USAID's Trade Central Asia Activity (TCA)

Request For Proposals (RFP)

No. RFP-TCA-KAZ-24-0003

Technical Services for Implementation of Automated Terminal Operating System at Port of Kuryk, Kazakhstan

Issue Date: February 27, 2024

WARNING: Prospective Offerors who have received this document from a source other than the TCA Project, located at 506/99, Seifullin ave. non-residential premises 6, BC Rixos, 2nd floor, office 201, Almaty, Kazakhstan should immediately contact TCA_procurement@dai.com and provide their name and mailing address in order that amendments to the RFP or other communications can be sent directly to them. Any prospective Offeror who fails to register their interest assumes complete responsibility in the event that they do not receive communications prior to the closing date. Any amendments to this solicitation will be issued and posted via email.

DAI conducts business under the strictest ethical standards to assure fairness in competition, reasonable prices and successful performance or delivery of quality goods and equipment. DAI does not tolerate corruption, bribery, collusion or conflicts of interest. Any requests for payment or favors by DAI employees should be reported as soon as possible to ethics@dai.com or by visiting www.dai.ethicspoint.com. Further, any attempts by an offeror or subcontractor to offer inducements to a DAI employee to influence a decision will not be tolerated and will be grounds for disqualification, termination and possible debarment. See provision No. 9 for more details.

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Synopsis of the RFP

RFP No.	RFP-TCA-KAZ-24-0003
Issue Date	February 27, 2024
Title	Technical Services for Implementation of Automated Terminal Operating System at Port of Kuryk, Kazakhstan
Email for Submission of Proposals	Attn: Procurement Department, TCA Project TCA_procurementINBOX@dai.com
Deadline for Receipt of Questions	March 12, 2024, 5 pm local Almaty, Kazakhstan time In case confirmation of receipt to the submitted questions is not received within 2 days of submission, Offerors are encouraged to follow up on the status of their question by contacting the following phone number: +77072726117. It shall be noted that this is required due to often issues with DAI mailing system.
Deadline for Receipt of Proposals	March 19, 2024, 5 pm local Almaty, Kazakhstan time
Point of Contact	TCA_procurement@dai.com – Procurement Manager
Anticipated Award Type	Firm Fixed Price Subcontract
Basis for Award	An award will be made based on the Trade Off Method. The award will be issued to the responsible and reasonable offeror who provides the best value to DAI and its client using a combination of price and technical or non-cost/price factors.

1. Introduction and Purpose

1.1 Purpose

DAI, the implementer of the USAID's Trade Central Asia Activity, invites qualified offerors to submit proposals for the development and deployment of an Automated Terminal Operating System (TOS) for the port of Kuryk, which is located on the eastern coast of the Caspian Sea, south of the port of Aktau, Kazakhstan, as outlined in Attachment A.

The Issuing Office and Contact Person noted in the above synopsis is the sole point of contact at DAI for purposes of this RFP. Any prospective offeror who fails to register their interest with this office assumes complete responsibility in the event that they do not receive direct communications (amendments, answers to questions, etc.) prior to the closing date.

1.2 Type of Award Anticipated

DAI anticipates awarding a Firm Fixed Price Subcontract. This subcontract type is subject to change during the course of negotiations.

A Fixed Price Subcontract is: An award for a total firm fixed price, for values more than $150,000, for the provision of specific services, goods, or deliverables and is not adjusted if the actual costs are higher or lower than the fixed price amount. Offerors are expected to include all costs, direct and indirect, into their total proposed price.

2. General Instructions to Offerors

2.1 General Instructions

"Offeror", "Subcontractor", and/or "Bidder" means a firm proposing the work under this RFP. "Offer" and/or "Proposal" means the package of documents the firm submits to propose the work.

Offerors wishing to respond to this RFP must submit proposals, in English or Russian, in accordance with the following instructions. Offerors are required to review all instructions and specifications contained in this RFP. Failure to do so will be at the Offeror's risk. If the solicitation is amended, then all terms and conditions not modified in the amendment shall remain unchanged.

Issuance of this RFP in no way obligates DAI to award a subcontract or purchase order. Offerors will not be reimbursed for any costs associated with the preparation or submission of their proposal. DAI shall in no case be responsible or liable for these costs.

Proposals are due no later than March 19, 2024, 5 pm local Almaty, Kazakhstan time, to be submitted via procurement email to TCA_procurementinbox@dai.com with the RFP number and title of the activity in the subject line. Proposals should include all costs and technical proposals in the same email. Late offers will be rejected except under extraordinary circumstances at DAI's discretion.

The submission to DAI of a proposal in response to this RFP will constitute an offer and indicates the Offeror's agreement to the terms and conditions in this RFP and any attachments hereto. DAI reserves the right not to evaluate a nonresponsive or incomplete proposal.

2.2 Proposal Cover Letter

A cover letter shall be included with the proposal on the Offeror's company letterhead with a duly authorized signature and company stamp/seal using Attachment B as a template for the format. The cover letter shall include the following items:

- The Offeror will certify a validity period of 90 days for the prices provided.
- Acknowledge the solicitation amendments received.
- Acknowledge having adequate financial resources to finance and perform the work or the ability to obtain financial resources without receiving advance funds from DAI.

2.3 Questions regarding the RFP

Each Offeror is responsible for reading and complying with the terms and conditions of this RFP. Requests for clarification or additional information must be submitted in writing via email or in writing to the Issuing Office as specified in the Synopsis above. No questions will be answered by phone. Any verbal information received from a DAI or TCA employee or other entity shall not be considered as an official response to any question regarding this RFP.

Copies of questions and responses will be distributed in writing to all prospective bidders who are on record as having received this RFP after the submission date specified in the Synopsis above.

3. Instructions for the Preparation of Technical Proposals

Technical proposals shall be sealed in a separate envelope from cost/price proposals and shall be clearly labeled as "VOLUME I: TECHNICAL PROPOSAL".

Technical proposals shall include the following contents:

1. Technical Approach - Description of the proposed services which meets or exceeds the stated technical specifications or scope of work. The proposal must show how the Offeror plans to complete the work and describe an approach that demonstrates the achievement of timely and acceptable performance of the work.
    a. Response to requirements/SOW must include description of proposed technology and development tools, and an action plan detailing how each SOW requirement will be met.
    b. Warranty, maintenance and support:
    i. include information on warranty, maintenance and support options,
    ii. include an example of a maintenance agreement,
    iii. support contacts and work hours, and
    iv. response and resolution times to support requests or issues depending on priority.

2. Management approach – Description of the Offeror's staff assigned to the project. The proposal should describe how the proposed team members have the necessary experience and capabilities to carry out the Technical Approach.
    a. Project plan, project management approach and production timeline. Project Plan

should include proposed timelines for each activity and resources allocated to each activity.

b. Short CV of key personnel that would be assigned to the project should be included

3. Corporate Capabilities and Past Performance
   a. Company profile information – include company organizational chart, number of staff, main business activities;
   b. Provide a list of at least three (3) recent awards of similar scope and duration. The information shall be supplied as a table, and shall include the legal name and address of the organization for which services were performed, a description of work performed, the duration of the work and the value of the contract, description of any problems encountered and how it was resolved, and a current contact phone number of a responsible and knowledgeable representative of the organization. See Attachment F.

3.1 Services Specified

For this RFP, DAI is in need of the services described in Attachment A.

3.2 Technical Evaluation Criteria

Each proposal will be evaluated and scored against the evaluation criteria and evaluation sub-criteria, which are stated in the table below. Cost/Price proposals are not assigned points, but for overall evaluation purposes of this RFP, technical evaluation factors other than cost/price, when combined, are considered significantly more important than cost/price factors.

