

REQUEST FOR PROPOSALS

**FEASIBILITY STUDY FOR THE
VESSEL TRAFFIC MANAGEMENT SYSTEM**

Submission Deadline: 1:00 PM LOCAL TIME

WEDNESDAY, DECEMBER 22, 2010

**Submission Place: Luis Fernando Resano
Secretaria de Portos da Presidência da República
SCN Quadra 04 Bloco B
Centro Empresarial Varig
Petala C – Sala 102
Brasilia-DF 70714-900
Brazil**

Phone: + 55 (61) 3411-3733

**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\$674,000 to the Brazilian Secretariat of Ports (the "Grantee") in accordance with a grant agreement dated August 31, 2010 (the "Grant Agreement"). USTDA will fund the costs of a feasibility study ("Study") for the proposed Vessel Traffic Management System Project ("Project") in Brazil ("Host Country"). The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Feasibility Study.

1.1 BACKGROUND SUMMARY

With a coastline of 5,600 miles and 34 public ports engaged in maritime transport, Brazilian ports handle roughly 768 million tons of goods annually. This equates to approximately 95% of the country's trade by volume. The upcoming Olympic Games and World Cup are expected to increase the amount of cruise ship traffic to Brazil, along with a combination of other factors that has provided the impetus for improved safety measures along Brazil's coastline.

The Brazilian Secretariat of Ports is charged with port master planning and development, regulatory framework, and operations and management of port authorities in the country. In order to accommodate the expected increase in vessel traffic, this feasibility study will develop a VTMS installation plan at four of the country's busiest ports. The proposed selected ports are Rio de Janeiro, Itaguaí, Rio Grande, and Salvador/Aratu. The installation of VTMS would also help Brazil improve its logistics efficiency, shortening the berthing time of vessels by providing real time information on port operation. A background Definitional Mission is provided for reference in Annex 2.

1.2 OBJECTIVE

This feasibility study will provide the roadmap and guidelines for the acquisition and installation of VTMS at each of the selected ports to help Brazil track the vessel traffic on its coast, as well as reduce the possibility of collisions between vessels and collisions of vessels with offshore structures such as oil rigs. The Terms of Reference (TOR) for this Feasibility Study are attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

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

The amount for the contract has been established by a USTDA grant of US\$674,000. **The USTDA grant of \$US674,000 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\$674,000 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 Vessel Traffic Management System Project.

2.2 DEFINITIONS

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

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

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

2.3 DEFINITIONAL MISSION REPORT

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

2.4 EXAMINATION OF DOCUMENTS

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

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

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

2.5 PROJECT FUNDING SOURCE

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US\$674,000.

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 Portuguese and English. Annex 6 does not need to be translated into Portuguese.

2.13 PROPOSAL SUBMISSION REQUIREMENTS

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

Luis Fernando Resano
Secretaria de Portos
SCN Quadra 04 Bloco B
Centro Empresarial Varig
Petala C – Sala 102
Brasilia-DF 70714-900
Brazil

Phone: + 55 (61) 3411 3733

An Original and one copy of your proposal must be received at the above address no later than 1:00 pm (local time), on December 22, 2010.

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

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

2.14 PACKAGING

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

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

2.15 AUTHORIZED SIGNATURE

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

2.16 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for NINETY (90) days after the proposal due date, and Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

2.17 EXCEPTIONS

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

2.18 OFFEROR QUALIFICATIONS

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

2.19 RIGHT TO REJECT PROPOSALS

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

2.20 PRIME CONTRACTOR RESPONSIBILITY

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

2.21 AWARD

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

2.22 COMPLETE SERVICES

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

2.23 INVOICING AND PAYMENT

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

Section 3: PROPOSAL FORMAT AND CONTENT

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

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

The proposal shall consist of a technical proposal only. A cost proposal is NOT required because the amount for the contract has been established by a USTDA grant of US\$674,000, which is a fixed amount.

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

Each proposal must include the following:

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

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

3.1 EXECUTIVE SUMMARY

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

3.2 COMPANY INFORMATION

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

3.2.1 Company Profile

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), the information requested in sections 3.2.5 and 3.2.6 below must be provided for each subcontractor.

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

3.2.2 Offeror's Authorized Negotiator

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

3.2.3 Negotiation Prerequisites

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

3.2.4 Offeror's Representations

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

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

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

3.2.5 Subcontractor Profile

1. Name of firm and business address (street address only), including telephone and fax numbers.
2. Year established (include predecessor companies and year(s) established, if appropriate).

3.2.6 Subcontractor's Representations

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

1. Subcontractor is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State of _____ . The subcontractor has all the requisite corporate power and authority to conduct its business as presently conducted, to participate in this proposal, and if the Offeror is selected, to execute and deliver a subcontract to the Offeror for the performance of the Feasibility Study and to perform the Feasibility Study. 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 three-year period preceding this RFP, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
3. Neither the 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.

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

3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

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

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

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

3.4 TECHNICAL APPROACH AND WORK PLAN

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

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

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

3.5 EXPERIENCE AND QUALIFICATIONS

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

As many as possible but not more than six (6) relevant and verifiable project references must be provided for 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 or larger in scope than the Feasibility Study as described in this RFP.

Section 4: AWARD CRITERIA

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

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

Criteria	Points
1. Technical Experience – VTMS: Extent of U.S. Firm and project team's experience and demonstrated technical expertise in planning and implementing vessel traffic management systems in port and marine environments of a scale and complexity comparable to the four ports in the proposed feasibility study.	30
2. Financial Modeling and Development Impact Assessment: Demonstrated expertise in financial modeling associated with project finance, maintenance contracts, and annual operations of VTMS. U.S. Firm and project team's experience and specific expertise in evaluating developmental and environmental impacts associated with maritime	30

infrastructure projects and/or the implementation of complex technologies and systems in Latin America or other comparable developing country regions.	
3. Work Plan and Methodology: Adequacy of the proposed work plan and suggested overall approach in responding to the Terms of Reference (TOR). The proposal should demonstrate a detailed knowledge of the specific issues and tasks required to complete the feasibility study. The overall quality of proposals should be considered in light of the proposal's technical scope, clarity, and cohesiveness.	20
4. Suitability of Key Team Members for Proposed Assignments: Consideration should be given to the qualifications and experiences of the proposed team and the suitability of proposed team members for their assigned project tasks as outlined in the proposal's work plan and documented by the inclusion of project team member CVs.	10
5. Country and Regional Experience: U.S. Firm and team's experience in, and familiarity with the port sector in Brazil and Latin America, including experience working with federal and state government authorities, key port community stakeholders, and the demonstrated ability of key project team staff to conduct technical discussions in Portuguese	10
Total	100

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

Price will not be a factor in contractor selection.

ANNEX 1

INSERT: Luis Fernando Resano, Secretaria de Portos, SCN Quadra 04 Bloco B, Centro Empressarial Varig, Petala C – Sala 102, Brasilia-DF 70714-900, Brazil, Tel.: + 55 (61) 3411-3733

B – Brazil: Vessel Traffic Management System

POC: Nina Patel, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. **VESSEL TRAFFIC MANAGEMENT SYSTEM.** The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms that are qualified on the basis of experience and capability to develop a feasibility study to provide a market analysis that will determine the most likely products and clients for the new facility and establish a Master Plan based on identified demand.

The Brazilian Secretariat of Ports is charged with port master planning and development, regulatory framework, and operations and management of port authorities in the country. In order to accommodate an expected increase in vessel traffic, this feasibility study will develop a VTMS installation plan at four of the country's busiest ports. The proposed selected ports are Rio de Janeiro, Itaguaí, Rio Grande, and Salvador/Aratu.

This feasibility study will provide the roadmap and guidelines for the acquisition and installation of VTMS at each of the selected ports to help Brazil track the vessel traffic on its coast, as well as reduce the possibility of collisions between vessels and collisions of vessels with offshore structures such as oil rigs. The Terms of Reference (TOR) for this Feasibility Study are attached as Annex 5.

The U.S. firm selected will be paid in U.S. dollars from a \$674,000 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

A detailed Request for Proposals (RFP), which includes requirements for the Proposal, the Terms of Reference, and a background definitional mission/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 Portuguese and English directly to the Grantee by 1:00 pm (local time), December 22, 2010 at the above address. Annex 6 does not need to be translated in Portuguese. 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

Port Logistics and Navigation Opportunities in Brazil -USTDA CO2009510008



Definitional Mission Final Report

For

JGT SS
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Port Logistics and Navigation Opportunities in Brazil

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LIST OF ACRONYMS

ANTAQ	Agência Nacional de Transportes Aquaviários
ANVISA	Agência Nacional de Vigilância Sanitária
BOVESPA	Bolsa de Valores de São Paulo
CAP	Conselho de Administração Portuária
CENTRAN	Centro de Excelência em Engenharia de Transportes
CESPORTOS	Comissões Estaduais de Segurança Pública nos Portos, Terminais e Vias Navegáveis
CIRM	Comite International Radio-Maritime
CONPORTOS	Comissões Nacional de Segurança Pública nos Portos, Terminais e Vias Navegáveis
CONSEMA	Conselho Estadual do Meio Ambiente
CPRH	Agência Estadual de meio Ambiente e Recursos Hídricos
DM	USTDA Definitional Mission
FIFA	Fédération Internationale de Football Association
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis
IADB	Interamerican Development Bank
IALA	International Association Marine Aids to Navigation and Lighthouse Authorities
IMO	International Maritime Organization
ISO	International Organization for Standardization
IPEA	Instituto de Pesquisa Econômico Aplicada
ISPS	International Ship and Port Facility Security Code
OV	USTDA Orientation Visit
PAC	Programa de Aceleração do Crescimento
PNLT	Plano Nacional de Logística e Transporte
REPORTO	Regime Tributário para Incentivo à Modernização e à Ampliação da Estrutura Portuária
SEP	Secretaria de Portos
SEPLAG	Secretaria de Planejamento de Gestão
SETRAN	Secretaria de Estado de Transportes
SOLAS	International Convention for the Safety of Life at Sea
USCG	United States Coast Guard
USTDA	United States Trade and Development Agency
VTS	Vessel Traffic System
VTMS	Vessel Traffic Management System
VTMIS	Vessel Traffic Management and Information System

PORT LOGISTICS AND NAVIGATION OPPORTUNITIES IN BRAZIL

I. EXECUTIVE SUMMARY

With a coastline of 8,500 km, the Brazilian maritime port sector has undergone profound changes since the promulgation of the 1993 Port Modernization Law (Lei 8.630/93). The Brazil port sector includes 34 public ports and a large number of private ports and terminals. Together public and private ports assemble more than 190 port terminals. The Brazilian Government created a Special Secretariat of Ports in October 2007 (Lei 11.518/2007) made permanent in March 2010. The Secretariat of Ports is tasked with port master planning and development, establishing the regulatory framework, and modernizing the administration, operations and management of port authorities. New incentives are stimulating port investment. The REPORTO legislation (Lei 11.033/2004, extended via Lei 11.726 and Lei 11.774 of 2008) grants import tax incentives to port terminal operators, concessionaires, and operators, including rail operators on capital equipment purchases to December 31, 2011. Bolstered by fiscal and administrative reforms, privatization, control of inflation, favorable tax incentives, and growth of the financial sector in raising capital through transparent stock offerings (Novo Mercado: BOVESPA), Brazil is now in an economic climate that is favorable to investment in ports and transportation infrastructure.

In September 2009, the United States Trade and Development Agency (USTDA) contracted Portal Commerce & Logistics, LLC to evaluate numerous solicitations and project requests submitted by Brazilian port authorities and state government planning secretariats with the objective of making funding recommendations. This *Port Logistics and Navigation Opportunities in Brazil* Definitional Mission (DM) identifies opportunities in the Brazilian ports and navigation sector that offer the most potential to generate U.S. exports and recommends action be taken on those showing the most business potential.

Given the emerging demands related to port security and protection of the environment, the USTDA has been working with Brazil embarking on a series of regional initiatives for the port sector. The evolution of the agency's priorities can be witnessed in the following USTDA projects in the Brazilian port and navigation sectors:

- 2004 "Brazilian Port Security Orientation Visit (OV)";
- 2004 International Ship and Port Facility Security (ISPS Code) Certification and Implementation;
- 2005 Latin America Region "Port security-VTS" conference in Jacksonville;
- 2007 Feasibility Study for State of Rio de Janeiro Emergency Operations Center; and,
- 2009 Intelligent Cargo Project.

