown in commercial communications services which the earthquake occasioned, and had not developed a comprehensive emergency communications plan that would marshal and coordinate available

public-safety network and communications resources in such an eventuality. A number of Chilean public-sector entities (police/fire/ambulance services, marine rescue operations, various ministries and municipal governments, etc.) have communications networks, some of them quite extensive, but in the aftermath of the earthquake it was found that they had little ability to interoperate, thus making it difficult or impossible for the various entities to mount a coordinated response.

Further Developments

The criticism of ONEMI eventually led to the resignation of the agency's director and to moves on the part of the GOC, in February 2011, to replace it with a successor agency, named the National Civil Protection Agency (Agencia Nacional de Protección Civil, ANPC), to be modeled on worldwide best practices, and with an improved institutional framework, expanded mandate, and access to greater resources. In announcing the creation of the new agency, President Sebastián Piñera stated that "... the institutions that should have informed and protected our population in a timely manner were not up to the situation. They were blind, uninformed and uncoordinated, and did not meet their responsibilities when the country most needed them." He went on to state that the new agency "will react in timely fashion and not when it is already too late"; that it "will be alert and always prepared"; and, finally, that it "will be efficient, so as to carry out its work of prevention, warning, protection and assistance to the population in the face of natural catastrophes, regarding which we do not know where or when they may strike."

At the same time, a number of additional measures aimed at strengthening emergency and disaster preparedness were announced, in particular the following:

- Formation of a National Civil Protection Council (Consejo Nacional de Protección Civil, CNPC), to provide expert assistance to the Ministry of the Interior in developing a National Civil Protection Strategy

- Establishment of a National Civil Protection Fund (Fondo Nacional de Protección Civil, FNPC), to finance initiatives that contribute to disaster risk reduction and enhance emergency preparation

- A new Early Warning System (Sistema de Alerta Temprana, SAT), already under development by ONEMI, responsible for monitoring risk scenarios both within and outside the country and for developing and declaring emergency alarms and for disseminating the necessary information to the affected population and to the pertinent authorities.

Role of Subtel in the NEBN Project

As already noted, provision was also made for Subtel to provide expert support to the civil-protection agency in planning and implementing the corresponding NEBN infrastructure.⁴ As of this writing, however, the new agency ANPC is not yet operational, so that for the time being the agency that Subtel is tasked with supporting is ONEMI. It is assumed that the NEBN Project will be transitioned over smoothly to ANPC at the appropriate time.⁵

⁴ The general institutional framework for the measures described is laid out in *Circular No. 12* of the GOC, dated 13 January 2011.

⁵ Accordingly, references to ONEMI in what follows should be understood to mean either ONEMI or its successor

Meanwhile, a number of aspects of the NEBN Project have been elaborated. In particular, Subtel envisages that the project will be structured as an international tender process, in which bidders will be invited to propose “turnkey” solutions. It is also envisaged that bidders will be requested to conform to a “Build-Own-Operate” (BOO) scheme, i.e., the NEBN would be constructed and operated essentially as a (presumably exclusive) concession, at least for some initial period of time.

Moreover, Subtel envisages that the NEBN Project will be implemented in two phases. The first phase will involve planning and procurement of the backbone network facility proper – including, presumably, the interfaces and gateway devices that will make it operational for at least the majority of its users – while the second phase will cover the acquisition of additional equipment. This second phase is only loosely defined at present, but presumably will involve procurement of upgrades to existing systems and/or replacement of legacy systems which cannot be brought into compatibility with the NEBN interfaces and protocols. The proposed Technical Assistance will extend only to the first phase, because this phase is by far the more complex and demanding in terms of the expertise required, and the more critical in terms of the need to “get it right.” Furthermore, the precise extent and requirements of the second phase will become evident only once the initial phase has been successfully carried out.

Additionally, the major NEBN participant organizations have been identified; briefly, they can be enumerated as follows:

- Subsecretaría de Telecomunicaciones (Subtel)
- Oficina Nacional de Emergencia (National Emergency Office, ONEMI) and/or its successor agency Agencia Nacional de Protección Civil (National Civil Protection Agency, ANPC) (see above for further details)
- Bomberos de Chile (National Firefighting Service)
- Sistema de Atención Médica de Urgencia (National Ambulance Service, SAMU)
- Ministerio de Obras Públicas (Ministry of Public Works, MOP)
- Ministerio de Salud Pública (Ministry of Public Health)
- Gobiernos Regionales (the governments of Chile’s 15 regions, each headed by an Intendente (governor) and a body known as the Consejo Regional (regional council))

and other relevant GOC agencies.

C. DEVELOPMENTAL IMPACT

Primary Developmental Benefits

Given that the NEBN Project involves virtually every Chilean public-sector entity that is engaged in some way with emergency and disaster response, and the manner in which these

ANPC.

entities interact with and deliver services to the citizenry, the anticipated developmental impact is exceptionally broad. The backbone network facility that will be put in place as a result of the Project will allow these entities to share resources and coordinate processes and activities more efficiently, and to ensure a more coordinated, timely and robust response to natural or man-made emergencies and disasters.

Particular developmental benefits can be enumerated as follows:

Infrastructure: Creation of new and more robust, flexible and efficient ICT infrastructure is a fundamental aspect of the NEBN Project. It is also anticipated that this ICT infrastructure will embody newer, higher-performance and more cost-effective solutions. In principle, the unified ICT infrastructure that results from the NEBN Project should eliminate the current problems associated with the disparate, physically separate and non-interoperable communications platforms used by the various emergency/disaster response agencies. Depending on the manner in which it is implemented, moreover, the NEBN Project may entail some secondary infrastructure benefits, such as consolidation of redundant facilities and, possibly, freeing up of scarce spectrum resources (to the extent that various wireless platforms are consolidated and/or migrated to “fixed-line” transmission systems).

Human Capacity Building: In terms of the number of people involved, the initial direct capacity-building impact of the proposed TA will probably be confined to the staffs of Subtel and ONEMI – as best as can be currently estimated, perhaps 50 people would be directly affected. Less directly and longer term, the NEBN can be expected to act as an “enabling platform” for improving communication and coordination among the participating agencies, and for streamlining and re-engineering a range of existing institutional processes, with positive human capacity-building effects.

Technology Transfer: Overall, the Chilean ICT environment is already relatively sophisticated, and the NEBN Project is primarily an exercise in consolidation and rationalization of existing technology and platforms, rather than deployment of entirely new ones. Whatever the technological details of its implementation, in all likelihood the ICT infrastructure that is deployed at in conjunction with the Consolidation Project, while being state-of-the-art, will at the same time be in general use elsewhere in the world. It appears that the principal benefits that will accrue will be in the areas of increased efficiency, reliability and flexibility of service delivery, as well as reduced costs of operation, on the one hand, and greater ease of access to and use of municipal services on the part of the citizenry.

Market Oriented Reforms: As a technical intervention on behalf of a number of public-sector institutions in Chile, the proposed TA is not expected to contribute significantly to market-oriented reform in the customary sense. At the same time, in addition to yielding the other developmental benefits enumerated above, the NEBN Project could be construed as productive of such reform if the concept of “market-oriented reforms” is viewed as including more efficient and effective delivery of services to the citizenry, as well as enhanced responsiveness and efficiency of the public sector.

D. PROJECT SPONSOR’S CAPABILITY AND COMMITMENT

The strong commitment of the GOC to a thorough overhaul of the institutional framework for emergency communications in Chile is not in doubt, as is evidenced by the remarks by President Piñera quoted above. This revamping of the emergency communications framework, in turn,

presupposes a commitment to creating the physical infrastructure that will enable greater integration and interoperability of the disparate networks currently maintained by various emergency/disaster response services.

As the Chilean public-sector entity charged with oversight of the telecommunications sector, Subtel has a staff of professionals who deal with technical, economic and legal aspects of telecommunications. At the same time, its mandate to provide expert support to ONEMI or its successor agency with respect to the NEBN Project in effect requires Subtel to deal with matters which are generally not within the scope of competence of the sector regulator. In particular, sector regulators seldom, if ever, become directly involved in the technical aspects of backbone network planning and design, or the implementational details of interoperability – such matters are typically the responsibility of operators themselves, the regulator’s role being confined to one of ascertaining that applicable parameters, norms and standards are observed. Furthermore, it is unusual for a regulator to become engaged in a tender process whose object is the procurement of telecommunications infrastructure. Thus, where Subtel requires outside assistance – and this is the area which the proposed Technical Assistance addresses – is with the planning and execution of the Request for Proposal (RFP) for the NEBN. Furthermore, Subtel has not previously overseen a procurement of this magnitude, complexity or criticality, which requires careful planning and structuring, including the weighing of various options and alternatives and assessment of upside advantages and downside risks. In the DM Contractor’s judgment, the prospects for a successful outcome of the procurement process will be significantly enhanced if Subtel can draw upon the expertise and experience of a U.S.-based firm that is suitably qualified to provide the proposed Technical Assistance.