Evaluation Criteria	Evaluation Sub-criteria (if needed)	Maximum Points
Technical Approach		
	Technical know-how – Does the proposal clearly explain, understand and respond to the requirements of the project as stated in the Scope of Work? Does proposal include description of proposed technology, approach and development tools? Did the bidder provide an action plan explaining how each SOW requirement will be met?	20 points
	Sector Knowledge – Does the proposal demonstrate the offeror's knowledge related to port operations and business processes of supply chain, freight forwarding, imports, exports, transit and customs clearance?	20 points
	Are the length, level and quality of service offered within warranty, maintenance and support in line with industry standards?	5 points

Management Approach or Personnel Qualifications		
	Does the bidder have sufficient staff who are qualified, experienced and available to fulfill the Scope of Work?	25 points
	Project plan – Does the proposed approach and detailed activities and timeline fulfill the requirements of executing the Scope of Work effectively and efficiently? Does the bidder have a Risk Mitigation plan to ensure successful delivery of the project?	10 points
Corporate Capabilities or Past Performance		
	Does the organization have a good track record in conducting similar work and magnitude as the scope of work?	20 points
	Total Points	100 points

4. Instructions for the Preparation of Cost/Price Proposals

4.1 Cost/Price Proposals

Cost/Price proposals shall be sealed in a separate PDF document from technical proposals, and shall be clearly labeled as "VOLUME II: COST/PRICE PROPOSAL".

Provided in Attachment C is a template for the Price Schedule, for firm-fixed price awards. Offerors shall complete the template including as much detailed information as possible. All prices must be quoted in USD.

It is important to note that Value Added Tax (VAT) shall be included on a separate line. These services are eligible for VAT exemption under the DAI prime contract. The Subcontractor is responsible for all applicable taxes and fees, as prescribed under the applicable laws for income, compensation, permits, licenses, and other taxes and fees due as required.

5. Basis of Award

5.1 Best Value Determination

DAI will review all proposals, and make an award based on the technical and cost evaluation criteria stated above, and select the offeror whose proposal provides the best value to DAI. DAI may also exclude an offer from consideration if it determines that an Offeror is "not responsible", i.e., that it does not have the management and financial capabilities required to perform the work required.

Evaluation points will not be awarded for cost. Cost will primarily be evaluated for realism and reasonableness. DAI may award to a higher priced offeror if a determination is made that the higher technical evaluation of that offeror merits the additional cost/price.

DAI may award to an Offeror without discussions. Therefore, the initial offer **must contain the Offeror's best price and technical terms.**

5.2 Responsibility Determination

DAI will not enter into any type of agreement with an Offeror prior to ensuring the Offeror's responsibility. When assessing an Offeror's responsibility, the following factors are taken into consideration:

1. Provide evidence of the required business licenses to operate in the host country.
2. Evidence of a Unique Entity ID (SAM) number (explained below and instructions contained in Attachment D).
3. The source, origin and nationality of the products or services are not from a Prohibited Country (explained below).
4. Having adequate financial resources to finance and perform the work or deliver goods or the ability to obtain financial resources without receiving advance funds from DAI.
5. Ability to comply with required or proposed delivery or performance schedules.
6. Have a satisfactory past performance record.
7. Have a satisfactory record of integrity and business ethics.
8. Have the necessary organization, experience, accounting and operational controls and technical skills.
9. Be qualified and eligible to perform work under applicable laws and regulations.

6. Anticipated post-award Deliverables

During and after completion of the services, the selected Offeror shall be responsible for provision of the deliverables indicated in the Attachment A. The Offeror should detail proposed costs per deliverable in the Price Schedule. All of the deliverables must be submitted to and approved by DAI before payment will be processed.

7. Inspection & Acceptance

The designated DAI Project Manager will inspect from time to time the services being performed to determine whether the activities are being performed in a satisfactory manner, and that all equipment or supplies are of acceptable quality and standards. The subcontractor shall be responsible for any countermeasures or corrective action, within the scope of this RFP, which may be required by the DAI Chief of Party as a result of such inspection.

8. Compliance with Terms and Conditions

8.1 General Terms and Conditions

Offerors agree to comply with the general terms and conditions for an award resulting from this RFP. The selected Offeror shall comply with all Representations and Certifications of Compliance listed in Attachment G.

8.2 Prohibited Technology

Bidders MUST NOT provide any goods and/or services that utilize telecommunications and video surveillance products from the following companies: Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company, or any subsidiary or affiliate thereof, in compliance with FAR 52.204-25.

8.3 Source and Nationality

Under the authorized geographic code for its contract DAI may only procure goods and services from the following countries.

Geographic Code 937: Goods and services from the United States, the cooperating country, and "Developing Countries" other than "Advanced Developing Countries: excluding prohibited countries. A list of the "Developing Countries" as well as "Advanced Developing Countries" can be found at: https://www.usaid.gov/about-us/agency-policy/series-300/references-chapter/310maa and https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groupsrespectively

(An "advanced developing country" means any country categorized by the World Bank as an upper middle income country according to its gross national income per capita. Goods and services with an advanced developing country source or nationality are only eligible under 937 when the procurement is for a USAID program in that advanced developing country, i.e., it is the "cooperating" or "recipient" country).

Geographic Code 110: Goods and services from the United States, the independent states of the former Soviet Union, or a developing country, but excluding Prohibited Countries.

DAI must verify the source and nationality of goods and services and ensure (to the fullest extent possible) that DAI does not procure any goods or services from prohibited countries listed by the Office of Foreign Assets Control (OFAC) as sanctioned countries. OFAC sanctioned countries may be searched within the System for Award Management (SAM) at www.SAM.gov. The current list of countries under comprehensive sanctions include: Cuba, Iran, North Korea and Syria. An updated list of sanctioned countries is posted via the following link: https://ofac.treasury.gov/sanctions-programs-and-country-information. Goods may not transit through or be assembled in comprehensive sanctioned origin or nationality countries nor can the vendor be owned or controlled by a prohibited country. DAI is prohibited from facilitating any transaction by a third party if that transaction would be prohibited if performed by DAI.

By submitting a proposal in response to this RFP, Offerors confirm that they are not violating the Source and Nationality requirements of the goods or services being offered and that the goods and services comply with the Geographic Code and the exclusions for prohibited countries outlined above.

8.4 Unique Entity ID (SAM)

There is a **mandatory** requirement for your organization to provide a Unique Entity ID (SAM) to DAI. Without a Unique Entity ID (SAM), DAI cannot deem an Offeror "responsible" to conduct business with and therefore, DAI will not enter into a subcontract/purchase order or monetary agreement with any organization. The determination of a successful offeror/applicant resulting from this RFP/RFQ/RFA is contingent upon the winner providing a Unique Entity ID (SAM) to DAI. Offerors who fail to provide Unique Entity ID (SAM) will not receive an award and DAI will select an alternate Offeror.

All U.S. and foreign organizations which receive first-tier subcontracts/ purchase orders with a value of $30,000 and above **are required** to obtain a Unique Entity ID (SAM) prior to signing the agreement. Organizations are exempt from this requirement if the gross income received from all sources in the

previous tax year was under $300,000. DAI requires that Offerors sign the self-certification statement if the Offeror claims exemption for this reason.