As the Government of Brazil outlines its plans for port development, several state-level secretariats of planning and port authorities approached the USTDA for assistance in developing

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II. INTRODUCTION & OVERVIEW OF BRAZILIAN PORT SECTOR

This *Port Logistics and Navigation Opportunities in Brazil* Definitional Mission identifies opportunities in the Brazilian ports and navigation sector that offer the most potential to generate U.S. exports. The United States Trade and Development Agency (USTDA) contracted Portal Commerce & Logistics, LLC (PCL) to evaluate numerous solicitations and project requests submitted by Brazilian port authorities and state government planning secretariats with the objective of recommending up to three projects for possible feasibility study funding.

The Brazilian port sector has undergone profound changes since the promulgation of the 1988 Constitution. The 1988 Brazilian Constitution grants control and port ownership and operation to the federal government. The federal government can delegate the operation of ports to local and state governments. Operationally, Article 21 of the Constitution permits the operation of ports through concessions, franchises or licenses granted to private companies. Article 175 determines that all concessions or franchises for public services be subject to mandatory public tendering processes. The federal government, though, remains with the exclusive powers to regulate ports as specified in Chapter 2, Article 22.

The Brazil port sector includes 34 public ports and a large number of private ports and terminals. Together public and private ports assemble more than 190 port terminals.¹ Table I.1 lists the 34 Brazilian ports and their respective jurisdiction. Since the Port Modernization Law of 1993 (Lei 8.630/93), the Brazilian port and navigation sectors have experienced an era of significant private and public sector investment. The Port Modernization Law establishes two different types of port terminals, the public use terminal and the private use terminal. Private use terminals have the distinction of being exclusive to handling of own cargo and selected third party cargoes. Public ports must be available to any and all users; whereas private ports can select users and determine pricing.

The most common organizational structure for Brazilian public ports is the so-called “landlord port,” where the port authority bids out concessions to the private sector for the right to exploit public common use terminals for determined terms, up to 50 years. The concession holder must return assets to the port authority or federal government at the termination of the concession. In the case of selecting the best opportunities for USTDA, it is critical to note the role of the port authorities or planning institutions in planning new investments, marketing the opportunities, and obtaining the initial feasibility studies. However, the great investment in the port sector is largely made by the private terminal operators, inside and outside the organized port area. The modernization of the Brazilian port sector and the extinction of Portobrás as state-owned enterprise operating Brazilian ports have opened up many opportunities for investments in new ports and port-related infrastructure with openings for U.S. firms to export to Brazil.

¹ The Brazilian Secretariat of Ports counts 34 public ports. The National Committee for Public Security at Ports, Terminals and Navigable Waterways (CONPORTOS), a consultative body headed by the Ministry of Justice, lists 228 port installations as of Nov. 10, 2009. These installations include port terminals and the public ports themselves.

Specifically for the port and logistics sector, the REPORTO legislation (Lei 11.033/2004, extended via Lei 11.726 and Lei 11.774 of 2008) grants import tax incentives on capital equipment purchases to December 31, 2011 by port terminal operators, concessionaires, and operators, including rail operators in the retroport areas. Bolstered by fiscal and administrative reforms, privatization, control of inflation, favorable tax incentives, and growth of the financial sector in raising capital through transparent stock offerings (Novo Mercado: BOVESPA), Brazil is now in an economic climate that is favorable to investment in ports and transportation infrastructure. Some of the main drivers of port investment are the private companies involved in production and export of iron and steel and their customers, namely the Chinese, who are increasingly investing in Brazilian ports and infrastructure to shore up their trade corridor and supply of iron ore, soybeans and steel.

For their own competitiveness and survival, Brazilian iron and steel firms are integrating their production and transport. Vale, for example, created Log-In to operate maritime transport, ports, and link to its intermodal rail network. Petrobrás has revitalized the shipping, pipeline, ports, and shipbuilding sector via its transport arm, Transpetro. USIMINAS has been reported to be seeking to create a subsidiary, open capital company, to handle its transportation and logistics. The EBX Group of companies headed by Eike Batista launched LLX on the BOVESPA in order to raise capital for development of its port projects linked to drainage of iron ore of its associated companies and partners, such as MMX. Expert terminal operators have also launched open capital companies to expand investments in Brazilian public and private ports. The most notable include Santos Brasil and Wilson Sons. In March 2010, Odebrecht, with ownership stake in the private Embraport at Santos, has also created Odebrecht TransPort, a logistics company to handle its group's transport and logistics needs. Billions of dollars are being invested in port infrastructure.

As Brazil faces a port investment renaissance, the Brazilian Government created a Special Secretariat of Ports in October 2007 (Lei 11.518/2007) with ministerial status responsible for Brazilian ports involved in international commerce. The Special Secretariat was charged with port master planning and development, establishing the regulatory framework, and modernizing the administration, operations and management of port authorities. This Special Secretariat also pulled ports away from the purview/jurisdiction of the Ministry of Transportation invigorating the sector with a port-centric technical approach. On March 24, 2010, President Lula signed Provisional Measure 483 which granted permanent ministerial and cabinet status to the Secretariat of Ports among other thematic special secretariats responsible to the Presidency of the Republic, removing the interim "special" status. With this transformation to permanent secretariat also comes more staffing resources and the creation of an Executive Secretary.

In October 2008, President Lula signed into law the legislation (Decreto 6.620, Oct. 29, 2008) regulating the ports sector and clarifying rules of the game for new port investments. Serving part of the mandates of its creation, the Special Secretariat of Ports is responsible for the "Plano de Outorgas," a planning instrument that specifies and prioritizes where new ports can be developed. Working alongside the Special Secretariat of Ports at the level of regulation and supervision is the National Waterborne Transport Agency (ANTAQ), created by Law 10,233 of 2001 and charged with regulation and supervision of port activities. ANTAQ regulates operation

of private use terminals in addition to the leasing of areas and facilities of public/common use terminals. ANTAQ has been facing great pressures by existing concession holders in public ports to unify terms and conditions to level the playing field between public and private use terminals.²

² The main issues facing ANTAQ in port regulation are the use of non-union labor by private use ports and the extent to which private/mixed use ports can handle third-party cargoes. Public use concession holders argue private ports have unfair advantages in contracting non-union labor to move third-party cargoes. ANTAQ faces great lobbying pressure to harmonize these practices.

TABLE I.1 BRAZILIAN PUBLIC PORTS

Port	State	Administration	Jurisdiction	Type
Antonina	Paraná	Antonina and Paranaguá Port Authority (APPA)	State	Delegation
Angra dos Reis	Rio de Janeiro	Rio de Janeiro Port Authority (CDRJ)	Federal	Federal
Aratu	Bahia	Bahia Port Authority (CODEBA)	Federal	Federal
Areia Branca	Rio Grande do Norte	Rio Grande do Norte Port Authority (CODERN)	Federal	Federal
Barra do Riacho	Espírito Santo	Espírito Santo Port Authority (CODESA)	Federal	Federal
Belém	Pará	Pará Port Authority (CDP)	Federal	Federal
Cabedelo	Rio Grande do Norte	Rio Grande do Norte Port Authority (CODERN)	Federal	Federal
Forno	Rio de Janeiro	Municipal Port Authority (COMAP)	Municipal	Delegation
Fortaleza	Ceará	Ceará Port Authority Company (CDC)	Federal	Federal
Ilheus	Bahia	Bahia Port Authority (CODEBA)	Federal	Federal
Imbituba	Santa Catarina	Imbituba Port Authority (CDI)	Private	Concession
Itaguaí	Rio de Janeiro	Rio de Janeiro Port Authority (CDRJ)	Federal	Federal
Itajaí	Santa Catarina	Port of Itajaí Authority	Municipal	Delegation
Itaqui	Maranhão	Maranhao Port Authority (EMAP)	State	Delegation
Laguna	Santa Catarina	Santos Port Authority (CODESP)	Federal	Federal
Maceio	Alagoás	Rio Grande do Norte Port Authority (CODERN)	Federal	Federal
Manaus	Amazonas	Port of Manaus	Federal	Federal
Natal	Rio Grande do Norte	Rio Grande do Norte Port Authority (CODERN)	Federal	Federal
Niterói	Rio de Janeiro	Rio de Janeiro Port Authority (CDRJ)	Federal	Federal
Paranaguá	Paraná	Antonina and Paranaguá Port Authority (APPA)	State	Delegation
Pelotas	Rio Grande do Sul	Superintendency of Ports and Waterways (SPH)	State	Delegation
Porto Alegre	Rio Grande do Sul	Superintendency of Ports and Waterways (SPH)	State	Delegation
Recife	Pernambuco	Port of Recife S.A.	State	Delegation
Rio de Janeiro	Rio de Janeiro	Rio de Janeiro Port Authority (CDRJ)	Federal	Federal
Rio Grande	Rio Grande do Sul	Port of Rio Grande Authority (SUPRG)	State	Delegation
Salvador	Bahia	Bahia Port Authority (CODEBA)	Federal	Federal
Santana	Amapá	Santana Port Authority (CDSA)	Federal	Federal
Santarém	Pará	Pará Port Authority (CDP)	Federal	Federal
Santos	São Paulo	Santos Port Authority (CODESP)	Federal	Federal
São Francisco do Sul	Santa Catarina	São Francisco do Sul Port Authority (APSFS)	State	Concession
São Sebastião	São Paulo	São Sebastião Port Authority (CDSS)	State	Delegation
Suape	Pernambuco	Suape Industrial Port Complex (Suape)	State	Delegation
Vila do Conde	Pará	Pará Port Authority (CDP)	Federal	Federal
Vitória	Espírito Santo	Espírito Santo Port Authority (CODESA)	Federal	Federal

Source: Secretariat of Ports, Presidency of the Republic.

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Assessing a priori which Brazilian port projects showed the most promise for U.S. exports, two important studies were taken into consideration. First, the National Logistics Transportation Plan (*Plano Nacional de Logística dos Transportes*, PNLT) carried out by the Ministry of Transportation, Ministry of Defense and the Brazilian Army's Center for Excellence in Engineering and Construction (CENTRAN) was released in October 2008 as the Brazilian Government's long-term transportation plan. The PNLT serves as a macro-framework for guiding transportation investments during the period 2008-2025. While not binding, the PNLT is used by the Secretariat of Ports (SEP) and the Brazilian Waterborne Transport Agency (*Agencia Nacional de Transportes Aquaviarias*, ANTAQ) as a reference for its own infrastructure policy planning.

In the PNLT, CENTRAN outlined a hierarchy of Brazilian ports. Table I.2 lists the 15 Brazilian ports identified as "priority ports" for future investment.

TABLE I.2 PNLT HIERARCHY OF BRAZILIAN PORTS

Rank	Port	State
1.	Santos	São Paulo
2.	Rio Grande	Rio Grande do Sul
3.	Paranaguá	Paraná
4.	Vitória	Espírito Santo
5.	Itaguaí	Rio de Janeiro
6.	Itaqui	Maranhão
7.	Rio de Janeiro	Rio de Janeiro
8.	Barra do Riacho	Espírito Santo
9.	Suape	Pernambuco
10.	Itajaí	Santa Catarina
11.	São Francisco do Sul	Santa Catarina
12.	Aratu	Bahia
13.	Fortaleza	Ceará
14.	Imbituba	Santa Catarina
15.	Vila do Conde	Pará

Source: PNLT.

A second important study in the port and navigation sectors is the June 2009 report from the Institute for Applied Economic Research (Instituto de Pesquisa Econômica, IPEA) titled *Portos Brasileiros 2009: Ranking, Área de Influência, Porte e Valor Agregado Médio dos Produtos Movimentados*. This study ranks Brazilian ports and makes reference to their range of influence or "hinterland," the specialization of their commodity mix, and their levels of internationalization. IPEA created an index for ranking that measured size, hinterland, participation in foreign trade, number of economic sectors served, regional/national/local position, and average value-added. Table I.3 highlights the top 15 ranked Brazilian ports according to IPEA.