E. IMPLEMENTATION FINANCING

As previously indicated, the NEBN Project is a top priority for the GOC, and has support at the highest levels of government. In effect, the GOC has already mandated that the NEBN Project will go forward.

Subtel has indicated to the DM Contractor that the necessary provisions have been made in the 2012 state budget.

F. US EXPORT POTENTIAL

Methodology of Estimation of Export Potential

In other situations involving estimation of the U.S. export potential of ICT-related projects, it is possible to arrive at a “bottom-up” estimate of the project hardware/ software/other requirements (by tallying the number of multiplexers, routers, switches, servers, storage devices, etc.; the approximate number of “seats” for estimating software licenses; and so forth), and in turn to use such a calculation to estimate the U.S. export potential. In the present case, there is simply no way to do this, in large part because the specific technology platforms to be employed in the

NEBN are not known, and indeed cannot be known at this stage. Subtel is committed to a “technology-neutral” approach, and indeed is required to employ such an approach under its legal mandate. Accordingly, the criteria that are specified for the NEBN will be functional in nature – e.g., such-and-such coverage, such-and-such capacity or bandwidth, such-and-such availability/uptime, and so forth. How these criteria will be implemented in practice will be left to the bidders; all that can be said at this time is that the proposed solutions are expected to be based on fixed-line, wireless, or satellite technologies (or, probably, some combination of them). There is no way of determining at this time which of these technologies, or combinations, will actually be deployed; even if the choice of technology was known, furthermore, it would be difficult or impossible to envisage the resultant network configuration with an accuracy sufficient for cost-estimation purposes.

As a result, there are only two available avenues for estimating the cost of the NEBN project (and, in turn, the U.S. export potential): 1) “expert estimates” obtained from knowledgeable people (in particular, from potential bidders who have already attempted to quantify the sales opportunity inherent in the NEBN Project); 2) benchmarks derived from comparable initiatives elsewhere in the world.

Expert Estimates

The DM Contractor identified several representatives of U.S.-based companies with an interest in the NEBN Project who were sufficiently knowledgeable to have made, or to make, informed estimates of the project’s anticipated capital cost. Three of these representatives were willing to provide estimates, under the condition that neither the source of the information nor their company affiliation would be disclosed publicly. These estimates, reflecting the perceived total value of the NEBN Project, ranged from US\$50 million to US\$150 million.

Benchmarks

Absent other sources of information, benchmarks may offer the best available option, if there is reason to suppose that the resultant cost estimates are reliable. However, such is not the case in the present situation. The NEBN will obviously be adapted to, and optimized for, Chile’s particular geography, existing infrastructure, population distribution, and susceptibility to various types of natural and man-made hazards, among other factors. In many other instances in which cost data or estimates for emergency communications infrastructure are provided, furthermore, it is not possible to derive breakdowns into major cost elements such as construction of new infrastructure, upgrading of existing systems, implementation of interoperability, etc. Accordingly, any benchmark comparisons that are made should be considered as “sanity checks” on, or very general corroboration of, the expert estimates discussed above.

That said, several pertinent cost benchmarks can be offered:

Israel: In 2009, Motorola offered a proposal to Israel’s Ministry of Communications for a national emergency communications network employing a wireless (WiMAX) platform, intended primarily but not exclusively for use by the security services. Reportedly, the cost was estimated at US\$100 million, although the figure is not final and could be negotiated

downward should the project go forward. Israel's population is less than half that of Chile, while its land area is much smaller, so a smaller cost figure would be expected; on the other hand, the initiative involves extensive construction of new infrastructure, and the stringent requirements on access, authentication, encryption, etc., that are typically imposed under such circumstances probably inflate the total cost substantially.

United States: The spectrum auctions (of the so-called D Block of frequencies) that were conducted in 2008 offer a general parallel to Chile's NEBN implementational framework, in that the Federal Communications Commission (FCC) intended that the winning bidder would construct a national emergency-communications network that would ensure that police, fire and other first-responder systems can adequately interoperate. The FCC estimated the cost of building the new network at US\$6.7 billion, or roughly US\$21 per inhabitant. If that figure is applied to the population of Chile, the resultant cost would be in excess of US\$350 million. This relatively high figure is probably due to the fact that the institutional structure of emergency/disaster response in the U.S., with multiple actors at the federal, state and local levels, is much more complex than in Chile, and the challenges of achieving interoperability are correspondingly greater.

State of Mississippi: Following Hurricane Katrina in 2005, emergency communications systems in the state were almost completely disabled. Local and outside emergency responders who rushed to the affected areas discovered that they were unable to communicate over incompatible local communications systems. The response to this situation has been the creation of the Mississippi Wireless Interoperability Network, budgeted at US\$177 million, although it is not clear if all of the allocated funds were actually spent. Again this figure appears relatively high in relation to Chile, given that Mississippi has less than one-fifth the population of Chile and a much smaller land area. Like the Israeli case, however, the initiative involves extensive construction of new infrastructure.

While all of these benchmarks are problematic in some respects, taken collectively they suggest that, if anything, the cost estimates of US\$50-150 million that have been put forth for the NEBN are conservative. Therefore, the DM Contractor believes that the median of the expert estimates, i.e., an estimated capital cost of US\$100 million, is both reasonable and defensible.

Estimation of U.S. Export Potential

The above exercise yields an estimate for the capital cost of the NEBN Project, but does not directly shed light on the U.S. export potential. Here a separate analysis is needed. However, such an analysis immediately runs into difficulties, as a result of the fact that the elements of the NEBN are currently conceptualized only at a very high level. In other situations, as previously noted, it might be possible to perform a "bottom-up" cost analysis. In the present situation, there is simply no way to perform such an exercise, since the technology platforms to be employed, as well as the number, size, configuration, etc., of their components, are entirely unknown at this stage.

Furthermore, given the complex nature of the NEBN Project, the actual implementation is not likely to be carried out directly by the suppliers of the various systems and components, but rather by one (or possibly more than one) lead contractor acting in the role of system integrator. (Just to take an example, one participating supplier might be responsible for terrestrial

transmission systems, another for satellite systems, and a third for the gateways required to effect interoperability.) In turn, the lead contractor can be expected to engage, on a sub-contractor basis, those suppliers who are assumed to be best qualified to provide and implement the various sub-systems. If the lead contractor is a U.S.-based firm, the likelihood increases that the suppliers will be U.S. firms; conversely, if the lead contractor is a foreign company, the participation of U.S. sub-contractors will probably (but not necessarily) be lower. Although this scenario can be described in general terms, its actual impact on U.S. export potential is impossible to quantify.

The lead contractor / system integrator will necessarily be chosen via a competitive tender process, as indicated previously. We will proceed under the assumption that a U.S.-based firm is in fact selected, partly in view of the fact that several such firms are strong contenders to assume the role, and partly in view of the fact that, should the result of the tender prove otherwise, even rough order-of-magnitude estimates would not be possible. However, some further assumptions are required. It will be recalled that the NEBN Project is divided into two phases, namely 1) procurement of the backbone network facility, interfaces and gateways, and 2) procurement of additional devices and equipment, and that the proposed TA concerns only the first phase. The cost of each phase is to some degree dependent on the technology platform or platforms which are employed, and hence cannot be determined at this stage even if the US\$100 million figure for the total project cost is assumed to be entirely accurate. In all cases, however, the cost of the backbone component will almost certainly exceed that of the devices and equipment, probably by a significant margin. If we assume that the respective costs are split 75%/25%, as would be generally typical of large-scale backbone networking projects, then the cost of the backbone component can be estimated at US\$75 million.

However, the US\$75 million figure should be adjusted to allow for two factors. The first is that some proportion of the backbone component cost will be spent on what are generally referred to as “civil works” (laying cable, erecting antenna towers, or whatever activities are required to install the required infrastructure). Again this factor cannot be known in advance with any certainty; on the basis of data from similar projects, however, it is reasonable to suppose that civil works will account for around 30% of the total cost. That being the case, the figure of US\$75 million should be adjusted downward to US\$52.5 million.

The second factor to consider is that equipment supplied by U.S.-based firms is not necessarily sourced directly from the U.S. For example, information supplied by Cisco indicates that, when equipment such as multiplexers and routers is sourced from outside the U.S., manufacturing costs typically represent about 35% of the total cost of the equipment. In the opinion of the DM Contractor, it is reasonable to characterize the remaining 65% of the cost as representing the “U.S. content” of the equipment in question. If the 65% figure is assumed to be representative of the U.S. content of ICT systems and equipment in general, then the U.S. export potential can be estimated at (\$52.5 million x .65), or approximately US\$34.125 million. However, this figure in effect represents a “worst-case” estimate, since it excludes any exports that will result from the ensuing procurement of devices and equipment in the second phase. Since the second phase will necessarily be carried out if the first phase is successfully implemented, it seems reasonable to include it for purposes of export estimation. Given the current lack of specifics, only a rough

estimation is possible in this case; we will assume that 1) devices and equipment sourced from the U.S. content account for 50% of the total procurements in the second phase, and 2) as before, the real U.S. content of the systems and equipment is 65%. Under these assumptions, the export potential of the second phase can be estimated as (US\$25 million x .50 x .65) = US\$8.125 million.

