TERMS OF REFERENCE FOR CONSULTANCY

Individual contract details:

Duration:	Eighteen months from January 2020 to June 2021
Location:	Tashkent, Uzbekistan
Estimated total budget:	$TBD.00
Grant reference:	SC160498
Relevant UNICEF outcome/output:	Outcome 3: By 2020 mothers and children, especially the most vulnerable, have access to quality healthcare services (individual and population based), including in emergencies. Output 3.1: By 2020, national authorities have increased capacity to formulate evidence-based regulatory framework and budgets for key maternal, newborn, child and adolescent health packages of interventions
Anticipated start Date:	January, 2020
Supervisor:	Chief of Child Health and Wellbeing Program

Title: Company for developing the Vaccine Management Information System

Background:

Starting January 2014, Uzbekistan has entered the accelerated transition phase from GAVI support to independent and sustainable vaccine procurement by the end of 2020. Taking this into consideration the Ministry of Health with support of UNICEF and WHO began implementation of the project on substantial cold chain improvement – Health System Strengthening (HSS). The project not only includes construction and renovation of cold chain facilities across the country and installation of modern equipment and devices, but also establishing modern electronic data base for vaccine stock inventory at the national, regional, district, and PHC levels.

Such upgrade of cold chain system requires development and introduction of a comprehensive, precise and professional quality monitoring system – Vaccine Management Information System (VMIS). The VMIS will connect all cold chain stores located at different levels into one network for constant consolidation and analysis of up-to-date information on vaccines stock, its movement and consumption, and possible re-fill, will provide a ready-to-go reports and information for decision makers, serve as a basis for the budgeting and forecasting. The system will allow to connect to Healthcare database once it is introduced in the country. This initiative is in line with the current government strategy to digitalize the information in healthcare system.

After assessment of current situation, the international expert developed the technical specifications of the software and proposed a list of requirements for selection of IT company.

Purpose:

The primary objective of this consultancy is to develop and implement an automated information system for the management of vaccines and cold chain monitoring to facilitate the management of vaccine inventory at all levels of cold chain system and data collection at real time for reporting purposes.

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Main objectives:

- Development of real-time Vaccine Management Information System (VMIS) based on Technical Requirements for the implementation of the VMIS in Uzbekistan.
- Deployment of VMIS at central, regional, district levels in Uzbekistan.
- Assess, develop and conduct end user trainings on VMIS.
- Post deployment support to address identified system shortcomings in the first 24 month after acceptance of final version.

Timeline & Deliverables:

Start day of the assignment: January 2020

End day of the assignment: June 2021

The selected company will be responsible to accomplish the following tasks in close collaboration with UNICEF health section:

    I.   **Development of Vaccine Management Information System**

ICT Assessment and Proposed Concept for Vaccine Management Information System report reveals that the process of supply and distribution of vaccines in Uzbekistan is organized manually and in paper format. Registers related to immunization coverage, complications and adverse reactions to vaccines are recorded in paper format, which is impossible to track children moving from one provider to another and very difficult to make decision timely. Development of an innovative online vaccine management system will address the burden of manual recordkeeping at all levels of vaccine management chain as well as enable Centers of State Sanitary-Epidemiology Surveillance (CSSES) access to actual data in real time.

The company is requested to ensure the following concrete tasks within this pillar in accordance with Technical Requirements for the implementation of the VMIS in Uzbekistan:

- Hold workshops with the stakeholders (Ministry of Health, Regional Health Departments, Medical Institutions, Warehouses, etc) and prepare a detailed Software Requirements Specification (SRS).
- Prepare and approve the detailed requirements specification for all necessary hardware infrastructure.
- Defining data sets from other MoH IT Systems (e.g. Accounting System, etc) needed for the implementation of electronic data exchange.
- Preparation of the detailed plan for software development and implementation of the System.
- Preparation of the final set of priority functional requirements that will be configured for the pilot use of the System.

    II.   **Deployment of VMIS at central, regional, and district levels in Uzbekistan**

As mentioned in Technical Requirements for the implementation of the VMIS in Uzbekistan, the system should adopt phased approach in implementation. Implementation process is divided into several phases. Therefore, the Company is requested to complete following tasks within this pillar:

- Deploy and configure the VMIS either on the MoH's, UzMedInfo or any other cloud infrastructure approved by Project Board.
- Integration with other MoH IT Systems, according to the specification and identified data sets.