TABLE I.3 RANKING OF BRAZILIAN PORTS 2009 (IPEA)

Rank	Port (State)	Size	Hinterland	Share in Foreign Trade	Economic Sectors	National/Regional Local	Avg. Value Added	Total
1.	Santos (SP)	30	36	34.8	14	30	20	164.8
2.	Paranaguá (PR)	30	21	8.8	13	20	15	107.8
3.	Rio de Janeiro (RJ)	30	10	6.5	13	20	20	99.5
4.	Itajaí (SC)	30	14	4.2	11	20	20	99.2
5.	Vitória (ES)	30	15	9.1	12	20	10	96.1
6.	Rio Grande (RS)	30	9	7.1	13	20	15	94.1
7.	São Francisco do Sul (SC)	30	10	2.9	8	10	15	75.9
8.	Salvador (BA)	20	6	2.3	12	10	20	70.3
9.	Manaus (AM)	20	7	2.6	9	10	20	68.6
10.	Aratu (BA)	30	5	3.0	3	10	15	66.0
11.	São Sebastião (SP)	30	3	3.8	2	10	15	63.8
12.	Pecém (CE)	20	7	1.0	5	10	20	63.0
13.	Itaguaí (RJ)	20	11	2.3	8	10	10	61.3
14.	São Luís (MA)	30	8	3.6	4	10	5	60.6
15.	Suape (PE)	20	7	1.1	7	10	15	60.1

Source: Carlos Alvares da Silva Campos Neto et al., *Portos Brasileiros 2009: Ranking, Área de Influência, Porte e Valor Agregado Médio dos Produtos Movimentados*, Instituto de Pesquisa Econômica Aplicada Texto para Discussão No. 1408, Brasília, June 2009, p. 65.

In addition to the two aforementioned studies, in order to assess the overall potential for U.S. exports, table I.4 presents the top Brazilian ports/airports of entry for U.S. exports to Brazil for 2008.

TABLE I.4 2008 BRAZILIAN IMPORTS FROM THE UNITED STATES BY PORT/AIRPORT OF ENTRY

Rank	Port/Airport	Value (USD\$ FOB)	Volume (kg)
1.	Port of Santos	7,328,043,656	4,268,433,770
2.	Campinas Airport	4,203,588,479	27,625,105
3.	São Paulo Airport	2,799,509,841	18,082,817
4.	Port of Rio de Janeiro	1,727,134,750	601,462,784
5.	Port of Vitória	1,401,058,978	4,752,092,660
6.	Port of São Luis	825,643,793	970,688,278
7.	Port of Rio Grande	755,510,857	259,921,661
8.	Rio de Janeiro Airport	662,225,360	5,555,137
9.	Port of Manaus	642,642,693	416,809,453
10.	Ports of Recife/Suape	456,125,332	300,206,485
11.	Ports of Itajaí/Navegantes	442,720,045	200,926,748
12.	Port of Paranaguá	439,111,992	504,659,477
13.	Port of Itaguaí	426,070,335	1,588,136,124
14.	Port of São Francisco do Sul	284,560,100	184,597,530
15.	Port of Salvador	267,035,482	262,251,040

Source: Sistema Aliceweb.

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III.A Definitional Mission Strategy: From Terminal Construction to Technology-Intensive Integrated Systems

With a lagging infrastructure and late arriving containerization, many Brazilian port modernization projects have involved significant investments in port terminal construction and the acquisition of heavy equipment. During the 1990s, the USTDA presented many Brazilian port-related opportunities to U.S. companies at a series of port conferences, such as the TDA World Port Conference of October 1999, and the two “Infrastructure Opportunities in South America Conferences” held in New Orleans in 1994 and Atlanta in November 1997. Notwithstanding the consulting work carried out by U.S. companies, and the important port sector intelligence and project information exchanged, port projects emphasizing terminal construction have often yielded limited U.S. exports as U.S. companies are not competitive in port construction and provision of heavy equipment when compared to their Asian or Brazilian counterparts.

Given the realities of the competitive marketplace and emerging demands related to port security and protection of the environment, the USTDA has been working with other agencies of the U.S. government to support regional initiatives for transportation and supply chain security and sustainable development in the port sector. The evolution of the agency’s priorities can be witnessed in the following USTDA projects in the Brazilian port and navigation sectors:

- 2004 “Brazilian Port Security Orientation Visit (OV)”;
- 2004 ISPS Code Certification and Implementation;
- 2005 Latin America Region “Port security-VTS” conference in Jacksonville;
- 2007 Feasibility Study for State of Rio de Janeiro Emergency Operations Center; and,
- 2009 Intelligent Cargo Project.

Within the context of USTDA policy priorities and market realities, Portal Commerce prioritized projects with high degrees of technological complexity, where the U.S. retains considerable competitiveness and leadership. Brazilian government investments in the port sector are evolving beyond construction and heavy equipment acquisition to realize investments in emerging port technologies in the area of security, vessel management systems, and environmental management. Brazil is seeking to improve its international competitiveness and maintain quality to international standards. In the areas of environment and security, Brazilian public and private sectors are being certified at standards established by the International Organization for Standardization, such as ISO 9000 (quality), ISO 14000 (environment) and ISO 28000 (security).

The Brazilian port community is moving steadily towards harmonization with international standards put forth by the international maritime community. Brazil’s effort is driving demand

serve as an important part of Brazil's R\$146 million VTMS procurement plans outlined in the Brazilian Federal Government's Second Growth Acceleration Program (PAC-II).⁸

IV.C PROJECT SPONSOR'S COMMITMENT

The robustness of the government's commitment to implementation of the proposed projects results from a number of key factors, including:

- (i) Cargo movement at selected VTMS ports;
- (ii) Geographic coverage of multiple regions;
- (iii) Regional economic development driving demand for the project;
- (iv) Adherence to international standards;
- (v) Global showcase events such as the 2014 World Cup and 2016 Rio de Janeiro Olympics; and,
- (vi) Project consistency with other transportation and logistics priorities.

SEP clearly listed Rio de Janeiro and Itaguaí as the first ports outside of Santos for a USTDA-funded feasibility study. First, as a logistics hub for the industrialized and highly productive Southeastern region of Brazil, the Rio de Janeiro coastline that a Rio de Janeiro/Itaguaí VTMS would serve is responsible for the movement of 135 million tons of cargo annually, making it the third most important state for waterborne commerce, responsible for 17.6 percent of Brazil's total maritime volume.⁹ Moreover, the State of Rio de Janeiro is Brazil's leading producer of petroleum, with an annual volume of 547 million barrels or 82.5 percent of national production. Consequently, the combined demands of waterborne commerce and the further exploration and development offshore discoveries in the Campos, Espirito Santo, and Santos Basins will place growing logistical demands on maritime trade, harbor support, tug assist, and offshore support.

Adherence to international standards is another key factor ensuring a strong government commitment to implement the proposed projects. Maritime treaties and agreements such the International Ship and Port Facility Code (ISPS) and the Safety of Life at Sea Convention of the International Maritime Organization (SOLAS V), which mandates automatic ship identification systems (AIS), put pressure on Brazil to adopt modern technologies and aids to navigation. Specific to vessel traffic control, the International Maritime Organization's Resolution A.857, adopted in 1997, establishes guidelines for Vessel Traffic Services. This was followed up by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendation V-128 released in 2004, which elaborates the technical requirements for VTS equipments. In its Directive 87 of February 24, 2010, SEP lists these IALA V-128 Recommendation and IMO Resolution A.857.

⁸Secretariat of Ports (SEP) Vice Minister Augusto Wagner Padilha Martins announced publicly the major port investments in the PAC-II during a presentation on April 23, 2010 at the Brazil-U.S. Business Council. The PAC-II budget resources for VTMS acquisitions at eleven priority ports are estimated at R\$146 million. The figures confirm information provided during private meetings in March of 2010.

⁹ *Anuário Exame Infraestrutura 2009-2010*, December 2009, p. 194.

Besides cargo, location, and adherence to international standards, another set of supporting factors for VTMS implementation surrounds the high profile international events that will place enormous pressure on maritime infrastructure and security. Having already been chosen as one of 12 Brazilian cities to host the 2014 Fédération Internationale de Football Association (FIFA) World Cup, on October 2, 2009, during the execution phase of the USTDA DM, the International Olympic Committee selected Rio de Janeiro to host the 2016 Olympic Games. The State of Rio de Janeiro and the Government of Brazil have obligations to protect and monitor their territories. Both of these highly public international events will generate added maritime traffic and security issues in what is already recognized as a complex security environment. During consults with Rio de Janeiro State Government officials, it was acknowledged that maritime activity would spike with the addition of many cruise ships arriving for the World Cup and Olympics in order to cover the perceived shortage in hotel rooms. Rio de Janeiro's successful international Olympic bid (*Caderno Olímpico*) undoubtedly rested, in part, on the compelling argument that local, state, and federal authorities could develop and implement the systems and processes as necessary to handle the complex transportation and security challenges of such mass public and international events.¹⁰

IV.D IMPLEMENTATION FINANCING

In the Brazilian Federal Government's Second Growth Acceleration Program (PAC 2), a significant amount of funding is to be authorized for intelligent logistics for the port sector. These investments were agreed upon at the March 29 meeting of the Growth Acceleration Program Management Committee (*Comite Gestor do Programa de Aceleração de Crescimento*). Table IV.1 shows the structure of the PAC-2 program for intelligent port logistics.

TABLE IV.1 PAC-2 TRANSPORTATION: INTELLIGENT PORT LOGISTICS¹¹

Program	Budget Resources
Intelligent Cargo Systems	R\$ 115,000,000
Porto Sem Papel (Paperless Port)	R\$ 92,000,000
Vessel Traffic Management and Information System (VTMS)	R\$ 146,000,000
National Port Logistics Plan ¹²	R\$ 30,000,000
Management of Solid Waste	R\$ 118,000,000

* PAC Management Committee, March 29, 2010

¹⁰ The country's transportation and security commitments for the Olympic Games are detailed in Volume Three of the Rio de Janeiro Olympic bid titled *Viva a Sua Paixão*.

¹¹ Budget values derive from April 1, 2010 meeting with SEP Undersecretary for Port Planning and Development Fabrizio Pierdomenico and Director of Port Information Systems Commander Luis Resano.

¹² In 2008, SEP launched an international bidding for a national port master plan. Several international ports, such as Rotterdam, competed for the consultancy. However, the bidding ended in a cancellation of the national port master plan as Halcrow Company disputed the process. As a result, SEP hired the Federal University of Santa Catarina State to undertake the national port logistics plan. As UFSC is a federal entity, a contract between UFSC and SEP is easier to manage than an international tender subject to the Public Bidding Law (Lei da Licitação No. 8.666).

From an initial pool of 11 ports, the PAC-2 discussions narrowed VTMS down to Santos plus four port complexes, one in the Northeast (Salvador/Aratu, Bahia State), two in the Southeast (Rio de Janeiro and Itaguaí, Rio de Janeiro State), and one in the South (Rio Grande, Rio Grande do Sul State). While not yet published at the time of this writing, the bid tender for the Port of Santos VTMS is expected to be released in 2010 at a value of greater than R\$27 million or more than USD\$15 million. Santos will be the first port to run through the bidding process. If Santos process went smoothly and under budget, SEP indicated that it might be able to extend VTMS under current budget circumstances to Itajaí and/or Paranaguá.

With PAC-2 Ports and SEP already announcing R\$146 million for implementation of VTMS, the financial commitment to implement Vessel Traffic Management Systems is very strong. Moreover, the VTMS budget item is part of a comprehensive strategy at implementing integrated intelligent transportation systems. The current USTDA project *Intelligent Cargo Systems* can be seen as having generated a second-phase procurement. The *Porto Sem Papel* or Paperless Port Project also figures into the integrated package linking vessel traffic control with cargo tracking. The grand design as stated by SEP is to have certification and monitoring of cargo and land/sea/air vessel movement over complete supply chains. A VTMS is a fundamental and integral component of such design.

IV.E U.S. EXPORT POTENTIAL

Based on a series of U.S. and foreign supplier estimates, the estimated export potential for the installation of vessel traffic management systems generally ranges between three million dollars (\$3 million) and ten million dollars (\$10 million) per port depending on the size and complexity of the ports in question. The total export potential of the proposed four-port feasibility study is estimated to be approximately twenty six million dollars (\$26 million) according to the following estimates:

○ Port 1.	Rio de Janeiro	(\$8,000,000.00)
○ Port 2.	Itaguaí	(\$6,000,000.00)
○ Port 3.	Rio Grande	(\$6,000,000.00)
○ Port 4.	Salvador	(\$4,000,000.00)
	Aratu	(\$2,000,000.00)

Table IV.2 below outlines the typical components of a vessel traffic management system.