Summing up all the above estimates, we obtain a figure of US\$42.25 million (see the table below), or US\$42 million in round numbers.

Project Phase	Estimated Total Cost	Estimated Adjusted Value	Estimated Value of U.S. Content
Phase 1 (Backbone)	US\$75,000,000		
Minus cost of civil works (30%)		US\$52,500,000	
Minus allowance for “non-U.S. content factor” (35% of previous)		US\$34,125,000	\$34,125,000
Phase 2 (Devices and Equipment)	US\$25,000,000		
Minus allowance for non-U.S. sourcing (50% of total)		US\$12,500,000	
Minus allowance for “non-U.S. content factor” (35% of previous)		US\$8,125,000	\$8,125,000
		Total	\$42,250,000

G. FOREIGN COMPETITION

An initiative of the size, scope and visibility of the NEBN Project will inevitably attract strong competition. (Indeed, a source inside Subtel reported that so many companies have expressed interest in the project that the agency has been obliged to ration the time available for meetings with their representatives.) At the same time, only a relatively small number of “industry giants” with extensive international capabilities and track record of implementing large-scale ICT projects are capable of undertaking projects on the scale of the NEBN Project. In particular, a number of Asian and European companies have such capabilities.

Mention should first be made of the close cooperation that exists between Chile and Japan in areas related to emergency/disaster communications, in particular the fact that Chile intends to implement a mass early-warning system modeled on the one currently in use in Japan. In its first phase, the system will issue “blast” warning messages to all mobile phones within a given area deemed to be at risk. In a later second phase, the same capability will be extended to over-the-air digital TV broadcasting. Here Japanese involvement will be facilitated by the fact that Chile has adopted the ISDB-T digital TV standard, which is of Japanese origin. While these initiatives are not directly pertinent to the choice of supplier for the NEBN, they establish a presence for Japanese firms in the Chilean emergency-communications sector. The fact that Japan is also susceptible to earthquakes and tsunamis, as well as the fact that, notwithstanding the devastating effects of the earthquake/tsunami of March 2011, the emergency communications networks of

the country generally performed well, may also lend Japanese firms a certain credibility.

Aside from Japan, foreign competition in the case of the NEBN Project is most likely to come from two sources. The first source is represented by major Asian and European ICT providers, which may include the government-affairs or security-related arms of large national or multinational telecom operators. For example, Telefónica, the incumbent operator in Spain, has been active in a number of initiatives related to emergency/disaster communications, for example in the Canary Islands, whose territory is susceptible to both volcanic eruptions and earthquakes. Furthermore, with its extensive presence and existing nationwide infrastructure in Chile (see Section I of this report), Telefónica is virtually certain to seek a major role in the NEBN Project. The second source is comprised of major foreign System Integrators or the corresponding divisions of large ICT firms such as Siemens (Germany) or Selex, a subsidiary of Italy's giant Finmeccanica Group. Selex, in particular, has undertaken a number of large emergency-communications projects, notably in Russia and in the Lombardy region of Italy. Orange Business Services (a France Télécom subsidiary) is also a strong player in Chile and the South American region.

Siemens, which has had a presence in Chile since 1907, probably represents the strongest potential European competitor. In fiscal 2011, Siemens's sales to Chilean customers amounted to US\$225 million, while new orders totaled some US\$315 million. Siemens Chile currently has over 1,000 employees.

Although Chile and Korea executed a Free Trade Agreement in 2004, and the volume of trade between the two countries exceeded US\$7 billion in 2010, Korean telecom and ICT companies do not appear to have made significant inroads into the Chilean market. Likewise, Chinese firms appear to have made little headway, although Huawei in particular is notably aggressive in bidding on public-sector ICT initiatives worldwide and is able (through arrangements with the Government of China and Chinese financial institutions) to offer particularly attractive financing terms.

Overall, therefore, there is no lack of non-U.S.-based competition with extensive experience relevant to the NEBN Project, as well as with a significant presence in Chile and the South American region. At the same time, virtually all the representatives of major U.S. firms with whom the DM Contractor spoke expressed, in some form, a degree of confidence in their ability to participate in the NEBN Project. Some also volunteered that USTDA-sponsored TAs of the type contemplated were welcome as a potential means of forestalling further gains by foreign competitors.

H. IMPACT ON THE ENVIRONMENT

The recommended TA, whose main activities involve technical assistance and consulting, is not expected to have any measurable environmental impact. As for the resultant NEBN Project, irrespective of the particular technology platform(s) that are employed, the implementation phase can be expected to employ industry-standard construction and installation methods and procedures. The measures required for mitigation of any associated environmental impacts are

well known and are generally specified in the corresponding contracts and construction permits. Additionally, to the extent that the NEBN Project promotes greater efficiency and improved coordination on the part of public-safety organizations (for example, by ensuring a more timely and targeted response to events such as forest fires and wildfires), positive environmental impacts can be anticipated.

I. IMPACT ON US LABOR

The “Impact on US Labor” Statement reads as follows:

“The Foreign Operations, Export Financing and Related Programs Appropriations legislation restricts U.S. foreign assistance from being used to provide: (a) any financial incentive to a business enterprise currently located in the United States for the purpose of inducing such an enterprise to relocate outside the United States if such incentive or inducement is likely to reduce the number of employees of such business enterprise in the United States because United States production is being replaced by such enterprise outside the United States; (b) assistance for the purpose of establishing or developing in a foreign country any export processing zone or designated area in which the tax, tariff, labor, environment, and safety laws of that country do not apply, in part or in whole, to activities carried out within that zone or area; (c) assistance for any project or activity that contributes to the violation of internationally recognized workers rights; and (d) direct assistance for establishing or expanding production of any commodity for export by any country other than the United States, if the commodity is likely to be in surplus on world markets at the time the resulting productive capacity is expected to become operative and if the assistance will cause substantial injury to United States producers of the same, similar, or competing commodity.”

There is nothing in the proposed Technical Assistance to indicate any likely breach of the above conditions.

J. QUALIFICATIONS

1. General Qualifications of Contractor

As is evident from the accompanying Terms of Reference (see Annex II), the proposed TA involves an in-depth assessment of the current state of emergency communications infrastructure in Chile; the development of functional specifications for a National Emergency Backbone Network of adequate capacity, availability, robustness, etc., that will enable the existing emergency communications networks to interoperate; and, finally, assistance to Subtel with structuring and implementing the procurement of the NEBN. On a general level, therefore, it is expected that the Contractor will provide the requisite breadth and depth of expertise in emergency communications planning, design, procurement and implementation, in environments on a similar scale and with a comparable stakeholder profile.

Moreover, it is believed that the National Response Framework (NRF) promulgated in 2008 by the U.S. Department of Homeland Security (DHS) and the Federal Emergency Management Agency (FEMA), provides a comprehensive approach to emergency/ disaster response on a national level, as well as “lessons learned” that may offer useful insights and perspective in the Chilean context. Accordingly, it is expected that one or more members of the Contractor Team will be knowledgeable about the NRF and related structures such as the National Incident Management System (NIMS), Integrated Command System (ICS), and National Planning Scenarios.

Additionally, it is expected that the Contractor will display experience and abilities in the following areas:

- Working closely with senior management and technical and administrative personnel
- Communicating results and disseminating information to management and to stakeholders and interested parties

Successful performance of the TA will require close collaboration with Subtel and ONEMI, and some degree of coordination with Chilean public-safety organizations, to ensure that maximum practical benefit is derived from the TA and that the results are put to good practical use in the context of the NEBN Project. Thus, the following additional attributes are also considered critical to a successful outcome:

- Willingness of Contractor to spend significant time in-country
- A work plan ensuring close collaboration and interaction with Subtel and ONEMI
- The capability to deliver quality results and recommendations in timely fashion

The proposed specific composition of the Contractor team for the recommended TA is described below.

Team Composition and Experience

In terms of the composition and particular credentials of the Contractor, it is anticipated that the team will consist of a Project Manager; two (2) Emergency/Disaster Communications Specialists; a Network Engineer; an Economic/Financial Analyst; and a Procurement Specialist (all U.S.-based); plus Local Support (Santiago-based). The position of Project Manager may be combined with that of any of the other U.S.-based specialists, provided that the person so designated meets all of the requirements of the two positions separately, and it can be shown that the proposed Contractor Team can efficiently carry out the full scope of the TA. More specific descriptions follow.