For those required to obtain a Unique Entity ID (SAM), please request copy of Attachment D - Instructions for Obtaining an Unique Entity ID (SAM)- DAI'S Vendors, Subcontractors from TCA_procurement@dai.com

For those not required to obtain a Unique Entity ID (SAM), please request copy of Attachment E: Self Certification for Exemption from Unique Entity ID (SAM) Requirement from TCA_procurement@dai.com

9. Anti-Corruption and Anti-Bribery Policy and Reporting Responsibilities

DAI conducts business under the strictest ethical standards to assure fairness in competition, reasonable prices and successful performance or delivery of quality goods and equipment. **DAI does not tolerate the following acts of corruption:**

- Any requests for a bribe, kickback, facilitation payment or gratuity in the form of payment, gift or special consideration by a DAI employee, Government official, or their representatives, to influence an award or approval decision.
- Any offer of a bribe, kickback, facilitation payment or gratuity in the form of payment, gift or special consideration by an offeror or subcontractor to influence an award or approval decision.
- Any fraud, such as mis-stating or withholding information to benefit the offeror or subcontractor.
- Any collusion or conflicts of interest in which a DAI employee, consultant, or representative has a business or personal relationship with a principal or owner of the offeror or subcontractor that may appear to unfairly favor the offeror or subcontractor. Subcontractors must also avoid collusion or conflicts of interest in their procurements from vendors. Any such relationship must be disclosed immediately to DAI management for review and appropriate action, including possible exclusion from award.

These acts of corruption are not tolerated and may result in serious consequences, including termination of the award and possible suspension and debarment by the U.S. Government, excluding the offeror or subcontractor from participating in future U.S. Government business.

Any attempted or actual corruption should be reported immediately by either the offeror, subcontractor or DAI staff to:

- Toll-free Ethics and Compliance Anonymous Hotline at (U.S.) +1-503-597-4328
- Hotline website – www.DAI.ethicspoint.com, or
- Email to Ethics@DAI.com
- USAID's Office of the Inspector General Hotline at https://oigportal.ains.com/eCasePortal.

By signing this proposal, the offeror confirms adherence to this standard and ensures that no attempts shall be made to influence DAI or Government staff through bribes, gratuities, facilitation payments, kickbacks or fraud. The offeror also acknowledges that violation of this policy may result in termination, repayment of funds disallowed by the corrupt actions and possible suspension and debarment by the U.S. Government.

10. Attachments

10.1 Attachment A: Scope of Work

BACKGROUND

DAI is implementing the five-year (2021 – 2026), USAID funded Trade Central Asia activity (TCA), the goal of which is to provide technical assistance to the governments of Central Asian Region (CAR) countries and the private sector to improve region-wide trade connectivity and harmonization for accelerated economic growth. Furthermore, to mitigate the adverse trade effects that the Russian war on Ukraine is having on the people and economies of Central Asia, the USAID funded technical assistance through TCA is specifically geared towards achieving the following four results:

1. Increased trade to new international markets for Central Asian countries.
2. Increased trade along the Trans Caspian International Trade Routes.
3. Reduced time and cost to trade across borders within Central Asia.
4. Central Asian businesses connected to regional and global firms in key sectors with growth potential.

To increase trade along the Trans Caspian International Trade Routes, and to reduce the time and cost to trade across borders within Central Asia, TCA is supporting business process improvement and digitalization of the Caspian seaports of the CAR countries – Kazakhstan and Turkmenistan.

The port of Kuryk, in Kazakhstan, is located on the eastern coast of the Caspian Sea, south of the port of Aktau. USAID TCA is geared to support the development and deployment of an Automated Terminal Operating System (TOS) for the port of Kuryk, as part of larger support of digitalization of port operations.

The TOS is expected to be designed to automate the functions of cargo and transport vehicle management at the cargo terminal of a port. The main objectives of developing and deploying the TOS are:

i. Reducing vessel processing time.
ii. Reducing cargo dwell time in the port.
iii. Minimizing cargo movements during storage.
iv. Streamlining the handling of transport vehicles (TVs).
v. Reducing commercial discrepancies during document processing.
vi. Providing information on the availability and movement of cargo to port departments and external users (forwarders, agents, etc.).
vii. Facilitating information exchange with business partners and government regulatory bodies (customs control).

The port's TOS should account for all commercially significant operations related to cargo handling and storage, roll-on/roll-off cargo, and transport vehicles. This data is necessary for billing and invoicing services provided to the port's clients (agents and forwarders).

OBJECTIVES

USAID TCA is seeking the services of qualified entity / firm to design / provide and deploy the envisaged Automated Terminal Port Operation System for the port of Kuryk as per the Systems Requirements provided by the port, and described in Annex 1.

TASKS

The Selected Vendor will work in close coordination with the designated team of the port of Kuryk and will be responsible for the following tasks:

1. Implementation Planning: This stage involves developing an implementation plan, defining the budget, resources, and schedule. The plan should include defining the implementation stages, roles, and responsibilities of the participants.

2. System Development / Customization and Implementation:
    i. Installation and Configuration: This includes setting up the server, configuring client software, databases, and other system components. It also involves defining security and access parameters.
    ii. Integration with Existing Systems: If the system needs to integrate with other applications or systems, relevant configurations and testing are required to ensure compatibility.
    iii. Testing and Debugging: Conducting test trials to identify and rectify errors and issues. This includes functional testing, integration testing, as well as security and performance testing.

3. User Training: Preparing users for system use. This involves training on how to use the interface, perform tasks, and follow security protocols.

4. Real Environment Deployment: After successfully completing testing and user training, the system is ready for deployment in the real environment. This includes transferring the system from testing servers to production servers and commencing actual operational activities.

5. System Operations Support:
    i. Support and Maintenance: Ongoing technical maintenance and support for the system. This includes performance monitoring, updates, backups, and regular security checks.
    ii. Access Control and Security: Ensuring control over system and data access, regular security policy updates, and vulnerability detection and mitigation.
    iii. Performance Monitoring and Analysis: Continuous monitoring of system performance to identify issues and optimize performance. This also involves collecting and analyzing usage data.
    iv. Backup and Recovery: Regular data backups and recovery plans in case of failures. This ensures data integrity and the ability to recover quickly in case of incidents.
    v. System Updates and Development: System evolution to meet changing business needs and technological advancements. This includes software updates, adding new features, and improving existing ones.
    vi. User Support: Providing user support and assistance, resolving their issues and questions, and facilitating system usage.

vii. Logging and Auditing: Configuring logging for monitoring and auditing system events, which helps track user actions and identify security issues.
viii. Regular Documentation Updates: Documentation should be maintainable and regularly updated to reflect changes in the system and business needs.

6. Warranty:

a. After the system is implemented and the installation, testing and acceptance phase is completed, the developer will provide technical support for at least 1 year.
   - Stabilization period (3 months): Provided external technical support and maintenance services for a duration of 3 months.
   - Technical support - resolution of Bugs and Errors (9 months): Addressed and resolved any bugs or errors within 9 months after the project's conclusion.

DELIVERABLES

No.	Activity description	Deliverable	Due date (from the date of signing of the contract)
1	Implementation Planning	Detailed Action plan with key milestones and timelines approved by port of Kuryk and DAI.	2 Weeks
2	System Development / Customization and Implementation	Testing and rectification completed and report signed off. And completion of implementation certificate provided by port of Kuryk.	3 Months
3	User Training	User trainings and materials delivered and accepted by Port of Kuryk	3 Months
4	Real environment deployment completed	Completion report submitted by vendor and approved by Port of Kuryk and DAI.	4 Months
5	System Operations Support	Periodic reports as agreed upon signing of the contract	Periodically with last report submitted before the end of the Contract Period
6	Final Processes and Documentation	Project Closure: Final Reports: Submission of final project reports and documentation, including descriptions of processes, test results, lists of changes and improvements, as well as an	7 Months

		assessment of costs and resources. Project Documentation Handover: The completion and submission of all project-related documentation, including technical documentation, operation and maintenance instructions, and project management documents, policies and procedures for maintenance, monitoring, backups, security updates, and other aspects of system management.	
7	Warranty maintenance and technical support	A copy of the contract for the provision of technical support for 1 year signed by the Selected Vendor and Port of Kuryk	12 months after acceptance of fully operational system.