TABLE IV.2 POTENTIAL U.S. EXPORTS

<u>Types of Equipment</u>	<u>Potential Exports of Services</u>
Radar Transmitters	System Installation
Radar Antenna	Testing & Client Acceptance
Radio Direction Finder	Operations & Maintenance
Computer Servers	Operations Training
Computer Work Stations	Maintenance Training
VHF Communications Equipment	
AIS Base Stations and Equipment	
Weather Monitoring Equipment	
Uninterrupted Power Supply (UPS)	
CCTV(TV/ThermoVision Cameras)	
Telecommunications Network	

A large group of U.S. companies are potential suppliers of the goods and services to be generated by the proposed feasibility study. Companies expected to compete for contracts to develop and implement the VTMS include Lockheed Martin, Northrop Grumman, Airsis, and ESRI. Potential suppliers of essential components and services for the proposed VTMS include CapRock Communications, Cisco, COHU Inc., Dell, HP, IBM, L-3 Communications, Motorola, Oracle, Raytheon, Shine Micro, Stratos Global, TerraMar Networks, and Unisys.

As indicated in Annex IV, a number of leading suppliers were interviewed during execution of the DM and they expressed a high level of interest in VTS-related projects in Brazil. In particular, Lockheed Martin, Northrop Grumman, and Cisco indicated that they are actively competing for VTS projects in Brazil.

IV.F FOREIGN COMPETITION AND MARKET ENTRY ISSUES

With 34 public ports engaged in maritime transport and a coastline of 8,500 km, Brazil is viewed with great interest by maritime technology providers. Brazil has been a latecomer to containerization and adoption of technologies. However, investments in new infrastructure and technologies, especially naval construction, have flourished since the 1993 Port Modernization Law and stabilization of the economy. With continental dimensions, Brazil has yet to adopt specific national standards and for VTMS and is viewed as a very attractive emerging market. As a result, there is fierce competition for the future Brazilian market involving Asian, European and North American companies. Interaction with the Brazilian Secretariat of Ports and multinational companies has been frequent in the past three years.

American companies will face stiff competition from European companies, including many that receive subsidy and business development from their country's commercial offices or port representations. In the specific case of VTMS, Europe has a distinct advantage in that much of the subsidized technological and institutional innovation is guiding the normative establishment of international standards in the sector. Institutions such as the European Maritime Safety Agency are playing tutelary roles in technology development and institutes such as VTT in Finland are contributing to navigational innovation. Consequently, the U.S. could utilize the auspices of the Organization of American States' Inter-American Committee on Ports (OAS-CIP) or the Western Hemispheric Transportation Initiative (WHTI) to engage Brazil in jointly designing VTMS standards and technologies for the Americas. In this way, bilateral and hemispheric cooperation may create markets and lessen the degree to which Europe assumes leadership in this industry.

Implementing a VTMS requires a network of suppliers and systems integrators. Products included in such systems include telephones and wireless communication, VHF Radios, IT Software, AIS, GPS, DGPS, closed-circuit television, radar systems, electronic charts, and weather monitoring equipment and stations. Table IV.3 below presents a partial list of the major international suppliers of VTMS components and systems.

TABLE IV.3 FOREIGN COMPETITION FOR VTMS

Company	Country	Website
ACR Electronics	Austria	www.nauticast.com
Atlas Elektronik	Germany	www.atlas-elektronik.com
CLS	France	www.cls.fr
CNS	Sweden	www.cns.se
Dolphin Maritime	UK	www.dolphinmaritime.com
Frequentis	Austria	www.frequentis.com
Furuno	Japan	www.furuno.com
HITT	Netherlands	www.hitt.nl
JRC	Japan	www.jrc.co.jp
Jotron	Norway	www.jotron.com
JVC Kenwood	Japan	www.kenwood.co.jp
Kelvin Hughes	UK	www.kelvinhughes.com
Kongsberg	Norway	www.km.kongsberg.com
Maris	Norway	www.maris.no
Mcmurdo	UK	www.mcmurdo.co
Portic	Spain	www.portic.net
Saab	Sweden	www.saabgroup.com
SAM Electronics	Germany	www.sam-electronics.de
Schneider Electric	France	www.pelco.com
Shindong Digitech	South Korea	www.shindong.com
SDA	Thailand	www.sdagroup.com
SODENA	France	www.sodena.net
SOFRELOG	France	www.sofrelog.com
SRH Marine Electronics	Greece	www.srhmar.com
SRT-Marine	UK	www.softwarerad.com
Telemar UK Limited	UK	www.telemaruk.com
Terma	Denmark	www.terma.com
Thales Group	France	www.thalesgroup.com
Themys	France	www.themys-sa.com
Thrane & Thrane	Denmark	www.thrane.com
Tokyo Keiki	Japan	www.tokyo-keiki.co.jp
Transas	Russia	www.transas.com
Transoceana Limited	New Zealand	www.transoceana.com
True Heading AB	Sweden	www.trueheading.se
Xanatos	Canada	www.xanatosmaritime.com
Zeni Lite Buoy	Japan	www.zenilite.co.jp

Of the companies identified in table IV.3, the leading systems providers that have been found during the execution of the Definitional Mission to be most active in Brazil are Furuno,

Kongsberg and Transas.¹³ In terms of software, Portic, from the Barcelona port community, has received much attention from the Brazilian Government. Transas VTS/VTMS systems are in place in 90 ports globally including coverage in Australia, Bahrain, Bulgaria, China, Cyprus, India, Lithuania, Malaysia, Spain, and Thailand. Kongsberg counts Canary Islands, Mexico, Norway, Saudi Arabia, and Singapore among its recent clients. Because of the globalized nature of these firms, even if a foreign systems integrator wins Brazilian VTMS contracts, there is likely to be U.S. content. This would also be the same in reverse for U.S. companies like L-3, Lockheed Martin, Northrup Grumman, and Raytheon.

IV.G DEVELOPMENTAL IMPACT

A USTDA feasibility study for establishing VTMS in several Brazilian ports will bring normative changes to a rapidly modernizing port sector. As discussed in the general introduction to the DM, Brazil is modernizing its ports sector with investments in equipments, dredging, and information technologies. Most of the heavy procurement in equipments and technologies will be made by the private sector as the federal, state, and local port authorities are moving to a more landlord role. Noting the shift to a more normative, regulatory role, the Brazilian port authorities will be modernizing in systems technologies and adopting new technologies recommended or required by international maritime community.

A VTMS will bring more efficiency and productivity, safety, security and transparency to maritime operations in Brazil. As a technology that monitors vessel traffic, it can create data streams for harbor scheduling, analyzing meteorological and hydrological conditions, monitoring passenger vessels, evaluating suspicious or hazardous cargoes more carefully. SEP has indicated that it plans to store data collected by VTMS for making productivity improvements. Moreover, SEP has stressed the importance for sharing information with the requisite authorities that need to know such information on vessel traffic. For example, the State Governments that seek more monitoring and data on passenger ferries will be able to receive data from such a centralized system. Table IV.4 summarizes some of the primary developmental benefits from adoption of VTMS.

¹³ Transas is represented in Brazil by Navsoft, which has marketed VTMS aggressively to Brazilian port authorities.

TABLE IV.4 PRIMARY DEVELOPMENTAL BENEFITS

Sector	Impact	Characteristic
Environment	Mitigates risk for vessel collisions, allisions, and groundings and provides platform for better environmental monitoring.	VTMS also creates performance data that can be used for systems improvements reducing harm to environment caused by vessel movement.
Infrastructure	Safety and security of maritime facilities.	Harbor scheduling could be a product of VTMS that brings higher productivity to port terminals.
Human Capacity Building	Training and technical assistance.	Technology transfer of VTMS will be one more step towards modernization of Brazilian port sector, bringing more openness to technological innovations, where U.S. is competitive.
Market-Oriented Reforms	Brazil more fully integrated into the international maritime community; safety procedures and instruments aligned with SOLAS V International Convention.	Brazilian ports made more competitive and transparent in operations and more attractive for international shipping services and foreign direct investment.
Productivity Improvements and Financial Revenue Enhancements	Capacity to handle more vessel movements better, greater cargo volumes, increase port revenues and expedite invoicing, greater backflow to government, fewer days demurrage, reduction in overall Brazil Cost related to port operations.	A VTMS has the potential to spin off data into saleable software products that can provide SEP or the executing maritime authority with potential revenue stream that can help recover part of the operating costs by selling subscription data to the maritime community.
Technology Transfer	Ground floor adoption of new technologies sets standards for current and future systems.	Will require coordination of Brazilian institutions, equipment suppliers, systems integrators, training and technical assistance. U.S. systems integrators will likely be procuring foreign equipment if selected in international tender.

IV.H IMPACT ON THE ENVIRONMENT

Installation of VTMS technologies will bring broad benefits to the maritime community. In addition to safety improvements, reducing risk of accidents, collisions, allisions and groundings, VTMS provides additional instrumentation to measure weather conditions, hydrological factors that can provide advance warning to SEP, which can then transmit such information as needed to responsible authorities, seafarers and residents. VTMS can be one additional tool to mitigate flood and also congestions issues. If successful in linking VTMS to cargo tracking and traceability at a future stage, more positive externalities can result in more efficient port operation, reducing truck lines and landside congestion, thus carbon dioxide emissions. With minimum needs for constructing towers and installing cameras and equipment, there should only be cosmetic impacts on the environment.

IV.I IMPACT ON U.S. LABOR

Adoption of VTMS at four Brazilian ports will have no discernible negative impacts on U.S. labor. As a technology that has yet to be implanted in Brazil, there is no import substitution, for example. There will, however, be potential beneficial impacts to those U.S. firms that provide technical assistance with VTMS, aids to navigation, and systems integration in general. Since SEP in its Directive 87 has required five-year service contracts for execution and operation of VTMS. The winning bidder for installing VTMS must furnish five years of technical assistance. This could bring slight positive impacts to U.S. firms if selected to provide labor, training and technical assistance.

IV.J QUALIFICATIONS

As outlined in the Terms of Reference (Annex D), the proposed technical assistance is an ambitious project covering four ports and involving sophisticated radar, communication, and network technologies. Consequently, the skill sets and professional expertise of the Consultant Team are expected to be diverse and extensive. The following general attributes for the Consultant Team are considered essential for the successful outcome of the Technical Assistance proposed, including:

Project Manager: The proposed Project Manager should have a minimum of 15 years of experience in developing and managing port, security, and informational technology projects.

Senior Engineer: The proposed Senior Engineer should have a minimum of 15 years of experience in developing and implementing information technology systems in the port and marine environments.

IT Specialist/Systems Analyst: The Systems Analyst should have a minimum of 10 years of experience in developing and managing port and marine environment informational technology systems and 5 years of experience with VTS.

Senior Radar Technician/Consultant: The proposed Senior Radar Technician will have at least 15 years of experience in developing and implementing VTMS, radar coverage assessments, and site surveys in marine and port environments.

Radio Communications Engineer: The Radio Communications Engineer should have a minimum of 10 years experience in developing and implementing communications systems in marine and port environments with demonstrated experience with VTS.

Senior Network Specialist: The Senior Network Specialist should have a minimum of 10 years experience in developing and implementing computer network systems with demonstrated experience in either marine and/or aviation transportation environments.

Maritime Transportation Economist: The Maritime Transportation Economist should have a minimum of 10 years of experience in Brazil and/or Latin American maritime transportation planning, economic analysis, and forecasting.

Economist/Public Policy Analyst: The Economist and Public Policy Analyst should have a detailed understanding of transportation and infrastructure policies in Brazil with a demonstrated minimum of 10 years of work experience in Brazil.

The sophistication and fluidity of modern technologies related to VTMS requires that members of the Consultant Team be certified VTS Operators. Moreover, it is most important that they be familiar and current with the state-of-the-art in the industries. Therefore, current or former participation in organizations such as the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) and the International Association for Marine Electronics Companies (CIRM) is highly recommended, or the United States Coast Guard.