Project Manager:

- At least ten (10) years of relevant experience in the ICT industry
- Specific expertise in planning and implementing large-scale complex backbone networking projects, preferably in the context of public-safety organizations
- Experience in gathering and analyzing requirements, presentation of reviews, concepts, plans and recommendations to a broad stakeholder audience; experience in organizing and conducting stakeholder workshops

Ability to work closely and effectively with Subtel and ONEMI personnel throughout the TA, as well as with other stakeholders and interested parties
Organizational, management and cross-cultural skills and perspective to structure, oversee and carry out the TA effectively
Proficiency in Spanish, at a level adequate to enable effective conduct of day-to-day work in that language, is not specifically required but would be a distinct advantage

Emergency/Disaster Communications Specialist 1:

At least seven (7) years of experience with the planning and design of emergency / public-safety networks; exposure to strategic planning, emergency/disaster management organizational issues and/or institutional coordination issues would be an advantage
Thorough knowledge of and practical experience with the DHS/FEMA National Response Framework and related structures
Ability to work closely with and support Emergency/Disaster Communications Specialist 2 and the Network Engineer as may be required
Organizational and cross-cultural skills and perspective to structure, oversee and carry out the TA effectively

Emergency/Disaster Communications Specialist 2:

At least seven (7) years of experience with implementation and operation of emergency / public-safety networks; demonstrable “front-line” experience with such networks is highly desirable
Thorough knowledge of voice/data/video/messaging applications employed in public-safety communications
Extensive familiarity with interoperability issues associated with public-safety networks, migration of legacy systems to advanced platforms
Ability to work closely with and support Emergency/Disaster Communications Specialist 1 and the Network Engineer as may be required
Organizational/management skills to structure, oversee and carry out the TA effectively

Network Engineer:

At least ten (10) years of experience with the planning, design and implementation of telecom/networking infrastructure and connectivity solutions
Extensive familiarity with technology platforms and protocols (e.g., P25, IP/MPLS) employed in terrestrial fixed and wireless public-safety networks and in satellite communications
Knowledge of network planning and analysis, and traffic engineering/simulation tools
Familiarity with interoperability issues associated with backbone networks in general and with public-safety networks in particular, migration of legacy systems to advanced platforms
Exposure to VPNs, network security/privacy issues, authentication, access control is desirable
Ability to work closely with and support the two Emergency/Disaster Communications Specialists as may be required
Organizational and cross-cultural skills and perspective to structure, oversee and carry out the TA effectively

Economic/Financial Analyst:

Background in finance, economics or related field

Demonstrated experience in economic and financial analysis and modeling
Specific experience in analyzing capital and operating costs of large-scale telecommunications networking projects
Organizational and management skills to structure, oversee and carry out the TA effectively

Procurement Specialist:

At least seven (7) years of experience related to procurement of ICT systems, hardware and components, preferably with exposure to large-scale and/or complex integrated procurements
Knowledge of international public tendering requirements, formats and procedures
Specific experience in preparing functional and/or technical specifications for incorporation into procurement documents and tender packages
Ability to work closely and effectively with Subtel and ONEMI personnel
Proficiency in Spanish, at a level adequate to enable effective conduct of day-to-day work in that language, is not specifically required but would be a distinct advantage

In addition, the Contractor Team shall include Local Support. It is envisaged that Local Support will take the form of an individual or small firm based in Santiago, with knowledge and experience in working with Chilean public-sector institutions. It is anticipated that the Local Support will provide logistical and translation assistance, particularly in conjunction with interviews, site visits and data-gathering activities, as well as liaison and continuity in the intervals between in-country visits of U.S.-based Contractor Team members.

K. JUSTIFICATION

As described previously, the particular geography of Chile, and the country's susceptibility to a variety of natural and man-made emergencies and disasters, make it imperative to ensure an effective response on the part of public-safety agencies in emergency and disaster situations. The critical importance of this issue was dramatically highlighted by the earthquake and tsunami of February 27, 2010, which resulted in the loss of more than 500 lives and damage to infrastructure and property estimated at US\$30 billion.

The DM Contractor believes that the proposed TA is justified by virtue of its centrality to the task of improving national emergency/disaster response, and the attendant potential for broad positive developmental impacts. In particular, it will enhance the capability of public-safety organizations to respond in a vigorous, timely and coordinated fashion emergency and disaster situations, thus improving the security of the citizenry at large.

The NEBN Project also offers strong opportunities for participation of U.S.-based suppliers of systems, equipment and services. Given the fact that the NEBN Project is still in the planning stages, and that the choice of technology or technologies for its implementation is not known (and cannot be known) at this stage, the U.S. export potential is difficult if not impossible to calculate directly, but can be approximated on the basis of expert estimates and also from "benchmarking" against similar initiatives in comparable environments. Based on these sources,

the export potential is believed to be on the order of US\$42 million, and there is reason to believe that this figure is conservative.

A further consideration is that, as a large-scale, high-priority and high-visibility initiative, the NEBN Project is virtually certain to attract the attention of foreign competition, as noted in Section G above; a USTDA-funded TA will enhance the prospects for U.S. participation.

Accordingly, the DM Contractor believes that funding of the proposed TA on behalf of Subtel represents a good use of USTDA resources.

ANNEX 3



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

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

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

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

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

NATIONALITY:

1) Rule

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

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

2) Application

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

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

3) Definitions

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

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

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

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

SOURCE AND ORIGIN:

1) Rule

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

2) Application

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

3) Definitions

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

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

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

ANNEX 4

GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and the Undersecretariat of Telecommunications of Chile ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Grant Agreement the total amount of US\$514,548 ("USTDA Grant") to fund the cost of goods and services required for a technical assistance ("Technical Assistance") on the proposed National Emergency Backbone Network Project ("Project") in Chile ("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 Technical Assistance ("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 Technical Assistance ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The Technical Assistance will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the Technical Assistance 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. Therefore, USTDA, the Grantee, and the Contractor shall not directly or indirectly provide, offer or promise to provide money or anything of value to any public official in violation of any United States or Host Country laws relating to corruption or bribery.

4. Grantee Responsibilities

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

5. Contract Matters and USTDA's Rights as Financier

(A) Grantee Competitive Selection Procedures

Following advance notice of the procurement published online through Federal Business Opportunities (www.fedbizopps.gov), the technical evaluation of the U.S. Contractor proposals shall be carried out by the Grantee according to its procedures and the criteria specified in the Request for Proposals (RFP). Upon making a determination of the highest ranked U.S. Contractor, the Grantee shall forward the name of the U.S. Contractor for USTDA approval or disapproval, in accordance with USTDA's due diligence procedures.

(B) USTDA's Right to Approve Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 16 below upon selection of the Contractor to perform the Technical Assistance. USTDA then shall notify the Grantee whether or not USTDA approves the Grantee's Contractor selection. Upon USTDA approval of the Grantee's Contractor selection, the Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Technical Assistance that they were not selected. The Grantee and the Contractor then shall enter into a contract for performance of the Technical Assistance.

(C) USTDA's Right to Approve Contract Between Grantee and Contractor

(1) Contract

The Grantee and the Contractor shall enter into a contract for performance of the Technical Assistance. The Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 16 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract. USTDA then shall notify the Grantee and the Contractor whether or not USTDA approves the contract.

(2) Amendments and Assignments

The Grantee or the Contractor may submit any proposed amendment to the contract, including any proposed amendment to any annex thereto, or any proposed assignment of the contract, to USTDA at the address set forth in Article 16 below. USTDA then shall notify the Grantee and the Contractor whether or not USTDA approves the proposed amendment or assignment.

(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 Technical Assistance 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 any subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and the contract or any subcontract funded by the Grant Agreement, the Grant Agreement shall control.

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 Technical Assistance 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. Implementation of this Grant Agreement is contingent upon Grantee receiving approval of the General Comptroller Office of the Republic of Chile (*Contraloría General de la República de Chile*) and of the Ministry of Finance of the Republic of Chile (*Ministerio de Hacienda de la República de Chile*).

8. Technical Assistance Schedule

(A) Technical Assistance Completion Date

The completion date for the Technical Assistance, which is December 31, 2013, is the date by which the parties estimate that the Technical Assistance will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (i) 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 (ii) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

9. USTDA Mandatory Contract Clauses

All contracts funded under this Grant Agreement shall include the USTDA Mandatory Contract 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 Contract 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 this 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 this 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 professional services funded by USTDA under this Grant Agreement:

- (a) the Contractor must be a U.S. firm;
- (b) the Contractor may use U.S. subcontractors without limitation;

(c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;

(d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;

(e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;

(f) subcontractors from countries other than the United States or Host Country may not be used;

(g) goods purchased for performance of the Technical Assistance and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and

(h) goods and services incidental to Technical Assistance 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 this Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country, except for taxes of a de minimis nature (such as VAT) imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

13. Cooperation and follow up between the Parties

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, the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project.

14. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the Technical Assistance and this Grant Agreement adequate to demonstrate implementation of its responsibilities under this 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 Technical Assistance and the Grant Agreement.