QUALIIFICATION REQUIREMENTS

i. Demonstratable, substantive experience of working with complex, multi-system environments particularly operations of port related ICT systems.
ii. Knowledge / experience of port operations and business processes of supply chain, freight forwarding, imports, exports, transit and customs clearance and team members with local insight/knowledge of the above will be given preference;
iii. Demonstrated experience of writing requirement/specifications of technology related products;
iv. Proposed team leaders must have a minimum of 10 years' relevant prior experience in design and implementation of ICT projects and should possess basic knowledge of project management, product design trends and good practices;
v. The Contractor shall submit its Technical Proposal for software delivery, meeting all requirements of Annex 1.

Period of Performance

07 months from the date of signing of contract.

Reporting Inspection & Acceptance

The selected firm will report to the assigned focal person from port of Kuryk, and USAID TCA Office Country Director, Kazakhstan.

The USAID TCA Office Country Director, Kazakhstan will inspect from time to time the services being performed to determine whether the activities are being performed in a satisfactory manner and are of acceptable quality and standards. The subcontractor shall be responsible for any countermeasures or corrective action, within the scope of this RFP, which may be required by the and USAID TCA Office Country Director, Kazakhstan as a result of such inspection.

ANNEX 1

Project and Systems Requirement for the Implementation of Automated Terminal Operating System at Port of Kuryk, Kazakhstan

1: Introduction

1.1 Project Objective:

The Automated Terminal Operating System (referred to as TOS) is designed to automate the functions of cargo and transport vehicle management at the cargo terminal of a port. The main objectives of the system's development are as follows:

- Reducing vessel processing time.
- Reducing cargo dwell time in the port.
- Minimizing cargo movements during storage.
- Streamlining the handling of transport vehicles (TVs).
- Reducing commercial discrepancies during document processing.
- Providing information on the availability and movement of cargo to port departments and external users (forwarders, agents, etc.).
- Facilitating information exchange with business partners and government regulatory bodies (customs control).

The port's TOS should account for all commercially significant operations related to cargo handling and storage, roll-on/roll-off cargo, and transport vehicles. This data is necessary for billing and invoicing services provided to the port's clients (agents and forwarders).

The port's TOS should account for all commercially significant operations related to cargo handling and storage, roll-on/roll-off cargo, and transport vehicles. This data is necessary for billing and invoicing services provided to the port's clients (agents and forwarders).

The required system must consist of the following basic components:

- Integration Platform, Message Broker - a middleware level, which should be responsible for sending and receiving messages to and from the TOS Core application.
- The Core Module - which is the heart of TOS - should act as a three-tier application that stores information received from the Message Controller and the Web module in the system database (RDBMS).
- He must apply business logic, report generation and audit trail recovery. It should display all the required system information through its WEB presentation level, which should also enable end users to enter the information. WEB layer should provide system connection for stakeholders who either lack their IT system or its integration is not feasible (for technical, regulatory or financial reasons)

2. System Requirements

2.1. System and Structure Requirements

The management system must encompass all stages of cargo and transport vehicle processing in the port, starting from the planning of the arrival of vehicles and cargo and ending with their departure.

The system's users consist of port departments and contractors. All tasks within the TOS are performed by users at two types of automated workstations (AWP):

1. Stationary (based on personal computers) in office spaces.
2. Mobile (based on wearable radio terminals) at loading and unloading fronts.

The system developers must consider the following:

a. The overall expected number of users ranges from 55 to 60.
b. The expected number of users working simultaneously is between 20 and 30.
c. User roles will be approved at the system development stage. It will require the participation of relevant services and departments.

2.2. The system of the terminal operating system should include:

2.2.1 Monthly planning (schedule for vessel arrivals and departures, import/export plans);
2.2.2 Planning and recording of vessel operations;
2.2.3 Planning and recording of automotive operations;
2.2.4 Planning and recording of railway operations;
2.2.5 Organization of address-based storage for various cargoes at the terminal;
2.2.6 User role assignment by the system administrator;
2.2.7 Cargo and rolling stock operation tracking from arrival at the port to departure;
2.2.8 Processing of all types of general cargo and rolling stock coming in export and import directions (including transshipment and additional operations such as weighing, inspection, etc.);
2.2.9 Cargo accounting by warehouses, allowing the breakdown of processed cargo by certain organizational units;
2.2.10 Shift and daily planning;
2.2.11 Real-time cargo handling process management;
2.2.12 Cargo storage time tracking;
2.2.13 Information search based on cargo documents, rolling stock number, and other parameters. Additional search options are provided for cargo marking;
2.2.14 Inter-system gateway with the port's Accounting system.
2.2.15 Integration Platform, Message Broker

2.3. The Integration Platform and Message Controller

The Integration Platform should receive, send and process B2B messages and act as an interface for recording message data in the central database. It should also contain administrative functions to control, manage and configure the application.

IT applications must communicate by exchanging officially defined messages through the network. The messaging intermediary should be like a communication intermediary, which translates a message from the sender's official message protocol to the recipient's formal message protocol. It should implement customization, reducing the reciprocal problem that applications have for each other regarding messaging.

The messenger must perform the following tasks:

i. receives messages from sender systems in real time
ii. verifies messages

iii. sends confirmation to senders to receive the message
iv. returns erroneous messages to the sender in case of failure or error in the message
v. transforms messages into a convenient format, as expected by the recipient
vi. records messages in a database
vii. sends messages to the recipient

The message broker must meet the following criteria:

i. be easily scalable.
ii. provides high availability support.
iii. be easily configurable and easy to maintain.
iv. have optimized implementation and maintenance costs.

The Message Controller is responsible for receiving, directing, transforming, and sending messages between all members of the TOS. The broker / controller also verifies if the sender can send a message to the recipient. Configuration settings should contain rules for each sender, specifying which messages they can send and to which recipients. There should be an opportunity to send the same message to multiple recipients. The message must be sent to each recipient through an approved data transfer protocol. The message format should be the same for all stakeholders, thus supporting standardization in car-to-car communication. Systems must be able to transform messages from one format to another.

Messages exchanged between TOS members must be implemented in the agreed XML format, with the support of the EDIFACT format.

Supported formats should include flat files and Excel (csv).

TOS members should be able to use their computer systems to generate messages or, if they do not have their own system, or when it is not possible to change their systems with the required messaging functionality, they can use instead the WEB functions (which perform data loading manually). In the first phase of project implementation, companies will have this option until the use of automatic interfaces by the latter.

Message Controller must have the following Communication Protocols:
• SOAP
• REST
HTTP (S)
• WCF
• TCP / IP sockets
• FTP and SFTP
• SMTP
• POP3
• Java Message services

While the integration should be based on the following formats:
• XML
• EDIFACT
• JSON
• CSV / Excel (by upload / import)
• Flat file (formatted)вd

2.4. The use of radio terminals for managing cargo reception and delivery.

2.4.1. Cargo Placement Rules: The system allows the creation of rules to determine the storage location for each cargo with specific parameters.
2.4.2. Routing Rules: The scheme for moving cargo from one zone to another.
2.4.3. General Cargo Handling: Processing general cargo involves the following stages:

- Preparation for processing
- Reception (unloading from the transport vehicle), including cargo placement
- Cargo delivery (loading onto the transport vehicle), including cargo selection
- Application of barcode labeling

2.4.4. Rolling Stock: Rolling stock refers to cargoes with similar loading technology, including:

- Wheeled vehicles (trailers, cars, etc., without drivers)
- Personal cars with drivers and passengers
- Cars with cargo and empty ones, with long-haul drivers
- Roll trailers (belonging to the line/shipowner), loaded or empty. The TOS should allow tracking operations related to unique rolling stock numbers (license plate numbers, VIN numbers). There are options for transporting automotive equipment in the form of a tandem (tractor + one or two trailers) or as a "sandwich" (one roll stands on another). Coupling and uncoupling operations are provided. For cars with drivers, a queue is organized for the ferry, and simplified entry and exit procedures are in place.