IV.K JUSTIFICATION

IV.K.1 FINAL CONSIDERATION AND PORTAL COMMERCE RECOMMENDATIONS

For two years, the State of Rio de Janeiro has pursued with the U.S. Foreign Commercial Service and the USTDA the idea of a vessel traffic management system for its coastline. Facing great internal and external pressures for safety and security of its ports and waterways and a most certain boom in maritime traffic, the State of Rio de Janeiro has demonstrated a strong desire to move forward with this project. However, Brazilian legislation does not permit the State of Rio de Janeiro to install and manage a VTMS. Those responsibilities fall to either the Brazilian Navy or competent maritime authority.

The Brazilian Federal Government, through its Secretary of Ports, is preparing the landscape for installation of VTMS nationwide at Brazilian Port Authorities. SEP is interested in a USTDA-funded feasibility study for its four port complexes selected for installation of a VTMS in the 2011-14 period. The priority port is Rio de Janeiro followed by Itaguaí then Rio Grande and Salvador/Aratu. The Second Growth Acceleration Program (PAC 2) has R\$146 million in funding set aside for VTMS. A Rio de Janeiro coastal wide VTMS project can only be taken forward by the Rio de Janeiro Port Authority (SEP) or Brazilian Navy.

With SEP interest in undertaking a VTMS, the project moved from a statewide VTMS to one of national scope. While SEP was sensitive to including Rio de Janeiro and Itaguaí as one of the four port complexes for PAC-2 VTMS, the Brazilian Federal Government communicated their interest in bundling more than one port complex into a USTDA study. Their argument centered on the need for a feasibility study before a public bid can be announced. Noting that Santos VTMS was underway with own source revenues from the Santos Port Authority, the budget resources for carrying out the needed feasibility studies for the second wave of VTMS procurements emanate from SEP and were scheduled for 2011. A USTDA feasibility study,

therefore, would be valuable to SEP in expediting the procurement process, especially if more than one port complex were covered.

SEP voiced sensitivity and concern about the interests of the State of Rio de Janeiro. SEP stated it would share the kind of information streams that the State of Rio de Janeiro wanted from a VTMS, such as the data for passenger ferries. SEP also submitted that it would be SEP and not the Rio de Janeiro Port Authority as the project sponsor of the feasibility study.

With the imminent federal focus on VTMS, it is certain that Brazil is about to adopt technology in the port sector to harmonize with international norms and practices. Several U.S. companies are competitive globally, while both Lockheed Martin and Northrop Grumman work very closely with the Brazilian Navy and federal government. While U.S. firms are competitive, many component parts of a VTMS are more competitive from Asia or European manufacturers. As expressed by various maritime experts, it is likely that U.S. exports will comprise a substantial part of these systems. However, it is likely that bid winners for a VTMS will be systems integrators having secured agreements with multiple international suppliers. U.S. companies will be present but not exclusive. In order to keep the U.S. exporters as close to this potential business as possible, Portal Commerce makes three sets of recommendations.

IV.K.1.1 FEASIBILITY STUDY FOR THE PAC-2 VTMS PORTS

The Secretariat of Ports seeks USTDA feasibility study funding in order to prepare its “*projeto basico*,” a sine qua non for release of an international tender for VTMS. The feasibility study is necessary before a public tender can be made. As stated by SEP, the only port scheduled to elaborate such a bid in 2010 is the Port of Santos. Portal Commerce recommends a USTDA-funded feasibility study for Rio de Janeiro, Itaguaí, Rio Grande and Salvador/Aratu. This would have the impact of accelerating the bidding process to begin in 2011 instead of 2012, while positioning U.S. exporters competitively for the international tender at multiple ports. If it is not possible to do a feasibility study for the entire bundle of port complexes, we recommend Rio de Janeiro and Itaguaí presented in more detail in Annex III. In that way, while the State of Rio de Janeiro is not the executing agency, the feasibility study will serve the same demands requested of a VTMS by the State and thus respect the origination of the USTDA request. Moreover, it is hoped that such an outcome will foster good relationships between USTDA and the State of Rio de Janeiro. The ideal timeline for a completed feasibility study will be before the end of 2010.

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ANNEX IV: DEFINITIONAL MISSION U.S. CONTACTS

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PROJECT SUMMARY

The *Port Logistics and Navigation Opportunities in Brazil* Definitional Mission (USTDA CO2009510008) executed by Portal Commerce & Logistics during 2009/2010 evaluated a series of project proposals submitted to the USTDA by Brazilian port authorities and state government planning secretariats.

The proposed *Secretariat of Ports - Vessel Traffic Management System Feasibility Study* is an ambitious four-port pilot project with the objective of producing the technical specifications required to guide the Brazilian Secretariat of Ports (SEP) in the acquisition and installation of vessel traffic management systems (VTMS)¹ at the ports of Rio de Janeiro, Itaguaí, Rio Grande, and Salvador/Aratu. The proposed feasibility study project has excellent potential to generate U.S. exports and contribute positively to the safety, security, and efficiency of operations at Brazilian ports, while bringing economic development and environmental management benefits. The 4-port pilot project has an estimated U.S. export potential of \$26 million dollars and will serve as an important part of Brazil's R\$146 million VTMS procurement plans outlined in the Brazilian Federal Government's Second Growth Acceleration Program (PAC-2).²

PROJECT BACKGROUND

The Definitional Mission VTMS project proposal originated with the State of Rio de Janeiro Secretariat of Planning (SEPLAG) as the potential project sponsor. Jurisdictional and regulatory issues shifted this project from the state to federal sphere and the jurisdiction of the Brazilian Secretariat of Ports (SEP).³

¹For purposes of consistency, this DM uses VTMS to also refer to Vessel Traffic Service or System. In its Resolution A.857(20) of November 1997, the IMO defines VTS as "a service implemented by a Competent Authority, designed to improve the safety and efficiency of vessel traffic and to protect the environment. The service should have the capability to interact with vessel traffic and respond to traffic situations developing in VTS areas." To clarify, VTMS differs from VTS as it enables greater systems integration and data interchange among intervening parties. The SEP project envisions not only installation of a stand-alone VTS, but one that extends data exchange to other authorities and interested parties, complementing existing efforts at providing an umbrella for streamlining maritime, vessel and cargo data, such as Paperless Port (Porto Sem Papel) and Intelligent Cargo Systems.

²Secretariat of Ports (SEP) Vice Minister Augusto Wagner Padilha Martins announced publicly the major port investments in the PAC-II during a presentation on April 23, 2010 at the Brazil-U.S. Business Council. The PAC-II budget resources for VTMS acquisitions at eleven priority ports are estimated at R\$146 million. The figures confirm information provided during private meetings in March 2010.

³The Brazilian rules for vessel traffic control are stated in the Brazilian Navy's Directorate of Hydrography and Navigation Directive No. 77 of July 31, 2009, also known as NORMAM 26. In Chapter 2, Section 0201 of NORMAM 26, titled "Responsibility for Installation," a VTS project can only be developed by the Brazilian Navy, a port authority, or private port terminal operator. Preparing the regulatory framework for nationwide implementation and adoption of vessel traffic management and information systems, the Secretariat of Ports (SEP) released Directive No. 87 on February 24, 2010. Directive No. 87 establishes general guidelines for VTMS. The clear implications of the NORMAM 26 and Portaria No. 87 are that installation and operation of vessel traffic systems are the domain of the Brazilian Navy or maritime authorities (Port Authorities, SEP, private terminals).

FEASIBILITY STUDY BUDGET

SEP Vessel Traffic Management and Information System Feasibility Study				
			Project Direct Labor Costs	\$527,500
			Project Other Direct Costs	\$145,900
			Total Project Costs	\$673,400
DIRECT LABOR COSTS:				
TOR Task	TOR Task Name	Primary Contractor (Employee) Labor		
		Total Person Days x Daily Rate		= TOTAL COST
I	Project Kickoff	Project Manager	7 x \$1500	\$10,500
	&	Systems Engineer	5 x \$1200	\$6,000
	Formal Meeting #1	Maritime Economist	5 x \$1000	\$5,000
II	Maritime Traffic	Maritime Economist	10 x \$1000	\$10,000
		Public Policy Analyst	8 x \$1000	\$8,000
III	Marine Navigation	Maritime Economist	10 x \$1000	\$10,000
		Public Policy Analyst	8 x \$1000	\$8,000
IV	Radar Coverage	Systems Engineer	8 x \$1200	\$9,600
		Radar Analyst	15 x \$1000	\$15,000
		Radio Communication	10 x \$1000	\$10,000
V	Facilities Review	Systems Engineer	12 x \$1200	\$14,400
		IT Analyst	12 x \$1000	\$12,000
		Network Specialist	12 x \$1000	\$12,000
		Radar Analyst	5 x \$1000	\$5,000
		Radio Communication	5 x \$1000	\$5,000
VI	VTS Compliance	Project Manager	5 x \$1500	\$7,500
		Maritime Economist	8 x \$1000	\$10,000
		Public Policy Analyst	8 x \$1000	\$8,000
		Systems Engineer	5 x \$1200	\$6,000
		Radio Communication	5 x \$1000	\$5,000
		Radar Analyst	5 x \$1000	\$5,000
VII	System Demands	Project Manager	10 x \$1500	\$15,000
	&	Systems Engineer	12 x \$1200	\$14,400
	Formal Meeting #2	IT Analyst	10 x \$1000	\$10,000
		Radar Analyst	10 x \$1000	\$10,000
		Radio Communication	5 x \$1000	\$5,000
		Network Specialist	5 x \$1000	\$5,000
		Maritime Economist	5 x \$1000	\$5,000

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VIII	VTMS Architecture	Project Manager	5 x \$1500	\$7,500
		Systems Engineer	10 x \$1200	\$12,000
		IT Analyst	5 x \$1000	\$10,000
		Radar Analyst	5 x \$1000	\$10,000
		Radio Communication	5 x \$1000	\$5,000
		Network Specialist	5 x \$1000	\$5,000
VIX	Command Center	Project Manager	2 x \$1500	\$3,000
		Systems Engineer	8 x \$1200	\$9,600
		IT Specialist	8 x \$1000	\$8,000
		Radar Analyst	8 x \$1000	\$8,000
		Radio Communication	8 x \$1000	\$8,000
		Network Analyst	8 x \$1000	\$8,000
X	Financial Analysis	Project Manager	2 x \$1500	\$3,000
		IT Specialist	3 x \$1000	\$3,000
		Maritime Economist	10 x \$1000	\$10,000
		Public Policy Analyst	6 X \$1000	\$6,000
XI	System Requirements & Formal Meeting #3	Project Manager	5 x \$1500	\$7,500
		Systems Engineer	10 x \$1000	\$10,000
		IT Analyst	5 x \$1000	\$5,000
		Radar Analyst	5 x \$1000	\$5,000
		Radio Communication	5 x \$1000	\$5,000
		Network Specialist	5 x \$1000	\$5,000
XII	Capacity Building	Project Manager	3 x \$1500	\$4,500
		Network Specialist	5 x \$1000	\$5,000
		Maritime Economist	10 x \$1000	\$10,000
		Public Policy Analyst	10 x \$1000	\$10,000
XIII	Environmental Assessment	Project Manager	1 x \$1500	\$1,500
		Maritime Economist	5 x \$1000	\$4,000
		Public Policy Analyst	5 x \$1000	\$4,000
XIV	Development Impacts	Project Manager	1 x \$1500	\$1,500
		Maritime Economist	5 x \$1000	\$5,000
		Public Policy Analyst	5 x \$1000	\$5,000
XV	Final Report	Project Manager	10 x \$1500	\$15,000
		Systems Engineer	10 x \$1200	\$12,000
		IT Analyst	10 x \$1000	\$10,000
		Radar Analyst	10 x \$1000	\$10,000
		Radio Communication	10 x \$1000	\$10,000
		Network Specialist	10 x \$1000	\$10,000
		Maritime Economist	5 x \$1000	\$5,000
		Public Policy Analyst	5 x \$1000	\$5,000