15. Representation of Parties

For all purposes relevant to this 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 Undersecretary of Telecommunications. The Parties hereto may, by written notice, designate additional representatives for all purposes under this Grant Agreement.

16. 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 an electronic medium that produces a tangible record of the transmission, such as a facsimile or e-mail message, and will be deemed duly given or sent when delivered to such party at the following:

To: Subtel
Amunátegui 139, piso 5
Santiago, Chile
Phone: 56-2-421-3578
Fax: 56-2-421-3660
E-Mail: jorge.molina@subtel.cl
Nelson.Contreras@subtel.cl

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
E-Mail: grantnotices@ustda.gov and lac@ustda.gov

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial or Economic 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.: 11 12/131001
Activity No.: 2012-51017A
Reservation No.: 2012194
Grant No.: GH201251194

17. Implementation Letters

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

18. Grant Agreement Amendments

Either party may submit to the other party at any time a proposed amendment to the Grant Agreement. A Grant Agreement amendment shall be effective only if it has been signed by both parties. Implementation of this amendment is contingent upon Grantee receiving approval of the General Comptroller Office of the Republic of Chile (*Contraloría General de la República de Chile*) and of the Ministry of Finance of the Republic of Chile (*Ministerio de Hacienda de la República de Chile*), if it is necessary in the case of the the Ministry of Finance.

19. Termination Clause

Either party may terminate this Grant Agreement by giving the other party previous written notice of 30 days thereof. In addition, this Grant Agreement shall terminate immediately upon the issuance of final letters of non-approval from the General Comptroller Office of the Republic of Chile (*Contraloría General de la República de Chile*) and of the Ministry of Finance of the Republic of Chile (*Ministerio de Hacienda de la República de Chile*). The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Technical Assistance, except for payments that may be made pursuant to Clause I number (2) of the USTDA Mandatory Contract Clauses set forth in Annex II to this Grant Agreement. This article and Articles 5, 12, 13, 14, and 21 of the Grant Agreement shall survive termination of the Grant Agreement.

20. 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.

21. U.S. Technology and Equipment

By funding this Technical Assistance, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed for Project implementation, according to the Host Country laws. Nothing in this Grant Agreement shall limit non-U.S. suppliers from competing in any such procurements.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

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

**For the Government of the
United States of America**

**For the Undersecretariat of
Telecommunications of Chile**

By: _____

By: _____

Date: _____

Date: _____

Witnessed:

Witnessed:

By: _____

By: _____

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

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 Undersecretariat of Telecommunications ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the technical assistance ("Technical Assistance") for the National Emergency Network project ("Project") in Chile ("Host Country"). The Client and the Contractor are the parties to this Contract, and they hereinafter are referred to collectively as the "Contract Parties." 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 the Contract or any subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

This Contract, and any amendment thereto, including any amendment to any annex thereto, and any proposed assignment of this Contract, 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 conforms to modifications required by USTDA during the Contract review process and the Contract has been formally approved by USTDA. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor an English language version of a final negotiated draft Contract or a signed Contract to the attention of the General Counsel's office at USTDA's address listed in Clause N below.

(2) USTDA Not a Party to the Contract

It is understood by the Contract 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 Contract 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 Technical Assistance and shall not be construed as making USTDA a party to the Contract. The Contract 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 Contract Parties or the parties to any subcontract, jointly or separately; and in consideration of USTDA's role as financier, the Contract Parties further agree that USTDA's rights may be exercised without thereby incurring any responsibility or liability, in contract, tort, or otherwise, to the Contract Parties or the parties to any subcontract. 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 professional services funded by USTDA under the Grant Agreement:

- (a) the Contractor must be a U.S. firm;
- (b) the Contractor may use U.S. subcontractors without limitation;
- (c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;
- (d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;
- (e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;
- (f) subcontractors from countries other than the United States or Host Country may not be used;
- (g) goods purchased for performance of the Technical Assistance and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and
- (h) goods and services incidental to Technical Assistance 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 period of performance of work provided for by this Contract, 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 Technical Assistance. 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, fax number, and e-mail address. 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.

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon Contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon approval by USTDA of a Final Report that has been (i) prepared and submitted in accordance with the requirements set forth in Clause I below, and (ii) approved in writing by the Client in the manner provided for by Clause H(3)(b)(iii) below. Invoicing procedures for all payments are described below.

(3) Contractor Invoice Requirements

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

(a) Contractor's Invoice

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

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

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

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

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

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

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

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

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the 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 to the attention of the Finance Department at USTDA's address listed in Clause N below, or by e-mail to invoices@ustda.gov.

I. Termination

(1) Method of Termination

Either Contract Party may terminate this Contract upon giving written notice to the other party and USTDA. This notice shall be effective after either 30 days, or any other period set forth elsewhere in this Contract. Furthermore, this Contract shall terminate immediately upon notification of USTDA's termination of the Grant Agreement or the term of availability of any funds thereunder.

(2) Ramifications of Termination

In the event that this Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for payment for the value of the work performed pursuant to the terms of this Contract. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the value of the work performed pursuant to the terms of this Contract.

(3) Survivability

Clauses B, D, G, H, I, and O of the USTDA Mandatory Contract Clauses shall survive the termination of this Contract.

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

and

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

and

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

The Contractor shall also provide one (1) hard copy of the Public Version of the Final Report to the Commercial or 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, and USTDA's address. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term "Confidential Version." The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term "Public Version." The front cover of every Final Report shall also contain the following disclaimer:

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

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's address, and USTDA's mission statement. Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

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

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

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

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

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

K. Modifications

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

L. Technical Assistance Schedule

(1) Technical Assistance Completion Date

The completion date for the Technical Assistance, which is December 31, 2013, is the date by which the Contract Parties estimate that the Technical Assistance 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) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

M. Business Practices

The Contractor agrees not to pay, promise to pay or authorize any payment, directly or indirectly, to any person (whether a public employee or private individual) for the purpose of leading someone illegally or improperly to take any action favorable to either Party in connection with the Technical Assistance. The Client agrees not to receive any of those payments. The Contractor and the Client agree that each one will require that any agent or attorney hired to represent them in connection with the Technical Assistance shall comply with this paragraph and with all laws applicable to activities and obligations of each Party under this Agreement, including but not limited to those laws and obligations related to improper payments as described above.

N. 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.: 11 12/131001

Activity No.: 2012-51017A

Reservation No.: 2012194

Grant No.: GH201251194

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, except for taxes of a de minimis nature (such as VAT) imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Client nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

P. Export Licensing

The Contractor and all subcontractors are responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

Q. Contact Persons

The Client designates the following person as the contact person for matters concerning this Contract:

Name:

Title:

Phone:

Fax:

E-Mail:

The Contractor designates the following person as the contact person for matters concerning this Contract:

Name:

Title:

Phone:

Fax:

E-Mail:

If anyone designated by a Contract Party as a contact person ceases service as a contact person at any point during the five-year period following the date of signing of this Contract, the Contract Party that had designated that contact person shall provide USTDA and the other Contract Party with the name and contact information of a replacement contact person.

ANNEX 5

TERMS OF REFERENCE

Objective

The objective of the Technical Assistance is to assist Subtel in the planning, of the National Emergency Network (NEN). The NEN Project will develop a common communications facility that will ensure uninterrupted operation under a wide range of emergency and disaster scenarios, while at the same time enabling interconnection and interoperability of existing and future emergency communications networks, thus providing a unified platform.

This Technical Assistance will involve the diagnostic of the national emergency networks, the desired model definition, the gaps identification (between current and desired model), the medium and long term plan to accomplish it, and finally, an RFP for a tender while a second phase, which is not part of this Technical Assistance, will cover the acquisition of equipment.

Task 1: Preliminary Information Request

Data provided by Subtel will likely be in Spanish and it will be the Contractor's responsibility to translate the information for its use, if necessary.

Prior to the first visit to Chile, the Contractor shall submit a Preliminary Information Request (PIR) to Subtel for up-to-date documentation concerning the NEN Project. The documentation shall address the following areas at a minimum:

- Relevant policy, administrative and organizational framework for emergency response and communications (e.g., Circular No. 12 of 13 January 2011);
- National and institution-specific guidelines related to emergency communications;
- Published or unpublished reports and studies describing local, regional and/or national emergencies/disasters occurring within the last ten (10) years, and problems encountered / lessons learned; specifically, published or unpublished reports and studies regarding the performance of emergency communications infrastructure and systems during and after the February 2010 earthquake;
- General descriptive information regarding the particular networks to be interconnected via the NEN (in particular, routine and emergency communications functions and applications, coverage, technology platform, supplier(s), communication protocols, number of users, number of devices in use); and
- Summary historical information on emergency/disaster situations that have occurred in Chile over the past 25 years, including type, geographical area(s) affected, severity / extent of damage, and any available implications for disaster response / emergency communications.