2.4.5. Railcars on Ferries: Railcars are accounted for in the TOS as a special type of rolling stock.
2.4.5 Inventory and Cargo Recount: (No specific information provided)

3. The functions (tasks) of the system:

3.1 Contract Management:

- Creating a directory
- Entering contract terms, duration, additional agreements, and conditions

3.2 Monthly Planning:
3.2.1 Monthly planning of fleet processing:

- Receiving and entering requests from agents
- Compiling a monthly plan
- Distributing the plan

3.2.2 Managing monthly cargo import and export planning by railway and road transport:

- Receiving and entering requests from counterparties
- Inclusion in the monthly plan

3.3 Vessel Processing Operations:

- Input of notations
- Entering cargo data
- Entry of requests for additional vessel work
- Approach documentation
- Tallyman reception
- Time sheet management
- Departure documentation
- Vessel closure

3.4 Processing of Automotive Vehicles:
3.4.1 Accreditation of drivers and vehicles:
- Receiving requests from counterparties
- Entering driver and vehicle information

3.4.2 Managing vehicle visit schedules:
- Creating and adjusting time slots for vehicle visits
- Categorizing vehicle visits

3.4.3 Handling requests for vehicle visits (cargo import/export)
3.4.4 Handling ferry requests for drivers
3.5 Handling Railway Transport:
- Coordinating train arrivals
- Staging trains in the port area
- Tracking wagon locations on exhibition tracks
- Freight train readiness
- Recording end of freight train readiness
- Moving wagons to station tracks
- Notifications

3.6 Processing of Imports:
- Input of bill of lading data
- Cargo reception from vessels, including generating a general receipt and notice-of-arrival
- Forwarder nomination
- Accepting wagons from the ferry, including creating a transfer statement
- Accepting vehicles from the ferry, including the creation of orders and requests
- Input of shipment information
- Restrictions and permissions for shipment
- Loading onto road transport
- Loading onto the railway

3.7 Processing of Exports:
- Receiving cargo from road transport
- Receiving cargo from the railway
- Generating orders and bills of lading for loading
- Recording vessel loading
- Loading wagons onto the ferry
- Electronic queue for cars (Formation of a registration card for the vehicle. Assigning vehicles to the ferry. Creating orders for vehicle entry and loading onto the ferry. Simplified vehicle entry and loading onto the ferry. Generating a registry of registered vehicles awaiting departure, categorized by status (e.g., waiting, processing, processed, loaded, etc.). Creating vehicle visits via checkpoints and recording entry times. Implementing a simplified process through the " Queue of vehicles for the ferry. Displaying on the monitor in tabular form and other information about the vehicles awaiting departure on the ferry,
- Loading vehicles onto the ferry."

3.8 Inspection:
- Covers all stages from request creation to sending inspected cargo to storage
- Capability to record the start and end of inspection operations

3.9 Internal Cargo Movement:
- Moving cargo (cargo batches) between warehouses and documenting it

3.10 Return of Export and Import Cargos
3.11 Changing Cargo State:
- Reflecting changes in cargo units, such as stacking roll trailers, cargo deterioration during storage, coupling and uncoupling, etc.

3.12 Additional Cargo Operations:
- Requesting a service
- Recording the start and completion of service delivery
- Generating a work completion report

3.13 Shift-Daily Planning:
- Entering ship arrivals, cargo stock on the premises, and workforce forecasts
- Planning vessel, train, vehicle, intrawarehouse, and other operations
- Output includes the Shift-Daily Plan (Plan)
- Recording actual data during operations
- Output includes the Shift-Daily Plan (Actual)

3.14 Operational (Shift) Port Planning and Regulation:
- Allocation to workstations
- Arrangement of machinery, dockworkers, and tallymen with Radio Data Terminals (RDT)
- Defining cargo stacking rules
- Replanning if necessary, during a shift

3.15 EDI Module: Automating information exchange between the TOS and counterparties' information systems

3.16. Reporting and Output Forms:

3.16.1. Ability to generate regular output forms:
- General receipts
- Receipt cards (export cargo records)
- Notice-of-arrival (one notice per bill of lading)
- General form receipts
- Commercial act requests
- Tallyman's receipts for cargo/rolling stock and more
- Receiving and Acceptance Order (for import dispatch)
- Transfer Statement
- Time Sheet (for parking time) or Parking Time Record
- Pre-Discharge Manifest from the Ferry
- Notice of Completion of Cargo Handling (per wagon or group of wagons)
- Request for Loading a Vehicle onto the Ferry
- The queue of vehicles for the ferry.
- Plan for Container Stowage
- Actual Container Stowage
- Wagon Handling Report
- Report on vehicle processing
- Report on general cargo processing
- Report on Wagons on the Tracks
- Work Order or Job Assignment
- Picking Order or Picking Task
- Assignment or Directive
- Bill of Lading

- Cargo Manifest

3.16.2. Reporting and Output Forms:

The requested forms are printed upon the operator's request. The reporting forms include:
• Inventory sheet,
• Inventory sheet (by cells),
• Monthly fleet processing schedule,
• Monthly import plan (by rail, by road; by cargo),
• Actual performance report of the monthly import/export plan (by rail, by road; by cargo),
• Cargo turnover report,
• Cargo handling report,
• Ship cargo receipt form,
• Ship cargo loading form,
• Wagon processing report.
• Car processing report (referring to cars shipped by ferry and received at the ferry)
• Report on the nomenclature of all transported goods (goods transported by rail, goods transported by road, and general cargo, including containers),
• Information on the key production indicators of the seaport for cargo transportation and handling.

3.16.3. Data Export to the Accounting System:

Exporting data related to completed operations to the port's accounting system.

4: Security.

The proposed system requires a resilient and secure infrastructure. Stakeholders should have the ability to connect to the TOS at any time. Backup and recovery capabilities are key requirements to ensure system availability at all times.

Adequate management of user profiles, roles, and access rights is also of paramount importance, and the ability to manage them through the system should be ensured. These should be defined and agreed upon with all stakeholders.

Using the system requires that members of the port community have a high level of trust in each other. Additionally, all stakeholders must be assured that their data is stored in a secure environment, just like the system owner.

4.1 Authentication.

All services and users wishing to access the system must identify themselves with a username and password. To prevent unauthorized access to the system, we adhere to a strong password policy:
• Passwords must be longer than 8 characters and contain some special characters and digits.
• After a certain number of incorrect password attempts, the system will lock the user's account, requiring action by the system administrator.

Every user who wants to access the system should receive a username and password. When creating a user, the system prepares a user profile associated with the user. Without a user profile, it's impossible to create a user object in the system. The user profile in the system is used to store information about the individual (name, job title, etc.).

4.2. Authorization

In the proposed system, each user is a member of an organization. When a user is granted access, they are always considered to be acting on behalf of one specific organization. If an organization establishes a connection between the TOS and its own system, it is the responsibility of the organization to ensure that this connection is used properly.

After successful authentication, the authorization process begins. Permissions are based on the definition of users and roles. Users are individuals who want to access the system.