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				Project Direct Labor Costs		\$527,500	
OTHER DIRECT COSTS:							
Purchased Services/Contracts				Tasks			TOTAL COST
Travel			Trips		Trip Cost		TOTAL COST
International Travel			28		\$1,500		\$42,000
In-Country Air Travel			34		\$500		\$17,000
Ground Transportation			300		\$50		\$15,000
			Trip Days		Per Diem Rate		TOTAL COST
Per Diem			187		\$300		\$56,100
Other							
Interpreters							
Reproduction & Binding							\$1,000
Courier Services							\$1,500
Visa Services							\$800
Communication							\$2,250
OTHER DIRECT COSTS:							
Purchased Services/Contracts							TOTAL COST
					Total Other Direct		\$145,900
OTHER DIRECT COSTS by PROJECT TASK							
Task 1	Kickoff			Project Members			
Travel			Trips		Trip Cost		TOTAL COST
International Travel			1	2	\$1,500		\$3,000
In-Country Air Travel							
Ground Transportation			2	2	\$50		\$200
			Trip Days		Per Diem Rate		TOTAL COST
Per Diem			3	2	\$300		\$1,800
Other							
Reproduction & Binding							
Courier Services							
Visa Services			1	2	\$100		\$200
Communication							
					Task 1 subtotal		\$5,200
Tasks II-IX							
Travel			Trips		Trip Cost		TOTAL COST
International Travel			2	8	\$1,500		\$24,000
In-Country Air Travel			3	8	\$500		\$12,000

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TASK COMPLETION SCHEDULE

TASK COMPLETION SCHEDULE:											
	Months	1	2	3	4	5	6	7	8	9	10
TASK I		■									
TASK II			■	■	■						
TASK III			■	■	■						
TASK IV			■	■	■						
TASK V			■	■	■						
TASK VI					■						
TASK VII					■						
TASK VIII						■					
TASK IX							■				
TASK X								■			
TASK XI									■		
TASK XII										■	
TASK XIII										■	
TASK XIV										■	
TASK XV											■

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Qualifications and Feasibility Study Budget Narrative

Portal Commerce estimates that the project will require approximately ten (10) months to execute the proposed feasibility study. The following are the main considerations in developing the project's Direct Labor budget:

Direct Labor

- **Project Manager:** The proposed Project Manager should have a minimum of 15 years of experience in developing and managing port, security, and informational technology projects. It is estimated that 50 days will be required at a daily rate of \$1500. The daily rate was calculated with a base salary of \$850 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 50 percent.
- **Senior Systems Engineer:** The proposed Senior Engineer should have a minimum of 15 years of experience in developing and implementing information technology systems in the port and marine environments. It is estimated that 80 days will be required as a daily rate of \$1200 per day. The daily rate was calculated with a base salary of \$750 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 50 percent.
- **IT Systems Analyst:** The Systems Analyst should have a minimum of 10 years of experience in developing and managing port and marine environment informational technology systems and 5 years of experience with VTS. It is estimated that the Systems Analyst will contribute 53 days to the project at a daily rate of \$1000 per day. The daily rate was calculated with a base salary of \$800 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 25 percent.
- **Senior Radar Technician/Consultant:** The proposed Senior Radar Technician will have at least 15 years of experience in developing and implementing VTMS, radar coverage assessments, and site surveys in marine and port environments. It is estimated that the Senior Radar Technician will be required to contribute 63 days to the proposed project at a daily rate of \$1500 per day. The rate was calculated with a base salary of \$800 per day and includes a fringe benefit of 25 percent and an overhead rate of 25 percent.
- **Radio Communications Engineer:** The Radio Communications Engineer should have a minimum of 10 years experience in developing and implementing communications systems in marine and port environments with demonstrated experience with VTS. It is estimated that the Radio Engineer will be required to contribute 53 days to the proposed project at a daily rate of \$1000 per day. The daily rate was calculated with a base salary of \$800 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 25 percent.
- **Senior Network Specialist:** The Senior Network Specialist should have a minimum of 10 years experience in developing and implementing computer network systems with

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demonstrated experience in either marine and/or aviation transportation environments. It is estimated that the Senior Network Specialist will be required to contribute 50 days to the proposed project at a daily rate of \$1000 per day. The daily rate was calculated with a base salary of \$800 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 25 percent.

- Maritime Economist: The project's Maritime Economist should have a minimum of 10 years experience working on similar international projects and projects involving trade facilitation, ports, and shipping. It is estimated that the Maritime Economist will be required to contribute 73 days to the proposed project at a daily rate of \$1000 per day. The daily rate was calculated with a base salary of \$800 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 25 percent.
- Public Policy Specialist: The Public Policy Specialist should have a minimum of 10 years experience working on projects related to transportation infrastructure and public policies in Brazil and/or the Latin American region. It is estimated that the Public Policy Analyst will be required to contribute 55 days to the proposed project at a daily rate of \$1000 per day. The daily rate was calculated with a base salary of \$800 per day and includes a fringe benefit rate of 25 percent and an overhead rate of 25 percent.

Team members can handle multiple positions and overlapping responsibilities. At least one member of the team must have training as a VTS Operator by way of the United States Coast Guard's VTS Certification Course or courses aligned with the IALA V-103 Standards for Training and Certification of VTS Personnel. Team members should have familiarity and direct knowledge/experience with at least one of the following: IALA, USCG's Vessel Traffic Program, Navigation Center, Vessel Traffic Services Division, Coast Guard Vessel Traffic System (CGVTS) and the Ports and Waterways Safety System (PAWSS).

ANNEX 3



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

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

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

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

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

NATIONALITY:

1) Rule

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

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

2) Application

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

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

3) Definitions

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

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

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

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

SOURCE AND ORIGIN:

1) Rule

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

2) Application

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

3) Definitions

"Source" means the country from which shipment is made.

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

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

ANNEX 4

GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and the Brazilian Secretariat of Ports ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US\$674,000 ("USTDA Grant") to fund the cost of goods and services required for the feasibility study ("Study") on the proposed Vessel Traffic Management System Project ("Project") in Brazil ("Host Country").

1. USTDA Funding

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

2. Terms of Reference

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

3. Standards of Conduct

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

4. Grantee Responsibilities

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

5. Expenditures

In compliance with Brazilian legislation that governs the public spending for the Federal Public Administration, the Grantee shall not be responsible for any payment to the U.S. Firm under this agreement.

6. USTDA as Financier

(A) USTDA Approval of Competitive Selection Procedures

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

(B) USTDA Approval of U.S. Firm Selection

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

(C) USTDA Approval of Agreement of Understanding Between Grantee and U.S. Firm

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

(D) USTDA Not a Party to the Agreement of Understanding

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 Agreement of Understanding and any amendments thereto, including assignments, the selection of all U.S. Firms, the Terms of Reference, the Final Report, and any and all documents related to any Agreement of Understanding funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of funding

the Study and shall not be construed as making USTDA a party to the Agreement of Understanding. 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 Agreement of Understanding or any sub-agreement, 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 U.S. Firm, or relieve the U.S. Firm of any liability which the U.S. Firm 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 Agreement of Understanding or any sub-agreement thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and any Agreement of Understanding or sub-agreement funded by the Grant Agreement, the Grant Agreement shall be controlling.

7. Disbursement Procedures

(A) USTDA Approval of Agreement of Understanding Required

USTDA will make disbursements of Grant funds directly to the U.S. Firm only after USTDA approves the Grantee's Agreement of Understanding with the U.S. Firm.

(B) U.S. Firm Invoice Requirements

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

8. 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.

9. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is October 31, 2012, is the date by which the parties estimate that the Study will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

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

10. USTDA Mandatory Clauses

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

11. Use of U.S. Carriers

(A) Air

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

(B) Marine

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

12. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the U.S. Firm must be either a U.S. firm or U.S. individual; (b) the U.S. Firm 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 sub-agreement; (c) employees of the U.S. Firm or U.S. subcontractors responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

13. Taxes

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

14. Cooperation Between Parties and Follow-Up

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

15. Implementation Letters

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

16. Recordkeeping and Audit

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

17. Representation of Parties

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

18. Addresses of Record for Parties

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

To: Brazilian Secretariat of Ports
SCN Quadra 04 Bloco B
Centro Empressarial Varig
Petala C – Sala 1302
Brasilia-DF 70714-900
Brazil

Phone: 011 55 (61) 3411-3733
Fax: 011 55 (61) 9655-0341

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

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

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

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

Appropriation No.: 11 10/11 1001
Activity No.: 201051034A

Reservation No.: 2010510041
Grant No.: GH2010510010

19. Termination Clause

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

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.

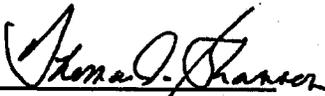
21. U.S. Technology and Equipment

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

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IN WITNESS WHEREOF, the Government of the United States of America and the Brazilian Secretariat of Ports, each acting through its duly authorized representative, have caused this Agreement to be signed in the English and Portuguese languages 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**

By: 
Thomas A. Shannon
Ambassador
United States Embassy of Brazil

Date: 31-8-2010

**For the Brazilian Secretariat of
Ports**

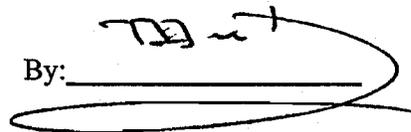
By: 
Pedro Brito do Nascimento,
Minister
Brazilian Secretariat of Ports

Date: 31.08.2010

Witnessed:

By: 

Witnessed:

By: 

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

Terms of Reference

Objective

The objective of the Brazil Vessel Traffic Management System Study ("Study") is to develop technical specifications for the implementation of a Vessel Traffic Management System (VTMS) covering four Brazilian ports. The four ports identified as priorities by the Brazilian Secretariat of Ports (SEP) for this study include the ports of Rio de Janeiro, Itaguaí, Rio Grande, and Salvador/Aratu. Given their proximity, the ports of Salvador and Aratu should be treated as a single project in terms of project planning, project execution, and implementation.

The Study tasks are as follows:

Task 1 – Project Kick-Off, Planning and Information Gathering

Immediately upon the start of the Study, the U.S. Firm shall meet with SEP to prepare and present, for approval, an overall schedule including projected travel times, meeting dates, deliverables and key Study milestones. The U.S. Firm shall present, during the initial meeting with SEP, an overall Study agenda, Study goals, objectives, list of key contacts and responsibilities, and work approach. These items shall be discussed and agreed upon before commencement of the Study.

SEP shall prepare in advance of the Project Kickoff Meeting and provide to the U.S. firm all relevant and available data including:

- vessel traffic statistics for all relevant ports (total number of vessel movements per year by vessel type and cargo)
- information and statistics related to vessel traffic incidents and their classification
- port and channel navigation charts and maps
- data on installed navigation aids
- previous studies, reports, and proposals for the implementation of vessel traffic management system(s)
- contact information for key project stakeholders at each port, including, but not limited to port authorities, local pilots associations, National Waterborne Transport Agency (ANTAQ) officials, and relevant federal, state, and local government officials

This data will likely be in Portuguese and it will be the Contractor's responsibility to translate the information for its use, if necessary.

Deliverable #1: A report detailing the findings and recommendations of Task 1. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 2: Maritime Traffic Evaluation

The U.S. firm shall perform a maritime traffic evaluation for each of the four ports, including, but not limited to:

- Marine traffic statistics
- Incident statistics
- Coastal shipping patterns

Deliverable #2: A report detailing the findings and recommendations of Task 2. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 3: Marine Navigation Evaluation

The U.S. firm shall perform an evaluation of existing navigational conditions for each of the four ports, including, but not limited to:

- Existing aids to navigation
- Navigational hazards, structures
- Tidal patterns and weather patterns

Deliverable #3: A report detailing the findings and recommendations of Task 3. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 4: Radar Coverage Survey

The U.S. firm shall perform site visits to each of the four ports involved in the Study. The U.S. firm shall:

- review any existing radar and proposed site locations and equipment
- evaluate possible candidate locations for radar tower and antenna
- visit the organized port area, main piers, and navigation channels

Deliverable #4: A report detailing the findings and recommendations of Task 4. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 5: Facilities Assessment

The U.S. firm shall visit existing port facilities at each of the four ports to determine the suitable location for central command and control facilities. The U.S. firm shall:

- examine existing buildings, traffic control space, electrical power sources, and communications infrastructure
- consider potential locations for the new equipment installation, either in existing or new buildings where applicable

Deliverable #5: A report detailing the findings and recommendations of Task 5. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 6: VTS-LRIT-SAR Compliance Review

The U.S. firm shall detail the current status of international and Brazilian national regulations and norms governing marine navigation and safety systems, including, but not limited to:

- Vessel Traffic Systems (VTS)
- Automatic Identification Systems (AIS)
- Long Range Identification and Tracking Systems (LRIT)
- Search and Rescue (SAR) standards

Deliverable #6: A report detailing the findings and recommendations of Task 6. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 7: System Demands

The U.S. Firm shall detail the potential system demands and requirements based on the U.S. firm's assessment of the following:

- relevant maritime traffic
- navigational conditions
- marine situational awareness
- relevant national and international norms and standards for the development and operation of VTMS

Deliverable #7: A report detailing the findings and recommendations of Task 7. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the

report to SEP in English. In addition, the U.S. firm shall present the key findings of Tasks 1-7 in a formal meeting organized and scheduled by SEP with the presence of key staff members of both the U.S. Firm and SEP.