The Contractor shall submit the PIR to Subtel at least five (5) weeks prior to the date of commencement of the first visit to Chile. Subtel shall make best efforts to

obtain the requested information, and supply the information obtained to the Contractor at least two (2) weeks prior to the said date.

Task 2: Project Kick-Off and Situation Assessment

Sub-Task 2a: Introductory Meetings and Familiarization

The Contractor shall meet with Subtel to review, discuss and refine the overall strategy, scope, objectives and deliverables of the Technical Assistance, and to define and clarify Subtel's and Contractor's roles and responsibilities. The Contractor shall form a joint Study Team with Subtel, to include at least one representative of ONEMI (or its successor organization, if applicable). The members of the Study Team shall act as coordinators and primary points of contact throughout the course of the Technical Assistance. Additionally, the Contractor shall review with Subtel the Technical Assistance approach and methodology, documentation and project management reporting requirements, milestones and workflow arrangements. Finally, the Contractor shall review with Subtel the information obtained through the PIR in Task 1 to identify any significant outstanding gaps, and agree with Subtel on the procedures and timeframe for addressing those gaps.

Sub-Task 2b: Data Review

The Contractor shall review the data in Subtel's possession regarding current long-haul communications infrastructure in Chile (particularly national and regional fiber-optic, microwave and satellite backbone networks), as well as the more detailed technical data on the particular networks to be interconnected creating the NEN, with a view to determining the extent to which that data can adequately provide the basis for the subsequent tasks of the Technical Assistance (in particular Task 3). The Contractor shall identify any gaps where collection of additional data will be needed, and shall agree with Subtel on the procedures and timeframe for addressing those gaps.

Sub-Task 2c: Review of Infrastructure and Operations of Participating Institutions The Contractor shall hold substantive meetings with appropriate technical and/or administrative personnel of the participating institutions, with the objective of gaining a fuller first-hand picture of how their communications infrastructure and networks support the institutions' emergency/disaster response mandates, and also with the objective of eliciting information on particular issues or concerns regarding the need for inter-agency communication during emergency/disaster situations, as well as current and foreseeable future initiatives aimed at improving inter-agency emergency communications. Subtel shall facilitate such meetings; it is anticipated that members of the Study Team will attend.

Sub-Task 2d: Regional Site Visits

The Contractor shall carry out a series of site visits outside of Santiago to gain a fuller first-hand picture of communications requirements during emergency/disaster situations, as well as information on the challenges of terrestrial backbone network implementation in Chile. Since it would be impractical to visit all 15 regions of Chile, the Contractor and Subtel shall agree on a program involving site visits to the major centers of five (5) regions, selected so as to be representative of the diversity of possible emergency and disaster situations that can occur in Chile such as: earthquakes, tsunamis, volcanic eruptions, and forest fires. It is

recommended that Region XII (officially known as Región de Magallanes y de la Antártica Chilena, comprising Chilean Patagonia and Tierra del Fuego) be included in the list of regions to be visited, due to its remoteness and geographical isolation from the rest of Chile.

The Contractor shall conduct visits to local ONEMI offices in each instance, and shall assess the state of the ONEMI communications infrastructure and systems, the corresponding degree of disaster readiness and survivability (redundant systems, backup power), and the general suitability of the ONEMI facilities for acting as regional “hubs” or Points of Presence in the NEN. The Contractor shall also elicit information on particular region-specific issues or concerns regarding communications requirements during emergency/disaster situations. Subtel shall facilitate the necessary meetings, and members of the Study Team may accompany the Contractor.

Deliverable #1: The Contractor shall prepare and submit an Inception Report that summarizes the findings of Tasks 1 and 2 and describes, in particular, the interviews and meetings conducted, sites visited, progress in collecting and reviewing data, and problems encountered or foreseen. Any impacts on the projected work schedule or deployment of Contractor personnel shall also be described in the Inception Report. Any pertinent initial observations or findings shall also be included.

Task 3: Baseline Traffic Data Analysis and Network Dimensioning

Based on technical data in Subtel’s possession, plus any additional data and information acquired in the course of Sub-Tasks 2c and 2d, the Contractor shall carry out a baseline traffic data analysis. The analysis shall be oriented primarily toward estimation of the profile and volume of voice/data/video traffic that would need to be routed over, and adequately handled by, the NEN in emergency situations, rather than toward the traffic carried within the various existing networks.

The analysis shall consider a number of “generic” scenarios, depending on the scope and nature of the emergency or disaster, with a “worst-case” national disaster on the scale of the February 2010 earthquake as a limiting case. It should be borne in mind that the objective is not to design the NEN *per se*, but to conduct an analysis at a level of detail sufficient to enable prospective suppliers to propose concrete NEN solutions that display the appropriate sizing, functionality and performance (see Task 5).

The Contractor shall travel to Chile to present its initial findings and outline the proposed next steps to Subtel and representatives of the participating institutions, as well as to solicit additional input and stakeholder buy-in. The Contractor shall consult and agree in advance with Subtel regarding the target audience and general agenda for the presentation. The Contractor shall be responsible for preparing and disseminating the corresponding materials (in Spanish), and shall also be responsible for providing qualified Spanish/English interpretation support if required. Subtel shall provide the room and necessary facilities (such as audio-visual equipment).

Deliverable #2: The Contractor shall prepare a report summarizing the results of the Task 3 analysis, as well as any pertinent implications for the eventual NEN solution. The Contractor shall also provide the presentation materials to Subtel, in Spanish, in electronic and/or paper format.

Task 4: NEN Needs Analysis and Requirements Definition

Sub-Task 4a: Availability, Performance, Robustness and Backup Requirements

The NEN must meet high standards of availability, performance and resilience under a variety of emergency-response and disaster communications scenarios. In particular, it must be highly resilient and tolerant to a range of conditions that may manifest themselves in emergencies and disasters, either singly or in combination, such as:

- primary infrastructure failure (for example, in the event that a primary communications link is severed, a diverse alternate route or routes, with suitable capacity, must be available);
- secondary or support infrastructure failure (for example, the network nodes and elements must be able to operate for a prolonged period in the event of loss of mains power); and
- overloading or blockage of communications systems and links (the network must be able to accommodate extra traffic generated in response to emergencies and disasters).

With these factors in mind, and on the basis of the results of Tasks 1-3, the Contractor shall perform a Needs Analysis and Requirements Definition with respect to the availability, performance, robustness and backup criteria and parameters to be satisfied by the NEN, at a level of detail sufficient to enable prospective vendors to meaningfully propose solutions in responding to an RFP incorporating such criteria and parameters (see also Tasks 5 and 8 below).

It should be noted that the above requirements will be conditioned to a degree by geographic and demographic factors; in particular, Region XII presents a distinctive set of circumstances, because of its remoteness and physical isolation from the rest of Chile.

Sub-Task 4b: Interface / Interoperability Requirements

The NEN must provide suitable interfaces to a variety of existing and foreseeable communications systems and solutions employed by the various participating institutions. In particular, it is anticipated that many if not most of the systems and solutions in question will need to interface to the NEN via suitably engineered gateways. This situation raises a number of concerns, in particular: 1) the extent to which essential or desirable communications functions and features will be maintained, or lost, across the gateways; 2) possible capacity constraints that may be introduced by the gateway devices themselves; and, finally, 3) whether the necessary gateways are available as “commercial off-the-shelf” (COTS) devices; are available as standard items but require a degree of customization; or must be designed and manufactured from scratch, which in turn would raise questions regarding their cost-effectiveness or desirability.

With the above factors in mind, and on the basis of the results of Tasks 1-3, the Contractor shall perform a Needs Analysis and Requirements Definition with respect to the interface/interoperability requirements presented by the NEN, at a level of detail sufficient to enable prospective vendors to meaningfully propose solutions in responding to an RFP incorporating such criteria and parameters (see Tasks 5 and 8 below).

Note that it will be the responsibility of the prospective vendors to supply the full details regarding the nature and functionality of their proposed interface/interoperability solutions, as well as the procedures for interoperability testing and compliance certification.

In the case of both sub-tasks, and to the extent applicable, the Contractor shall also take note of and indicate any existing systems or solutions currently in use that are likely to require complete replacement by alternate or more up-to-date systems or solutions (because of inherent lack of interoperability, inadequate functionality, and/or technological obsolescence).

Deliverable #3: The Contractor shall prepare a report describing the Needs Analysis and Requirements Definition conducted in Sub-Tasks 4a and 4b, as well as any pertinent implications for replacement of existing systems or solutions.

Task 5: Development of NEN Functional Specifications

The Contractor shall develop Functional Specifications for the NEN, with a level of detail sufficient to enable prospective vendors to meaningfully propose comprehensive solutions in responding to an RFP incorporating the Functional Specifications in question (see Task 8). The Functional Specifications shall fully reflect the Availability, Performance, Robustness and Backup Requirements and Interface / Interoperability Requirements developed in conjunction with Task 4. While certain technology-related issues will inevitably have been addressed in Task 4, it is important that the Functional Specifications developed in Task 5 be maximally “technology-neutral.”