Roles/functions/occupations of users:
A user is entitled to access specific parts of the application through their role (e.g., a transportation agent cannot perform functions intended for customs officers). Additionally, organizations that are actually connected to the system are defined. An individual user can have multiple roles within the subset assigned to the organization they work for.

Access auditing is available to track user actions. Access to (authorization) message processing is provided only within a registered organization.

In the system, each user (user profile) can only access documents for which they are responsible or to which another user has granted access. For each user, the system knows what operations they can perform on a specific document (view the document, approve the document, edit the document, delete the document, etc.).

The authentication and authorization module in the system supports the implementation of the principle of separation of duties. The principle of separation of duties, as a security principle, aims to prevent fraud and errors. This goal is achieved by distributing tasks and related privileges for a specific business process among multiple users (this principle is demonstrated in the traditional example of the requirement for two signatures for approval).

The system supports separation of duties through the paradigm of sequential separation - some duties should not be combined into one position. Based on role-based permissions, sensitive duties/actions can be assigned for separation of roles within a group.

4.3. Confidentiality

To ensure confidentiality, all passwords stored in databases or other data containers in the system are stored in encrypted form.

The existing system can perform logging for all critical tables of core data (core data, user master data, etc.) and for all transaction message initiations and completions. The logging module will record data about:

- Data access,
- Data updates or inserts,
- Transaction initiation,
- Message transaction changes,
- Transaction message completion.

4.4. Integrity

The system is designed to prevent data or message alterations. To ensure system integrity, data logging and auditing are followed.

All critical actions implemented in the system are logged in the audit log. To perform auditing, a table in a relational database should be used. This role is not available to regular users and is stored in encrypted form. Administrators have an auditing view role, which allows for auditing (sorting, filtering, etc.). This special component has sufficient privileges to monitor the actions of all users.

5: Network Requirements

5.1. Network Architecture:
The TOS must be deployed in a client-server architecture, where the server provides centralized data management and storage, and clients (terminals) connect to the server for operations.

To host and run the software, the Port of Kuryk is planning to purchase a hardware storage system using three servers and appropriate software that provides virtualization (VMware) as well as backup and recovery. Details are as below:

- Hardware compute node - 3 units;
- Data storage system - 1 unit;
- Commercial virtualization system product.
- Commercial backup system product.

The hardware and software complex should be a ready-to-use fault-tolerant solution for organizing a virtualized environment with centralized computing resources and data storage. The complex should have a centralized management system for computing resources, virtual machines, and an integrated management system for the hardware of the computing nodes (servers).

Specifications:
A. Hardware Compute Node:
• Processor:
1. No less than 2 installed processors
2. Base clock frequency of each core is no less than 3GHz
3. A minimum of 12 physical cores and no less than 24 threads
4. Level 3 cache is no less than 18MB
5. Semiconductor technology is no more than 10 nanometers
6. Processors released no earlier than the 2nd quarter of 2021
7. Support for enhanced software lock control instructions for parallel operations
8. Power consumption of each processor is no less than 150W.

• RAM (Random Access Memory):
1. No less than 8 installed modules
2. Each module has a capacity of no less than 32GB.

• Chassis Configuration and Variations:
1. Diskless front-end chassis configuration
2. Support for at least 8 variations (SFF SAS/SATA HDD/SSD) with a total capacity of 61.44TB
3. Support for at least 4 variations (LFF SAS/SATA HDD/SSD) with a total capacity of 64TB

• Boot Drives:
1. Presence of at least one storage server controller optimized for booting with two M.2 SATA SSD drives with a capacity of no less than 240GB, combined in hardware RAID1.
2. The controller should support drive installation and removal without opening the case and stopping the server, and hot-swapping of drives should be supported.

B. Data Storage System:
• Maximum number of supported disks, disk capacities, and disk types:
1. Support for no less than 276 disks in the maximum configuration with disk shelves;
• Supported RAID levels:
2. Support for RAID levels no less than 1, 5, 6, 10;
3. Support for a RAID level with capacity expansion technology and accelerated array recovery in case of disk failure;
4. The system should support the simultaneous use and mixing of any RAID levels within an array;
• Supported controller interfaces:
No less than:
1. 8 ports of 32Gb FC (Fibre Channel)
2. 8 ports of 25Gb iSCSI using SFP+ and SFP28 transceivers
3. 8 ports of 10Gb iSCSI Base-T
4. 8 ports of 12Gb SAS
• Storage Format:
1. SAN (Storage Area Network)
2. DAS block-level storage
• Integration with Virtualization Systems:
The system should support full integration with the following virtualization systems:
1. VMWare vSphere (ESXi)
2. VMWare vCenter
3. VMWare Site Recovery Manager
4. Microsoft Hyper-V

C. Commercial Virtualization System Product:
• Hypervisor:
Installation of the hypervisor as an additional role within the operating system is not allowed.
The hypervisor must be installed as a separate operating system on the hardware compute node.

D. Commercial Backup System Product:
Support for Virtual Infrastructures:
Support for backup of virtual infrastructures based on the VMware vSphere platform 5.5 and higher, including VMware vSphere 7.0 U3, with VMware Ready for vSAN certification.
Support for backup of virtual infrastructures based on the Microsoft Hyper-V platform starting from Windows Server 2008 R2 SP1 and higher, including Microsoft Hyper-V 2019 and support for 64 TB VHDX.

Backup Functionalities:
The backup platform should be able to use hardware snapshots of the storage system for backup purposes, ensuring application integrity within virtual machines. Interaction should be implemented using specialized storage-level APIs without the need to install additional software on the storage devices.

5.2. Assumed Bandwidth and Speed:

The system requires high network bandwidth to ensure fast and efficient data processing, especially under conditions of intensive work and information exchange between clients and the server.
Network bandwidth determines how much data can be transmitted over the network within a specific time period. It should be calculated considering the expected number of concurrent users and the volume of data they will be transmitting.

The TOS may involve the transmission of large volumes of data, such as information about vessels, cargoes, trucks, and railway transport. Therefore, the network should be capable of handling this information with minimal latency.
The bandwidth should be sufficient to ensure smooth and fast data transmission and operations, such as contract creation, order processing, plan formation, accounting for vessel and truck operations, and more.
Network speed is also crucial for responsive user query handling and efficient management of business processes at the terminal.

Measures for network optimization and resource reservation may be required to ensure the system's effective functioning even under peak loads. It is also important to monitor network and system performance to identify bottlenecks and improve data transmission speed when needed.

5.3. Network Stability and Reliability:
The operation of the TOS on the network should be stable and reliable to prevent system downtime. Redundancy and load balancing measures are allowed to ensure reliability.

5.4. Security and Data Protection:

i. Network and data security are among the most critical aspects for the system, especially when it processes sensitive information about contracts, transportation, cargoes, and other terminal aspects.
ii. Data encryption measures should be implemented during data transmission over the network. This will protect data from unauthorized access or interception.
iii. Authentication and access control should be built into the TOS. Users should have personal accounts with unique identifiers and passwords. This aspect provides control over access to the system's data and functions.
iv. Audit and monitoring mechanisms should track user activity to detect potential security threats or unauthorized actions.
v. Firewalls and intrusion detection systems can be used to prevent unauthorized network and system access attempts.