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- Integration with the official website of MoH and ensure public access to the availability of vaccines in medical institutions.

III.   **Assess, develop and conduct end user trainings on VMIS**

Assessment of training needs, as well as developing training materials is an important aspect of implementation of an innovative vaccine management system in Uzbekistan. Training of end users on newly developed online vaccine management system will positively impact on adoption rate. It is requested that the Company will complete following tasks within this pillar:

- Develop detailed training program, including the training materials for target groups. The program and training materials should be approved by Project Board and should be in Russian and Uzbek language.
- Prepare and print out training materials in the form of manuals for each target group.
- Conduct hands-on training sessions for end users of the system.
- Conduct separate trainings for IT staff for which curriculum should include detailed architecture, functionality and the maintenance of the system.

IV.   **Post deployment support**

Post deployment support phase starts after the Final Acceptance[1] is signed by UNICEF and will last for period of 24 months. This phase includes technical support to address any shortcomings related to system functionalities and features. The Company is required to complete following tasks within this pillar:

- Solve technical as well as functional problems related to the System for a period of 24 months after the acceptance of the operational version.
- Deploy any available updated and upgrades to the System, including DBMS and other third-party software deployed as part of VMIS solution.
- Support IT staff of MoH in addressing the issues related to maintenance of the VMIS.

Timeframe and deliverables:

#	Tasks	Deliverables	Duration	Payment
1	Design of the System	**Deliverable 1.1:** Detailed Software Requirements Specifications and System Design Specification (SRS+SDS) of the VMIS including the analysis and design documentation and requirements specification (business-process flowcharts related to the management of vaccines, data flow diagrams, etc.) in a form needed either for an offered COTS configuration/upgrade or for a complete development of the VMIS. Also the Detailed Design documents must include the following: The System Architecture describing the models in UML	Three months after signing the contract	

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[1] UNICEF and MOH reserve the rights to hire independent company to verify the quality of contractual work before Final Acceptance is signed.

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language to include at least the following (with sufficient level of detail):

- o Analysis Model, including:
    - Requirements model and/or Use Cases model;
    - Domain Model, fully specifying the Entities and the relations between them;
- o Component Model, including narrative description of all components, the links between them and integration interfaces with other systems/external components;
- o Logical Model;
- o Deployment Model, including UML diagrams and narrative description of all nodes and the links between them. This model will also contain the precise specifications of equipment and operation environments for the operation of the System at normal parameters, as well as specifications for a minimal configuration;

Dynamic Model, including diagrams and narrative description of the states and transitions of the key entities;

Deliverable 1.2: Specification of the data exchange automation interfaces (APIs) with other external information systems, if any.

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		Deliverable 1.3: Detailed specifications of the required virtual servers and other needed hardware infrastructure. **Deliverable 1.4:** Technical specification of the end-users' hardware (e.g. Laptops, PCs, printers, etc). Deliverable 1.5: Detailed implementation plan of the VMIS. Deliverable 1.6: Project Management Monthly Status Reports.		
2	System development/configuration of the **Pilot version**	Deliverable 2.1: Established development and test environments on either MOH's or other cloud infrastructure. Deliverable 2.2: Developed and configured VMIS priority functionalities (Pilot version) according to the prepared detailed requirements specification. Deliverable 2.3: Pilot version integrated with the identified relevant external information systems according to the detailed software requirements specifications Deliverable 2.3: Initial versions of Training materials: Training curricula; Deliverable 2.4: Initial version of the User's Manuals	Six months after singing of the contract	
3	Piloting phase	Deliverable 3.1: Report on Piloting Period, which includes discovered bugs, concerns, proposals on how to fix them and conclusions	One month after starting the piloting	
4	Final Development/Adjustments and Users' Training	Deliverable 4.1: Report on corrective changes of the software as a result of piloting Deliverable 4.2: Report on implemented functionalities (all functionalities according to SRS document), including compiled and documented source-code. Deliverable 4.3: System Reporting requirements and implemented reports Deliverable 4.4: Final Training curricula, Training presentations; Deliverable 4.5: Final versions of User's Manual and Administrator's manual,	Six months after signing the contract	

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| 5 | Quality Assurance and support and maintenance | Deliverable 5.1: Testing scenarios

Deliverable 5.2: Reports on performed testing (functional testing, performance (Load and Stress) testing and Security Testing).