Task 8: VTMS Architecture and Requirements

The U.S. firm shall specify the technical requirements for design and implementation of the VTMS including, but not limited to, the following components:

- land-based harbor radar subsystems
- radar image processing equipment
- maritime Very High Frequency (VHF) transceiver equipment
- database management systems
- recording equipment, for video, VHF, and telephone communications
- all necessary hardware and software subsystems
- required and recommended meteorological monitoring system
- automatic identification system (AIS) for the port operation
- Long Range Identification and Tracking (LRIT) systems
- recommended redundant and auxiliary systems

Deliverable #8: A report detailing the findings and recommendations of Task 8. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 9: VTMS Command and Control Infrastructure Requirements

The U.S. firm shall specify the technical requirements for the design and implementation of the necessary VTMS command and control center(s), including, but not limited to, the following components:

- building modifications and/or construction needed to accommodate the VTMS system designed in Task 8 above
- computer and communications network equipment
- VTMS servers and operator workstations
- communication and data backup equipment
- data storage
- network color printers
- uninterrupted power supply for system equipment
- fireproof cabinets

Deliverable #9: A report detailing the findings and recommendations of Task 9. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 10: Financial Analysis and Modeling

The U.S. firm shall conduct a financial analysis of the entire VTMS project design and implementation. The analysis shall include:

- alternative funding sources
- full costs of equipment
- construction (if needed)
- costs of VTMS operations
- potential revenues derived from user fees
- cost reductions in port operations resulting from anticipated operations efficiency gains

The U.S. firm shall provide a list of the potential technologies and information on potential U.S. suppliers including name and address and any other relevant contact information. The U.S. firm shall also conduct the following analyses:

- determine potential for engaging alternative funding sources/organizations, such as the World Bank Group (International Finance Corporation, International Development Association, Multilateral Investment Guarantee Agency), U.S. Government (Ex-Im Bank, Overseas Private Investment Corporation), Interamerican Development Bank, Andean Development Corporation (CAF), and Fund for Development of the River Plate Basin (FONPLATA)
- define complete equipment costs for all technical characteristics of the proposed VTMS and its alternatives
- identify all relevant potential U.S. suppliers of the required goods and services for the proposed Project
- define the costs of required Project construction and civil works
- estimate annual operating costs of the Project and the Project's economic internal rate of return (EIRR)
- design a model service provider agreement that can serve as the potential basis for engagement of third parties in the relevant port community and regimes for competitive fees for use (service charges) of the VTMS
- assess the potential for the service provider model and user fees/charges to sustain the project's financial viability under the competing potential regimes identified above
- prepare financial projections for the Project over 5 and 10 year periods of operation

Deliverable #10: A report detailing the findings and recommendations of Task 10. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 11: System Technical Requirements

The U.S. Firm shall develop a model of the VTMS architecture based on the VTMS demands and requirements identified in Task 8 and recommend an implementation plan for the systems, including, but not limited to, implementation stages with objectives and basic requirements for each stage, as well as the recommended technologies to support both current needs and anticipated future growth.

Deliverable #11: A report detailing the findings and recommendations of Task 11. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English. In addition, the U.S. firm shall present a summary and model of the VTMS architecture, as well as the key findings of Tasks 8-11 in a formal meeting organized and scheduled by SEP with the presence of key staff members of both the U.S. Firm and SEP.

Task 12: Definition of Capacity Building and Training Requirements

The U.S. firm shall assess the institutional capacities of the relevant Project entities related to the operation and management of the proposed VTMS and also make recommendations on how to project individual port VTMS to a coastal/national VTMS.

This assessment will guide the U.S. firm's recommendations to assist SEP in developing the appropriate organizational structure of a proposed VTMS division within the governing port authority. The U.S. firm shall prepare a description of the specific functions, responsibilities, and training and maintenance requirements within the aforementioned division.

Deliverable #12: A report detailing the findings and recommendations of Task 12. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 13: Preliminary Environmental Impact Analysis

The U.S firm shall analyze the Project's environmental impacts with reference to local requirements and international practices such as those of the World Bank. This analysis shall identify potential negative impacts, discuss the extent to which they can be mitigated, and provide recommendations for full environmental impact assessment if and when the Project moves forward to implementation stage.

Task 14: Developmental Impact Assessment

The U.S. Firm shall report on the potential development impacts for the Project in Brazil. While specific focus shall be paid to the immediate impact(s) of the Project, the U.S. Firm shall include, where appropriate, any additional developmental benefits of the Project, including spin-off and demonstration effects. The U.S. Firm's analysis of potential benefits shall be as concrete and detailed as possible. The development impact factors are intended to provide the Project's decision-makers and other interested parties with a broader view of the Projects' potential effects on the Host Country. Finally, the U.S. firm should document the anticipated training, maintenance programs and associated costs to accompany the project during the first five (5) years of implementation and operation. The U.S. Firm shall provide estimates of the Project's potential benefits in the following areas:

- **Infrastructure and Industry.** The U.S. Firm shall provide a statement on the infrastructure impact giving a brief synopsis, including the size and scope of new facilities.
- **Market-Oriented Reforms.** The U.S. Firm shall provide a description of any regulations, laws, or institutional changes that are recommended and the effect they would have if implemented. The U.S. Firm shall identify increased quality, efficiency or competitiveness of core products in Brazil as result of the Project.
- **Human capacity building:** The U.S. Firm shall address the number and type of positions that may be needed to implement, manage, and operate the proposed VTMS as well as the number of people who may receive training and a brief description of the training program.
- **Technology Transfer and Productivity Enhancement.** The U.S. Firm shall provide a description of any advanced technologies that may be implemented as a result of the Project. The U.S. Firm shall provide a quantitative description of any efficiency that may be gained as part of the Project such as reducing the current cargo flow bottleneck, logistics costs, vessel berthing times, idling trucks, etc.
- **Other:** The U.S. Firm shall identify any other developmental benefits of the Project, including any spin-off or demonstration effects.

Deliverable #13 – Draft Final Report: The U.S. Firm shall present to SEP the Draft Final Report and an Executive Summary which shall incorporate comments from SEP on all previous reports and shall include findings from Tasks 1 through 14. The U.S. Firm shall provide one copy of this report and the executive summary to SEP in English and one copy of this report and executive summary to SEP in Portuguese. The report shall

also be presented in digital format using Microsoft Office, dwg files, or pdf files as approved by SEP.

Task 15: Final Report and Presentation

The U.S. Firm shall prepare and provide a comprehensive Final Report for submission to SEP and to USTDA, which shall contain the key findings, recommendations, and conclusions of the Study, and shall incorporate all other documents and/or reports provided pursuant to Tasks 1 through 14 above. The U.S. Firm shall ensure that the Final Report is submitted in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall be a substantive and comprehensive report of work performed to carry out all of the tasks set forth in the Terms of Reference and shall include, among other things, an Executive Summary and all deliverables. Each task of the Terms of Reference shall form a separate chapter of the Final Report.

The U.S. Firm shall submit to SEP six (6) copies of the final report in Portuguese and one (1) in English. The U.S. Firm shall also provide one (1) electronic version of both the confidential and public versions of the Final Report to SEP in Microsoft Office, pdf or .dwg format. The U.S. Firm shall provide copies to USTDA and the U.S. Consulate in Sao Paulo in English in accordance with Clause I of Annex II of the Grant Agreement.

Upon completion of the Final Report, the U.S. Firm shall provide a final oral presentation of the Final Executive Summary and the Final Report to SEP and other stakeholders in Brazil.

Notes:

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

Annex II

USTDA Mandatory Agreement of Understanding to Perform the Feasibility Study Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this Agreement of Understanding to Perform the Feasibility Study ("Agreement of Understanding") acknowledge that this Agreement of Understanding is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and the Brazilian Secretariat of Ports ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("U.S. Firm") to perform the Feasibility Study ("Study") for the Vessel Traffic Management System Project ("Project") in Brazil ("Host Country"). Notwithstanding any other provisions of this Agreement of Understanding, the following USTDA mandatory Agreement of Understanding clauses shall govern. All sub-agreements entered into by the U.S. Firm funded or partially funded with USTDA Grant funds shall include these USTDA mandatory Agreement of Understanding clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and any Agreement of Understanding or sub-agreement thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Agreement of Understanding

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

(2) USTDA Not a Party to the Agreement of Understanding

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this Agreement of Understanding and amendments thereto, including assignments, the selection of all U.S. Firms, the Terms of Reference, the Final Report, and any and all documents related to any Agreement of Understanding funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from

exercising these approval rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the Agreement of Understanding. 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 Agreement of Understanding or any sub-agreement, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the U.S. Firm, or relieve the U.S. Firm of any liability which the U.S. Firm might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the U.S. Firm must be either a U.S. firm or U.S. individual; (b) the U.S. Firm 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 sub-agreement; (c) employees of the U.S. Firm or U.S. subcontractors responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

D. Recordkeeping and Audit

The U.S. Firm 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 Agreement of Understanding. 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 Agreement of Understanding term and for a period of three (3) years after final disbursement by USTDA. The U.S. Firm 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 U.S. Firm shall provide adequate Workman's Compensation Insurance coverage for work performed under this Agreement of Understanding.

G. Reporting Requirements

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

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

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the U.S. Firm shall be included in this Agreement of Understanding. 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 Agreement of Understanding performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon receipt by USTDA of an approved Final Report in accordance with the specifications and quantities set forth in Clause I below. Invoicing procedures for all payments are described below.

(3) U.S. Firm Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the U.S. Firm. The U.S. Firm 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 U.S. Firm for performance of the contract by submitting the following to USTDA:

(a) U.S. Firm's Invoice

The U.S. Firm's invoice shall include reference to an item listed in the Agreement of Understanding payment schedule, the requested payment amount, and an appropriate certification by the U.S. Firm, as follows:

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

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

(ii) For Agreement of Understanding performance milestone payments:

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

(iii) For final payment:

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

(b) Client's Approval of the U.S. Firm's Invoice

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

(ii) For Agreement of Understanding 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 U.S. Firm have been performed satisfactorily, in accordance with applicable Agreement of Understanding 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 U.S. Firm have been performed satisfactorily, in accordance with applicable Agreement of Understanding provisions and terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the U.S. Firm has been reviewed and approved by the Client. "

(c) USTDA Address for Disbursement Requests

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

(4) Termination

In the event that the Agreement of Understanding is terminated prior to completion, the U.S. Firm will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. Likewise, in

the event of such termination, USTDA is entitled to receive from the U.S. Firm all USTDA Grant funds previously disbursed to the U.S. Firm (including but not limited to mobilization payments) which exceed the reasonable and documented costs incurred in performing the Terms of Reference prior to termination.

I. USTDA Final Report

(1) Definition

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

(2) Final Report Submission Requirements

The U.S. Firm shall provide the following to USTDA:

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

and

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

and

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

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

(3) Final Report Presentation

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

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

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

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

(c) The U.S. Firm 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 U.S. Firm who prepared the report, a report title, and the following language:

"The U.S. Firm certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution."

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

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

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

J. Modifications

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

K. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is October 31, 2012, is the date by which the parties estimate that the Study will have been completed.

(2) Time Limitation on Disbursement of USTDA Grant Funds

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

L. Business Practices

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

M. USTDA Address and Fiscal Data

Any communication with USTDA regarding this Agreement of Understanding 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 10/11 1001
Activity No.:	201051034A
Reservation No.:	2010510041
Grant No.:	GH2010510010

N. Definitions

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

O. Taxes

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

ANNEX 5

Annex I

Terms of Reference

Objective

The objective of the Brazil Vessel Traffic Management System Study ("Study") is to develop technical specifications for the implementation of a Vessel Traffic Management System (VTMS) covering four Brazilian ports. The four ports identified as priorities by the Brazilian Secretariat of Ports (SEP) for this study include the ports of Rio de Janeiro, Itaguaí, Rio Grande, and Salvador/Aratu. Given their proximity, the ports of Salvador and Aratu should be treated as a single project in terms of project planning, project execution, and implementation.