6: Integration with Third-Party Systems
6.1. Data Exchange with Customs Information System:
The exact level of integration with customs cannot be determined at this stage. A more detailed analysis of integration requirements should be conducted on-site and in collaboration with customs and experts from the Port of Kuryk. However, there is preliminary information on customs integration and data sharing in the following segments:

6.1.1. Inbound Cargo by Road or Rail:

- All cargo trucks and wagons entering Kazakhstan by land must be declared in the Kazakhstan Customs System Astana-1. Trucks and cargoes typically have a transit customs status and are subject to the TIR carnet or CMR procedures. Cargoes transported by rail typically proceed according to the CIM convention procedures. From the customs system, the TOS should receive information and data for all cargo vehicles and cargoes arriving at the Port of Kuryk from the land

part of the Kazakh state border. The TOS will use the received data for pre-declaration. The minimum set of data for exchange with the PCS includes:

1. Vehicle, trailer, or wagon number.
2. Cargo type.
3. Cargo quantity.
4. Cargo description.
5. Container number.
6. Date and time of border crossing.
7. Country of origin and country of dispatch.
8. Port of unloading and final destination (country).
9. TIR carnet or equivalent CMR number.
10. Customs procedure code.
11. Customs procedure status.
12. Harmonized System (HS) cargo number.

- For all cargo vehicles and cargoes traveling under a customs exit procedure, such as export goods, a customs broker or relevant party must submit an export declaration to customs. In the case of export, the information received from the Kazakhstan Customs System Astana-1 should consist of:
    1. Vehicle, trailer, or wagon number.
    2. Cargo type.
    3. Cargo quantity.
    4. Cargo description.
    5. Container number.
    6. Date and time of border crossing.
    7. Country of origin and country of dispatch.
    8. Port of unloading and final destination (country).
    9. MRN number or equivalent export customs procedure.
    10. Export customs procedure status.
    11. Harmonized System (HS) cargo number.

6.1.2. Inbound Cargo on Board a Vessel:

- To automate the cargo clearance process, the Terminal Operating System (TOS) must send all the required cargo information to the Customs System for verification. For each batch of clearance, we must receive information from the Customs System about whether the cargo is cleared or not. Based on this information, the TOS can accept or reject the cargo at the Port of Kuryk.

6.1.3. Outbound Cargo on a Vessel:

- When a vessel agent prepares the cargo manifest for loading, the information is passed to the customs system to check whether the cargo matches the manifest and has clearance for loading onto the vessel.

6.2. Integration with the Railway Transport Operator:

- A more detailed analysis of integration requirements should be conducted on-site and in collaboration with the railway operator and experts from the Port of Kuryk.

6.3. Integration with Other Ports:

- A more detailed analysis of integration requirements should be conducted on-site and in collaboration with experts from the Port of Kuryk.

6.4. Scope of Integration:

- The TOS can only integrate with an information system capable of data exchange based on Electronic Data Interchange (EDI). The third-party software should have the capability to exchange data using the following communication protocols:
    - SOAP Web Services.
    - HTTP and HTTPS protocols.
    - TCP/IP sockets.
    - FTP and SFTP.
    - Java Message Services.
    - REST.
    - JSON-RPC and XML-RPC.
    - MQTT (Message Queuing Telemetry Transport).
    - JMS.
    - SMTP.

7: Testing and Validation

During the execution of this task, all necessary tests will be conducted using acceptance test scenarios prepared as part of the analysis and design phase. User acceptance testing will cover both functional and operational aspects of the system, such as system reliability and performance.

To successfully conduct User Acceptance Testing, the contractor will start with all the preparations needed to initiate testing cycles. Preparation activities include setting up the testing environment, identifying team members, populating the necessary data for scenario execution, and more.

During each testing cycle, test results will be documented, categorized, and prioritized. The contractor will review and assess the test results and proceed to rectify any defects that are identified.

While testing the Terminal Operating System (TOS), the client will verify that the system complies with the agreed-upon functional and technical specifications before moving on to the next task. Technical documentation, user manuals, and training scenarios will also be reviewed as part of this task.

In parallel with TOS acceptance and integration testing, defect correction will begin. During the execution of this task, the development team will address all significant defects identified during testing and training.

Corrective patches will be stored on the production system. Each correction package will be properly documented. This activity must be completed before the system is put into operation.

8: Implementation and Operations

8.1. System Implementation:

- Implementation Planning: This stage involves developing an implementation plan, defining the budget, resources, and schedule. The plan should include defining the implementation stages, roles, and responsibilities of the participants.

- Installation and Configuration: This includes setting up the server, configuring client software, databases, and other system components. It also involves defining security and access parameters.
- Integration with Existing Systems: If the system needs to integrate with other applications or systems, relevant configurations and testing are required to ensure compatibility.
- Testing and Debugging: Conducting test trials to identify and rectify errors and issues. This includes functional testing, integration testing, as well as security and performance testing.
- User Training: Preparing users for system use. This involves training on how to use the interface, perform tasks, and follow security protocols.

8.2. System Operations:

- Real Environment Deployment: After successfully completing testing and user training, the system is ready for deployment in the real environment. This includes transferring the system from testing servers to production servers and commencing actual operational activities.
- Support and Maintenance: Ongoing technical maintenance and support for the system. This includes performance monitoring, updates, backups, and regular security checks.
- Access Control and Security: Ensuring control over system and data access, regular security policy updates, and vulnerability detection and mitigation.
- Performance Monitoring and Analysis: Continuous monitoring of system performance to identify issues and optimize performance. This also involves collecting and analyzing usage data.
- Backup and Recovery: Regular data backups and recovery plans in case of failures. This ensures data integrity and the ability to recover quickly in case of incidents.
- System Updates and Development: System evolution to meet changing business needs and technological advancements. This includes software updates, adding new features, and improving existing ones.
- User Support: Providing user support and assistance, resolving their issues and questions, and facilitating system usage.

9: Final Processes and Documentation

9.1. Project Closure:

- Project Performance Evaluation: At this stage, an evaluation is conducted to assess how successfully the project's goals and objectives were achieved. This includes an analysis of results, budget, schedule, and the quality of work.
- Preparation of Final Reports: The creation of final project reports and documentation, including descriptions of processes, test results, lists of changes and improvements, as well as an assessment of costs and resources.
- Project Documentation Closure: The completion of all project-related documentation, including technical documentation, operation and maintenance instructions, and project management documents.

9.2. Documentation:

- Technical Documentation: Developing technical documentation, including descriptions of system architecture, database structure, APIs, configurations, and other technical details.
- Operation and Maintenance Instructions: Creating detailed instructions for operating and maintaining the system, helping administrators and users properly use and support the system.
- Policies and Procedures: Developing policies and procedures for maintenance, monitoring, backups, security updates, and other aspects of system management.
- Logging and Auditing: Configuring logging for monitoring and auditing system events, which helps track user actions and identify security issues.

- Regular Documentation Updates: Documentation should be maintainable and regularly updated to reflect changes in the system and business needs.

10.2 Attachment B: Proposal Cover Letter

[On Firm's Letterhead]

<Insert date>

TO: DAI GLOBAL LLC.

We, the undersigned, provide the attached proposal in accordance with **RFP-**Click here to enter text.**-**Click here to enter text. issued on Click here to enter text.. Our attached proposal is for the total price of <Sum in Words (0.00 Sum in Figures) >.
I certify a validity period of 90 days for the prices provided in the attached Price Schedule/Bill of Quantities. Our proposal shall be binding upon us subject to the modifications resulting from any discussions.
By submitting this proposal:

- I acknowledge the solicitation amendments received.
- I acknowledge having adequate financial resources to finance and perform the work or deliver goods or the ability to obtain financial resources without receiving advance funds from DAI.