The Functional Specifications shall also include general requirements for NEN installation, testing, commissioning and ongoing operation, as well as any relevant requirements regarding:

- privacy and security (e.g., physical and virtual segregation, encryption);
- network management;
- support and maintenance in a multi-vendor / multigeneration technology environment; and
- issues related to scalability, expansion and upgrading.

In preparing the Functional Specifications, the Contractor may opt to distinguish between “mandatory” and “desirable” functionality if it proves desirable to do so.

Deliverable #4: The Contractor shall supply Subtel with NEN Functional Specifications, in Spanish, that conform to the above description.

Task 6: Evaluation of Alternatives

It is anticipated that a variety of alternative approaches to NEN implementation and operation will suggest themselves in the course of carrying out Tasks 4 and 5. The Contractor shall analyze the different available operation schemes, including but not limited to: BOT (Build-Own-Transfer), BOOT (Build-Own-Operate-Transfer), BOO (Build-Own-Operate), and BLT (Build-Lease-Transfer). This analysis shall include a pros/cons summary, which shall be discussed with Subtel for a final recommendation.

Accordingly, the Contractor shall review these alternatives with Subtel and ONEMI, from the standpoint of their prospective advantages/disadvantages or benefits/risks; furthermore, it may be desirable to expressly allow (or expressly forbid) certain alternative approaches in preparing the RFP (see Task 8). To the extent that such alternatives present themselves, the Contractor shall provide a suitably detailed description and assessment of advantages/disadvantages/benefits/risks, as well as an assessment of the economic implications (see Task 7), of each. A maximum of three (3) such alternatives shall be so described and assessed

Deliverable #5: The Contractor shall prepare a report describing and assessing the advantages/disadvantages, benefits/risks of the alternatives considered, as well as the economic implications of each. Subtel shall select one of the operation schemes recommended by the Contractor to be further developed under Task 7.

Task 7: Economic Analysis

Based on the operation scheme selected by Subtel and the Contractor in Task 6, the Contractor shall perform an economic analysis, aimed at estimating the cost of implementation of a “turnkey,” fully outsourced solution for the NEN, as well as the ongoing cost of operation over a nominal five-year period. The Contractor shall furnish the Grantee with a general cost estimate for planning and budgetary purposes, as well as for citation in the RFP (see Task 8) in accordance with Chilean public procurement requirements. To the extent that specific details of the solution cannot be known in advance, ranges of estimated costs may be calculated. To the extent practicable, the economic analysis shall take account of, and provide corresponding estimates for, the major alternatives identified and assessed in the previous task.

Deliverable #6: The Contractor shall prepare a report containing the economic analysis described in Task 7. The cost estimates shall be formatted as Excel files.

Task 8: Assistance with RFP Preparation

The RFP must be framed so as to be “technology-neutral,” i.e., the specifications and guidelines that it incorporates cannot inherently favor any particular technological platform or vendor solution over any other.

The Contractor's Functional Specifications prepared in Task 5 shall be formatted in such a manner as to admit direct incorporation into the draft RFP. In addition, the Contractor shall prepare, for inclusion in the RFP, a detailed selection methodology, with quantifiable and verifiable selection criteria, recommended weighting of criteria, and a proposed price-performance formula to assist Subtel in vendor short-listing and/or final vendor selection.

Finally, the Contractor shall also provide a draft narrative introduction to the RFP that provides relevant background information for the benefit of prospective vendors, and covering the following general areas:

- current state of emergency communications infrastructure and services in Chile;
- enumeration and brief description of roles and responsibilities of principal stakeholders;
- overview of the problem which the RFP is seeking to address; and
- high-level requirements and anticipated benefits of the envisaged solution.

Subtel shall be responsible for assembly and dissemination of the full RFP package, as well as for vendor liaison, evaluation, short-listing and selection of the eventual winning bid(s).

The Contractor shall travel to Chile to present its findings to date and corresponding conclusions and recommendations to the management personnel of Subtel. Subtel may invite other interested parties to the presentation. The Contractor shall consult and agree in advance with Subtel regarding the target audience and general agenda for the presentation.

The Contractor shall be responsible for preparing and disseminating the corresponding presentation materials (in Spanish), and shall also be responsible for providing qualified Spanish/English translation support if required. Subtel shall provide the room and necessary facilities (such as audio-visual equipment). It is anticipated that the presentation shall not be less than a half-day and not more than one full day.

Deliverable #7: The Contractor shall supply Subtel with the RFP components, in Spanish, enumerated in Task 8. At the end of Task 8, the Contractor shall travel to Chile to present its finding, conclusions and recommendations, to date. The Contractor shall provide the presentation materials to Subtel in electronic and/or paper format.

Task 9: Economic Impact Assessment, Preliminary Environmental Assessment, Developmental Impact Assessment, and Analysis of US Sources of Supply

Task 9 consists of four sub-tasks, comprising a preliminary review of the Project's anticipated developmental, environmental, economic and trade impacts.

Sub-Task 9a: Development Impact Assessment

The Contractor shall provide a report on the developmental impacts of the Project. While specific attention shall be paid to the immediate impact of the Project, the Contractor

shall include, where appropriate, any additional developmental benefits of the Project, including spin-off and demonstration effects. The analysis of potential benefits of the Technical Assistance shall be as concrete and detailed as possible. The Contractor shall provide estimates of the Project's potential benefits in the following areas:

- **Infrastructure.** How the Project will result in improvements to and/or increased investment in infrastructure (both direct and indirect)
- **Human Capacity Building.** Skills development and/or additional employment that would be generated within the Subtel and ONEMI environments and elsewhere; to the extent practicable, the Contractor enumerate the number and type of positions that would be created as a result.
- **Technology Transfer and Productivity Enhancement.** A description of new or advanced technologies that will be implemented as a result of the Project, and the specific technology or knowledge transfer that will take place thereby. Description of any efficiencies that will be gained (e.g. productivity gains, savings in transmission costs or lower production costs).
- **Other.** Any other attendant developmental benefits, including spin-off or demonstration effects.

Sub-Task 9b: Environmental Impact Assessment

The Contractor shall prepare a preliminary environmental impact assessment for the implementation of the Project.

Specifically, the Contractor shall:

- Make a preliminary review of the Project's anticipated impact on the environment to meet local, State, and Federal regulations as well as international standards established by multi-lateral lending agencies, such as the World Bank, and Inter-American Development Bank.
- Identify potential negative impacts, discuss the extent to which they can be mitigated, and develop plans for a full environmental impact assessment in anticipation of the Project moving forward to the implementation stage.
- Identify steps that will need to be undertaken by the Project sponsor subsequent to the Technical Assistance's completion and prior to Project implementation.
- Identify the impact of equipment use and future replacement, the use of sustainable sources of energy and the use of appropriate technologies and equipment for the particular environment.

Sub-Task 9c: Economic Impact Assessment

The Contractor shall explore and briefly report on any positive economic impacts that may be produced from the Project. The Contractor shall seek to identify and if practicable, quantify resultant economic benefits. The assessment shall be made to the best of the Contractor's internal abilities and utilizing existing subject matter expertise; detailed econometric forecasting and analysis is not required.

Sub-Task 9d: U.S. Sources of Supply

The Contractor shall identify possible U.S. sources of supply for the Project, to include a

brief description of relevant products, solutions and/or services, as well as contact information for the party or parties responsible for marketing/sales in Chile. The Business name, point of contact, address, telephone, e-mail, and fax numbers shall be included for each such party.

Deliverable #8: The Contractor shall furnish Subtel with a report containing an assessment of economic, environmental and developmental impacts, as well as descriptive information regarding U.S. sources of supply and the corresponding contact data.

Task 10: Final Report

The Contractor shall prepare and deliver to Subtel and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference (“Final Report”). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to Subtel. The Final Report shall be prepared in accordance with Clause J of Annex II of the Grant Agreement. The Contractor shall suitably integrate comments and feedback from the presentation conducted in Task 8 into the Final Report. The Final Report shall be translated into Spanish in its entirety. The Contractor shall provide five (5) hard copies of the Final Report to Subtel.

The Final Report shall contain an Executive Summary that adequately and accurately summarizes the principal activities undertaken in conjunction with the Technical Assistance and the major findings, conclusions and recommendations. Each task of these Terms of Reference shall form a separate chapter of the Final Report.

The Contractor shall provide USTDA with both the public and confidential versions of the Final Report in English. The Contractor shall also provide Subtel with both the public and confidential versions of the Final Report in Spanish. The Contractor shall prepare and provide to USTDA and the U.S. Embassy in Santiago, a Public Version of the Final Report on CD-ROM.