Deliverable 5.3: Report on provided support and maintenance services during an agreed period of time | | |

Management:

The Consultant will work under direct supervision of Child Health and Wellbeing Programme Chief and in close collaboration with Immunization Officer and IT Specialist as well as with identified national partners. UNICEF has right to appoint the independent IT specialist for quality monitoring and project implementation.

Resource requirements:

This assignment will be funded through GAVI HSS funds (SC 160498).

Required qualifications and areas of expertise:

The Tenderer must satisfy the following requirements:
- Mandatory minimum 5 years of experience in the field of design, development and implementation of complex software solutions for public authorities;
- Successful experience as prime contractor in execution of at least two successful projects (contracts) of a complexity comparable to proposed contract within the last 4 (four) years, were the beneficiaries of the projects are public authorities;
- The Tenderer shall provide at least 2 (two) customer signed project reference of successfully implemented ICT projects designed for central public authorities.
- It will be considered as a strong asset if the Tenderer has a local office or at least a consortium partner or subcontractor or a representative in Uzbekistan;
- The Tenderer must have developed any logistics management information system in the health sector and should be able to demonstrate the software that was successfully deployed in any country.

Joint ventures (JV) must satisfy collectively all of the above-mentioned qualification criteria, for which purpose the relevant figures for each of the partners shall be added to arrive at the joint venture's total capacity:

- The lead partner of the JV shall demonstrate that he acted as a main Contractor on project of similar magnitude;
- The lead partner shall meet at least sixty (60%) percent of the minimum qualifying criteria for general experience and financial position required above
- Other partners shall meet at least twenty (20%) percent of the minimum qualifying criteria for general experience and financial position required above

The tenderer and each partner in case of JV shall demonstrate his strong financial position and long-term profitability by providing audited balance sheets and profit and loss statements for the last three years.

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Key Personnel

The minimum required experience of proposed professional staff to be employed by the Contractor is at least for 5 years. Other requirements are specified in the following table.

Contractor team will include at least the following key members: a team leader and members of the team, based on the most appropriate formula, proper for the assignment.

The minimum qualification requirements for the key staff members are described below:

Table 2.5 Requirements regarding Contractor's Project Team

3.1	Qualifications of key personnel proposed
3.1 a	**Project Manager:**
	University degree in areas such as computer sciences, engineering, and telecommunications or other ICT related
	At least 10 years of overall professional experience in the IT field
	Specific professional experience proved through participating in at least one similar project for implementation of an integrated information System, in which he/she held a position of Project Manager.
	Ability to speak, write and read Uzbek and/or Russian language is an advantage;
	Ability to speak, write and read in English
	Internationally recognized Project Management certification such as PMP, PRINCE2, Agile or equivalent is an asset
3.1 b	**Lead Business Analyst:**
	University degree in areas such as computer sciences, engineering, and telecommunications or related;
	At least 5 years of experience in the field of IT Business Analysis, user requirements elicitation;
	Specific professional experience proved through participating in at least one similar project for implementation of an integrated information System, in which he/she held a position of Lead Business Analyst;
	Ability to speak, write and read Uzbek and/or Russian language is a strong advantage;
	Ability to speak, write and read in English
	Internationally recognized certification in Business Analysis issued by an internationally recognized institution proving advanced knowledge regarding requirements' identification, analysis, prioritizing, management, communication, verification and validation (e.g. PBA, CBAP or equivalent) is an asset
3.1 c	**Lead Software Development Engineer:**
	University degree in areas such as computer sciences, engineering, and telecommunications or related;
	At least 10 years of overall professional experience in the IT field
	At least 5 years of experience in the field of Software Development