The Study tasks are as follows:

Task 1 – Project Kick-Off, Planning and Information Gathering

Immediately upon the start of the Study, the U.S. Firm shall meet with SEP to prepare and present, for approval, an overall schedule including projected travel times, meeting dates, deliverables and key Study milestones. The U.S. Firm shall present, during the initial meeting with SEP, an overall Study agenda, Study goals, objectives, list of key contacts and responsibilities, and work approach. These items shall be discussed and agreed upon before commencement of the Study.

SEP shall prepare in advance of the Project Kickoff Meeting and provide to the U.S. firm all relevant and available data including:

- vessel traffic statistics for all relevant ports (total number of vessel movements per year by vessel type and cargo)
- information and statistics related to vessel traffic incidents and their classification
- port and channel navigation charts and maps
- data on installed navigation aids
- previous studies, reports, and proposals for the implementation of vessel traffic management system(s)
- contact information for key project stakeholders at each port, including, but not limited to port authorities, local pilots associations, National Waterborne Transport Agency (ANTAQ) officials, and relevant federal, state, and local government officials

This data will likely be in Portuguese and it will be the Contractor's responsibility to translate the information for its use, if necessary.

Deliverable #1: A report detailing the findings and recommendations of Task 1. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 2: Maritime Traffic Evaluation

The U.S. firm shall perform a maritime traffic evaluation for each of the four ports, including, but not limited to:

- Marine traffic statistics
- Incident statistics
- Coastal shipping patterns

Deliverable #2: A report detailing the findings and recommendations of Task 2. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 3: Marine Navigation Evaluation

The U.S. firm shall perform an evaluation of existing navigational conditions for each of the four ports, including, but not limited to:

- Existing aids to navigation
- Navigational hazards, structures
- Tidal patterns and weather patterns

Deliverable #3: A report detailing the findings and recommendations of Task 3. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 4: Radar Coverage Survey

The U.S. firm shall perform site visits to each of the four ports involved in the Study. The U.S. firm shall:

- review any existing radar and proposed site locations and equipment
- evaluate possible candidate locations for radar tower and antenna
- visit the organized port area, main piers, and navigation channels

Deliverable #4: A report detailing the findings and recommendations of Task 4. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 5: Facilities Assessment

The U.S. firm shall visit existing port facilities at each of the four ports to determine the suitable location for central command and control facilities. The U.S. firm shall:

- examine existing buildings, traffic control space, electrical power sources, and communications infrastructure
- consider potential locations for the new equipment installation, either in existing or new buildings where applicable

Deliverable #5: A report detailing the findings and recommendations of Task 5. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 6: VTS-LRIT-SAR Compliance Review

The U.S. firm shall detail the current status of international and Brazilian national regulations and norms governing marine navigation and safety systems, including, but not limited to:

- Vessel Traffic Systems (VTS)
- Automatic Identification Systems (AIS)
- Long Range Identification and Tracking Systems (LRIT)
- Search and Rescue (SAR) standards

Deliverable #6: A report detailing the findings and recommendations of Task 6. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 7: System Demands

The U.S. Firm shall detail the potential system demands and requirements based on the U.S. firm's assessment of the following:

- relevant maritime traffic
- navigational conditions
- marine situational awareness
- relevant national and international norms and standards for the development and operation of VTMS

Deliverable #7: A report detailing the findings and recommendations of Task 7. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the

report to SEP in English. In addition, the U.S. firm shall present the key findings of Tasks 1-7 in a formal meeting organized and scheduled by SEP with the presence of key staff members of both the U.S. Firm and SEP.

Task 8: VTMS Architecture and Requirements

The U.S. firm shall specify the technical requirements for design and implementation of the VTMS including, but not limited to, the following components:

- land-based harbor radar subsystems
- radar image processing equipment
- maritime Very High Frequency (VHF) transceiver equipment
- database management systems
- recording equipment, for video, VHF, and telephone communications
- all necessary hardware and software subsystems
- required and recommended meteorological monitoring system
- automatic identification system (AIS) for the port operation
- Long Range Identification and Tracking (LRIT) systems
- recommended redundant and auxiliary systems

Deliverable #8: A report detailing the findings and recommendations of Task 8. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 9: VTMS Command and Control Infrastructure Requirements

The U.S. firm shall specify the technical requirements for the design and implementation of the necessary VTMS command and control center(s), including, but not limited to, the following components:

- building modifications and/or construction needed to accommodate the VTMS system designed in Task 8 above
- computer and communications network equipment
- VTMS servers and operator workstations
- communication and data backup equipment
- data storage
- network color printers
- uninterrupted power supply for system equipment
- fireproof cabinets

Deliverable #9: A report detailing the findings and recommendations of Task 9. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 10: Financial Analysis and Modeling

The U.S. firm shall conduct a financial analysis of the entire VTMS project design and implementation. The analysis shall include:

- alternative funding sources
- full costs of equipment
- construction (if needed)
- costs of VTMS operations
- potential revenues derived from user fees
- cost reductions in port operations resulting from anticipated operations efficiency gains

The U.S. firm shall provide a list of the potential technologies and information on potential U.S. suppliers including name and address and any other relevant contact information. The U.S. firm shall also conduct the following analyses:

- determine potential for engaging alternative funding sources/organizations, such as the World Bank Group (International Finance Corporation, International Development Association, Multilateral Investment Guarantee Agency), U.S. Government (Ex-Im Bank, Overseas Private Investment Corporation), Interamerican Development Bank, Andean Development Corporation (CAF), and Fund for Development of the River Plate Basin (FONPLATA)
- define complete equipment costs for all technical characteristics of the proposed VTMS and its alternatives
- identify all relevant potential U.S. suppliers of the required goods and services for the proposed Project
- define the costs of required Project construction and civil works
- estimate annual operating costs of the Project and the Project's economic internal rate of return (EIRR)
- design a model service provider agreement that can serve as the potential basis for engagement of third parties in the relevant port community and regimes for competitive fees for use (service charges) of the VTMS
- assess the potential for the service provider model and user fees/charges to sustain the project's financial viability under the competing potential regimes identified above
- prepare financial projections for the Project over 5 and 10 year periods of operation

Deliverable #10: A report detailing the findings and recommendations of Task 10. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 11: System Technical Requirements

The U.S. Firm shall develop a model of the VTMS architecture based on the VTMS demands and requirements identified in Task 8 and recommend an implementation plan for the systems, including, but not limited to, implementation stages with objectives and basic requirements for each stage, as well as the recommended technologies to support both current needs and anticipated future growth.

Deliverable #11: A report detailing the findings and recommendations of Task 11. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English. In addition, the U.S. firm shall present a summary and model of the VTMS architecture, as well as the key findings of Tasks 8-11 in a formal meeting organized and scheduled by SEP with the presence of key staff members of both the U.S. Firm and SEP.

Task 12: Definition of Capacity Building and Training Requirements

The U.S. firm shall assess the institutional capacities of the relevant Project entities related to the operation and management of the proposed VTMS and also make recommendations on how to project individual port VTMS to a coastal/national VTMS.

This assessment will guide the U.S. firm's recommendations to assist SEP in developing the appropriate organizational structure of a proposed VTMS division within the governing port authority. The U.S. firm shall prepare a description of the specific functions, responsibilities, and training and maintenance requirements within the aforementioned division.

Deliverable #12: A report detailing the findings and recommendations of Task 12. The U.S. Firm shall provide one copy of the report to SEP in Portuguese and one copy of the report to SEP in English.

Task 13: Preliminary Environmental Impact Analysis

The U.S. firm shall analyze the Project's environmental impacts with reference to local requirements and international practices such as those of the World Bank. This analysis shall identify potential negative impacts, discuss the extent to which they can be mitigated, and provide recommendations for full environmental impact assessment if and when the Project moves forward to implementation stage.

Task 14: Developmental Impact Assessment

The U.S. Firm shall report on the potential development impacts for the Project in Brazil. While specific focus shall be paid to the immediate impact(s) of the Project, the U.S. Firm shall include, where appropriate, any additional developmental benefits of the Project, including spin-off and demonstration effects. The U.S. Firm's analysis of potential benefits shall be as concrete and detailed as possible. The development impact factors are intended to provide the Project's decision-makers and other interested parties with a broader view of the Projects' potential effects on the Host Country. Finally, the U.S. firm should document the anticipated training, maintenance programs and associated costs to accompany the project during the first five (5) years of implementation and operation. The U.S. Firm shall provide estimates of the Project's potential benefits in the following areas:

- **Infrastructure and Industry.** The U.S. Firm shall provide a statement on the infrastructure impact giving a brief synopsis, including the size and scope of new facilities.
- **Market-Oriented Reforms.** The U.S. Firm shall provide a description of any regulations, laws, or institutional changes that are recommended and the effect they would have if implemented. The U.S. Firm shall identify increased quality, efficiency or competitiveness of core products in Brazil as result of the Project.
- **Human capacity building:** The U.S. Firm shall address the number and type of positions that may be needed to implement, manage, and operate the proposed VTMS as well as the number of people who may receive training and a brief description of the training program.
- **Technology Transfer and Productivity Enhancement.** The U.S. Firm shall provide a description of any advanced technologies that may be implemented as a result of the Project. The U.S. Firm shall provide a quantitative description of any efficiency that may be gained as part of the Project such as reducing the current cargo flow bottleneck, logistics costs, vessel berthing times, idling trucks, etc.
- **Other:** The U.S. Firm shall identify any other developmental benefits of the Project, including any spin-off or demonstration effects.

Deliverable #13 – Draft Final Report: The U.S. Firm shall present to SEP the Draft Final Report and an Executive Summary which shall incorporate comments from SEP on all previous reports and shall include findings from Tasks 1 through 14. The U.S. Firm shall provide one copy of this report and the executive summary to SEP in English and one copy of this report and executive summary to SEP in Portuguese. The report shall

also be presented in digital format using Microsoft Office, dwg files, or pdf files as approved by SEP.

Task 15: Final Report and Presentation

The U.S. Firm shall prepare and provide a comprehensive Final Report for submission to SEP and to USTDA, which shall contain the key findings, recommendations, and conclusions of the Study, and shall incorporate all other documents and/or reports provided pursuant to Tasks 1 through 14 above. The U.S. Firm shall ensure that the Final Report is submitted in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall be a substantive and comprehensive report of work performed to carry out all of the tasks set forth in the Terms of Reference and shall include, among other things, an Executive Summary and all deliverables. Each task of the Terms of Reference shall form a separate chapter of the Final Report.

The U.S. Firm shall submit to SEP six (6) copies of the final report in Portuguese and one (1) in English. The U.S. Firm shall also provide one (1) electronic version of both the confidential and public versions of the Final Report to SEP in Microsoft Office, pdf or .dwg format. The U.S. Firm shall provide copies to USTDA and the U.S. Consulate in Sao Paulo in English in accordance with Clause I of Annex II of the Grant Agreement.

Upon completion of the Final Report, the U.S. Firm shall provide a final oral presentation of the Final Executive Summary and the Final Report to SEP and other stakeholders in Brazil.

Notes:

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

ANNEX 6

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

B. Offeror's Authorized Negotiator

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

C. Negotiation Prerequisites

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

D. Offeror's Representations

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

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

belief, proposed for debarment, or ineligible for the award of contracts by any federal or state governmental agency or authority.

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

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

Signed: _____
(Authorized Representative)

Print Name: _____

Title: _____

Date: _____

E. Subcontractor Profile

1. Name of firm and business address (street address only), including telephone and fax numbers.

2. Year established (include predecessor companies and year(s) established, if appropriate).

F. Subcontractor's Representations

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

1. Subcontractor is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State of _____ . The subcontractor has all the requisite corporate power and authority to conduct its business as presently conducted, to participate in this proposal, and if the Offeror is selected, to execute and deliver a subcontract to the Offeror for the performance of the Feasibility Study and to perform the Feasibility Study. 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 three-year period preceding this RFP, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.

3. Neither the 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.

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

Signed: _____
(Authorized Representative)

Print Name: _____

Title: _____

Date: _____