We understand that DAI is not bound to accept any proposal it receives.
Yours sincerely,

Authorized Signature:
Name and Title of Signatory: Click here to enter text.
Name of Firm: Click here to enter text.
Address: Click here to enter text.
Telephone: Click here to enter text.
Email: Click here to enter text.
Company Seal/Stamp:

10.3 Attachment C: Price Schedule

A. **Labor (including fringe, indirect, and fee)**					
Activity I: Implementation Planning					
	Labor Type/Position	**Unit**	**Level of Effort**	**Rate per Hour, USD**	**Total, USD**
1	Team Leader / Project Manager	Hours			
2	Other – please, specify	Hours			
3	Other – please, specify	Hours			
4	Other – please, specify	Hours			
	*** if required, please add as many lines here as necessary.				
Total Activity I					
Activity II: System development /Customization and Implementation					
	Labor Type/Position	**Unit**	**Level of Effort**	**Rate per Hour, USD**	**Total, USD**
1	Team Leader / Project Manager	Hours			
2	Other – please, specify	Hours			
3	Other – please, specify	Hours			
4	Other – please, specify	Hours			
	*** if required, please add as many lines here as necessary.				
Total Activity II					
Activity III: User training					
	Labor Type/Position	**Unit**	**Level of Effort**	**Rate per Hour, USD**	**Total, USD**
1	Team Leader / Project Manager	Hours			

2	Other – please, specify	Hours			
3	Other – please, specify	Hours			
4	Other – please, specify	Hours			
	*** if required, please add as many lines here as necessary.				
Total Activity III					
Activity IV: Real environment deployment completed					
	Labor Type/Position	**Unit**	**Level of Effort**	**Rate per Hour, USD**	**Total, USD**
1	Team Leader / Project Manager	Hours			
2	Other – please, specify	Hours			
3	Other – please, specify	Hours			
4	Other – please, specify	Hours			
	*** if required, please add as many lines here as necessary.				
Total Activity IV					
Activity V: System Operations Support					
	Labor Type/Position	**Unit**	**Level of Effort**	**Rate per Hour, USD**	**Total, USD**
1	Team Leader / Project Manager	Hours			
2	Other – please, specify	Hours			
3	Other – please, specify	Hours			
4	Other – please, specify	Hours			
	*** if required, please add as many lines here as necessary.				
Total Activity V					
Activity VI: Final Process and Documentation					

	Labor Type/Position	Unit	Level of Effort	Rate per Hour, USD	Total, USD
1	Team Leader / Project Manager	Hours			
2	Other – please, specify	Hours			
3	Other – please, specify	Hours			
4	Other – please, specify	Hours			
	*** if required, please add as many lines here as necessary.				
Total Activity V					
Total Labor					
B. ***Warranty maintenance and technical support***					
No.	**Description**	**Unit**	**Q-ty**	**Unit rate, USD**	**Total, USD**
1	12 months warranty maintenance and technical support services after acceptance of fully operation system.	Month	12		
Total Warranty maintenance and technical support					
C. **Travel and Transportation**					
Item No.	**Activity / Description**	**Unit**	**Quantity**	**Cost per Unit, USD**	**Total, USD**
1	Transportation expenses to and from / within Kazakhstan {airfare expenses}	Trips			
2	Per Diem {labor cost}	Day			
3	Accommodation {non labor cost}	Nights			
Total Travel and Transportation.					

VAT			
GRAND TOTAL (A+B+C+VAT)			

10.6 Attachment F: Past Performance Form

Include projects that best illustrate your work experience relevant to this RFP, sorted by decreasing order of completion date.

Projects should have been undertaken in the past three years. Projects undertaken in the past six years may be taken into consideration at the discretion of the evaluation committee.

#	Project Title	Description of Activities	Location Province/ District	Client Name/Tel No	Cost in US$	Start-End Dates	Completed on schedule (Yes/No)	Completion Letter Received? (Yes/No)	Type of Agreement, Subcontract, Grant, PO (fixed price, cost reimbursable)
1									
2									
3									
4									
5									

10.7 Attachment G: Representations and Certifications of Compliance

1. Federal Excluded Parties List - The Bidder Select is not presently debarred, suspended, or determined ineligible for an award of a contract by any Federal agency.

2. Executive Compensation Certification- FAR 52.204-10 requires DAI, as prime contractor of U.S. federal government contracts, to report compensation levels of the five most highly compensated subcontractor executives to the Federal Funding Accountability and Transparency Act Sub-Award Report System (FSRS)

3. Executive Order on Terrorism Financing- The Contractor is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. It is the legal responsibility of the Contractor/Recipient to ensure compliance with these Executive Orders and laws. Recipients may not engage with, or provide resources or support to, individuals and organizations associated with terrorism. No support or resources may be provided to individuals or entities that appear on the Specially Designated Nationals and Blocked persons List maintained by the US Treasury (online at www.SAM.gov) or the United Nations Security Designation List (online at: http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml). This provision must be included in all subcontracts/sub awards issued under this Contract.

4. Trafficking of Persons – The Contractor may not traffic in persons (as defined in the Protocol to Prevent, Suppress, and Punish Trafficking of persons, especially Women and Children, supplementing the UN Convention against Transnational Organized Crime), procure commercial sex, and use forced labor during the period of this award.

5. Certification and Disclosure Regarding Payment to Influence Certain Federal Transactions – The Bidder certifies that it currently is and will remain in compliance with FAR 52.203-11, Certification and Disclosure Regarding Payment to Influence Certain Federal Transactions.

6. Organizational Conflict of Interest – The Bidder certifies that will comply FAR Part 9.5, Organizational Conflict of Interest. The Bidder certifies that is not aware of any information bearing on the existence of any potential organizational conflict of interest. The Bidder further certifies that if the Bidder becomes aware of information bearing on whether a potential conflict may exist, that Bidder shall immediately provide DAII with a disclosure statement describing this information.
7. Prohibition of Segregated Facilities - The Bidder certifies that it is compliant with FAR 52.222-21, Prohibition of Segregated Facilities.

8. Equal Opportunity – The Bidder certifies that it does not discriminate against any employee or applicant for employment because of age, sex, religion, handicap, race, creed, color or national origin.

9. Labor Laws – The Bidder certifies that it is in compliance with all labor laws.

10. Federal Acquisition Regulation (FAR) – The Bidder certifies that it is familiar with the Federal Acquisition Regulation (FAR) and is in not in violation of any certifications required in the applicable clauses of the FAR, including but not limited to certifications regarding lobbying, kickbacks, equal employment opportunity, affirmation action, and payments to influence Federal transactions.

11. Employee Compliance – The Bidder warrants that it will require all employees, entities and individuals providing services in connection with the performance of an DAI Purchase Order to comply with the provisions of the resulting Purchase Order and with all Federal, State, and local laws and regulations in connection with the work associated therein.

By submitting a proposal, offerors agree to fully comply with the terms and conditions above and all applicable U.S. federal government clauses included herein, and will be asked to sign these Representations and Certifications upon award.

10.8 Attachment H: Proposal Checklist

Offeror: _____

Have you?

☐ Submitted your proposal to DAI electronically in PDF as specified in General Instructions above?

Does your proposal include the following?

☐ Signed Cover Letter *(use template in Attachment B)*

☐ Separate PDF Technical and Cost proposals individually sealed and labeled as Volume I and Volume II respectfully.

☐ Proposal of the Product or Service that meets the technical requirements as per Attachment A

☐ Response to each of the evaluation criteria

☐ Documents use to determine Responsibility

☐ Evidence of a Unique Entity ID (SAM) OR Self Certification for Exemption from Unique Entity ID (SAM)Requirement

☐ Past Performance *(use template in Attachment F)*

☐ CV of proposed key staff that would be assigned to the project

☐ Sample Maintenance, Warranty and Support agreement

☐ Project Plan

☐ Letters of recommendation from prior clients