Notes

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

ANNEX 6



USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

U.S. Firm Information Form

This form is designed to enable the U.S. Trade and Development Agency ("USTDA") to obtain information about entities and individuals proposed for participation in USTDA-funded activities. Information in this form is used to conduct screening of entities and individuals to ensure compliance with legislative and executive branch prohibitions on providing support or resources to, or engaging in transactions with, certain individuals or entities with which USTDA must comply.

USTDA Activity Number *[To be completed by USTDA]*

Activity Type <i>[To be completed by USTDA]</i>	Feasibility Study	Technical Assistance	Other (specify)
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Activity Title *[To be completed by USTDA]*

Full Legal Name of U.S. Firm

Business Address (street address only)

Telephone	Fax	Website
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Year Established (include any predecessor company(s) and year(s) established, if appropriate).
Please attach additional pages as necessary.

Please provide a list of directors and principal officers as detailed in Attachment A. Attached? Yes

Type of Ownership	Publicly Traded Company
	Private Company
	Other (please specify)

If Private Company or Other (if applicable), provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in U.S. Firm, please complete Attachment B.

Is the U.S. Firm a wholly-owned or partially owned subsidiary?	Yes
	No

If so, please provide the name of the U.S. Firm's parent company(s). In addition, for any parent identified, please complete Attachment B.

Is the U.S. Firm proposing to subcontract some of the proposed work to another firm?	Yes
	No

If yes, U.S. Firm shall complete Attachment C for each subcontractor. Attached?	Yes
	Not applicable

Project Manager

Name	Surname	
	Given Name	
Address		
Telephone		
Fax		
Email		

Negotiation Prerequisites

Discuss any current or anticipated commitments which may impact the ability of the U.S. Firm or its subcontractors to complete the Activity as proposed and reflect such impact within the project schedule.	
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Identify any specific information which is needed from the Grantee before commencing negotiations.	
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U.S. Firm may attach additional sheets, as necessary.

U.S. Firm's Representations

U.S. Firm shall certify to the following (or provide any explanation as to why any representation cannot be made):

1. U.S. Firm is a [check one] Corporation LLC Partnership Sole Proprietor Other:
 duly organized, validly existing and in good standing under the laws of the State of:
 The U.S. Firm has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the USTDA Activity. The U.S. Firm is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.
2. The U.S. Firm has included herewith, a copy of its Articles of Incorporation (or equivalent charter or document issued by a designated authority in accordance with applicable laws that provides information and authentication regarding the legal status of an entity) and a Certificate of Good Standing (or equivalent document) issued within 1 month of the date of signature below by the State of:
 The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change in its status in the state in which it is incorporated. USTDA retains the right to request an updated certificate of good standing.
3. Neither the U.S. Firm nor any of its principal officers have, within the ten-year period preceding the submission of this proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
4. Neither the U.S. Firm, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 3 above.
5. There are no federal or state tax liens pending against the assets, property or business of the U.S. Firm. The U.S. Firm, has not, within the three-year period preceding the submission of this proposal, been notified of any delinquent federal or state taxes in an amount that exceeds US\$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.
6. The U.S. Firm has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself of its debts under any bankruptcy, insolvency or other similar law. The U.S. Firm has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.
7. The U.S. Firm certifies that it complies with USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

The U.S. Firm shall notify USTDA if any of the representations are no longer true and correct.

U.S. Firm certifies that the information provided in this form is true and correct. U.S. Firm understands and agrees that the U.S. Government may rely on the accuracy of this information in processing a request to participate in a USTDA-funded activity. If at any time USTDA has reason to believe that any person or entity has willfully and knowingly provided incorrect information or made false statements, USTDA may take action under applicable law. The undersigned represents and warrants that he/she has the requisite power and authority to sign on behalf of the U.S. Firm.

Name	<input type="text"/>	Signature	<input type="text"/>
Title	<input type="text"/>		
Organization	<input type="text"/>	Date	<input type="text"/>



ATTACHMENT B

USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

U.S. Firm Information Form – Shareholder(s) and Parent Company(s)

If applicable, U.S. Firm provided a list of shareholders and the percentage of their ownership. This form shall be completed for each shareholder that owns 15% or more shares in U.S. Firm, as well as any parent corporation of the U.S. Firm ("Shareholder"). In addition, this form shall be completed for each shareholder identified in Attachment B that owns 15% or more shares in any Shareholder, as well as any parent identified in Attachment B.

USTDA Activity Number <i>[To be completed by USTDA]</i>	
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Activity Title <i>[To be completed by USTDA]</i>	
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Full Legal Name of U.S. Firm	
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Full Legal Name of Shareholder	
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Business Address of Shareholder (street address only)	
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Telephone number		Fax Number	
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Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
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Country of Shareholder's Principal Place of Business	
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Please provide a list of directors and principal officers as detailed in Attachment A. Attached?	Yes
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Type of Ownership	<input type="checkbox"/> Publicly Traded Company
	<input type="checkbox"/> Private Company
	<input type="checkbox"/> Other

If applicable, provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in Shareholder, please complete Attachment B.	
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Is the Shareholder a wholly-owned or partially owned subsidiary?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If so, please provide the name of the Shareholder's parent(s). In addition, for any parent identified, please complete Attachment B.	
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Shareholder may attach additional sheets, as necessary.



ATTACHMENT C

USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

Subcontractor Information Form

This form is designed to enable the U.S. Trade and Development Agency ("USTDA") to obtain information about entities and individuals proposed for participation in USTDA-funded activities. Information in this form is used to conduct screening of entities and individuals to ensure compliance with legislative and executive branch prohibitions on providing support or resources to, or engaging in transactions with, certain individuals or entities with which USTDA must comply.

USTDA Activity Number [<i>To be completed by USTDA</i>]	
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Activity Title [<i>To be completed by USTDA</i>]	
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Full Legal Name of Prime Contractor U.S. Firm ("U.S. Firm")	
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Full Legal Name of Subcontractor	
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Business Address of Subcontractor (street address only)	
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Telephone Number	
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Fax Number	
------------	--

Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
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Subcontractor Point of Contact

Name	Surname	
	Given Name	

Address	
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Telephone	
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Fax	
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Email	
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Subcontractor's Representations

Subcontractor shall provide the following (or any explanation as to why any representation cannot be made), made as of the date of the proposal:

1. Subcontractor is a <i>[check one]</i>	<input type="checkbox"/> Corporation	<input type="checkbox"/> LLC	<input type="checkbox"/> Partnership	<input type="checkbox"/> Sole Proprietor	<input type="checkbox"/> Other
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duly organized, validly existing and in good standing under the laws of: _____ .

The subcontractor has all the requisite corporate power and authority to conduct its business as presently conducted, to participate in this proposal, and if the U.S. Firm is selected, to execute and deliver a subcontract to the U.S. Firm for the performance of the USTDA Activity and to perform the USTDA Activity. The subcontractor is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.

2. Neither the subcontractor nor any of its principal officers have, within the ten-year period preceding the submission of the Offeror's proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.

3. Neither the subcontractor, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.

4. There are no federal or state tax liens pending against the assets, property or business of the subcontractor. The subcontractor, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.

5. The subcontractor has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The subcontractor has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

6. The Subcontractor certifies that it complies with the USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The Subcontractor commits to notify USTDA, the Contractor, and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

The selected Subcontractor shall notify the U.S. Firm, Grantee and USTDA if any of the representations included in its proposal are no longer true and correct.

Subcontractor certifies that the information provided in this form is true and correct. Subcontractor understands and agrees that the U.S. Government may rely on the accuracy of this information in processing a request to participate in a USTDA-funded activity. If at any time USTDA has reason to believe that any person or entity has willfully and knowingly provided incorrect information or made false statements, USTDA may take action under applicable law. The undersigned represents and warrants that he/she has the requisite power and authority to sign on behalf of the Subcontractor.

Name		Signature	
Title			
Organization		Date	

ANNEX 7



U . S . T R A D E A N D D E V E L O P M E N T A G E N C Y

April 4, 2013

Nelson Contreras E.
Jefe de Departamento de Ingeniería y Operaciones de Redes de Emergencia
Subtel
Amunátegui 139, Piso 5
Santiago, Chile

Via Email: nelson.contreras@subtel.cl

**Re: Chile: National Emergency Network Project
USTDA Activity No. 2012-51017A**

Dear Mr. Contreras:

Reference is made to the July 31, 2012 Grant Agreement between the U.S. Trade and Development Agency ("USTDA") and the Undersecretariat of Telecommunications of Chile ("Subtel") ("Grantee") for technical assistance on the National Emergency Network Project.

As requested, USTDA agrees to the extension of the Completion Date, set forth in Article 8(A) and Mandatory Clause K(1) of the Grant Agreement, to June 30, 2014. This is the date that the parties estimate that the technical assistance will have been completed.

Please do not hesitate to contact us should you have any questions regarding USTDA procedures for this important technical assistance.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Flewelling".

Jacob Flewelling
Country Manager
Chile, Colombia and the Caribbean

cc: Jorge Molina, Division Head, Fiscalización