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	Specific professional experience proved through participating in at least one similar project, for implementation of an integrated information System, in which he/she held a position of Technical Leader
	Certificate recognized at international level, proving knowledge regarding a software development technology on which the proposed VMIS solution is based
	Ability to speak, write and read Uzbek and/or Russian language is an advantage;
3.1 d	**Database Developer**
	University degree in areas such as computer sciences, engineering, and telecommunications or related;
	At least 10 years of overall professional experience in the IT field
	At least 5 years of experience in the field of Software Development
	Specific professional experience proved through participating in at least one similar project, for implementation of an integrated information System, in which he/she held a position of Database Developer/Designer.
	Certificate recognized at international level, proving knowledge regarding database administration/design/development is an asset;
	Ability to speak, write and read Uzbek and/or Russian language is an advantage;
3.1 e	**Software Tester Engineer**
	University degree in areas such as computer sciences, engineering, and telecommunications or related;
	At least 5 years of experience in the field of Software Development
	Specific professional experience proved through participating in at least one similar project, for implementation of an integrated information System, in which he/she held a position of Technical Leader
	Certification recognized at international level regarding advanced competences related to setting the optimal testing activities based on risk analysis of information systems and tests execution depending on the particular methodology for software development (for example ISTQB or other internationally recognized certification related to the software testing) is considered as important asset
	Ability to speak, write and read English, Uzbek and/or Russian language is an advantage;
3.1 f	**Training Specialist**
	University degree in areas such as computer sciences, engineering, and telecommunications or related;
	Specific professional experience proved through participating in at least one similar project, for implementation of an information System, within which he/she held a position of Trainer.
	Excellent speaking and writing in Russian and/or Uzbek;

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Procedures and Working Conditions:

The company is expected to work in close cooperation with the UNICEF and MOH. All travel expenses occurred during consultancy should be considered as a part of consultancy fee and no additional payment from UNICEF is expected. UNICEF undertakes no liability for taxes, duty or other contribution payable by the consultant on payments made under this contract.

Reservations:

UNICEF reserves the right to withhold all or a portion of payment if performance is unsatisfactory, if deliverable(s) incomplete, not finalized or for failure to meet deadlines. UNICEF will reserve copy right of all developed materials and own primary data collected through this assignment. The materials cannot be published or disseminated without prior written permission of UNICEF. UNICEF will be free to adapt and modify them in the future. The contractor must respect the confidentiality of the information handled during the assignment. Documents and information provided must be used only for the tasks related to these terms of reference.

Submission:

Legal entities interested in participating shall submit their proposals in response to the tender documents as published by UNICEF not later than 10 December 2019. Applicant should submit the technical and financial proposals in separate envelopes, containing the following:

- Detailed description of the enterprise (experience, human resources, specialized management and technical capacities, etc.);
- Copy of registration documents;
- Certificate confirming that the company has no arrears to the budget;
- The portfolio of the company showing similar projects;
- References of beneficiaries of the company for the last 3 years;
- CVs of key personnel involved in the project;
- Brief description of similar information solutions or ICT solutions;
- Detailed technical description of the proposed software solution, including hardware operational restrictions, estimation of activities and their duration;
- Guarantee period and technical assistance period;
- Detailed financial proposal;
- Other relevant documents.

Sealed envelopes should be submitted by the indicated date in the tender package to the UNICEF Country Office located at:

16, Sharof Rashidov street,
Business center Poytakht,
3d floor UNICEF

Envelopes should be marked with the following:
VLMIS Uzbekistan
Technical (financial) proposal

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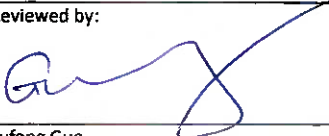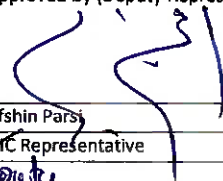Republic of Uzbekistan

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Selection process:

The selection of the consultant will be based on evaluation of technical and financial proposals. The scoring ration between technical and financial proposals is 70/30 respectively. The following criteria will be used for technical assessment of the application:

1. Bidder qualification, capacity and experience (300 points)
2. Proposed methodology, Approach and Implementation plan (300 points)
3. Management structure and Key Personnel (400 points)

In summary winner should obtain up to 1000 points which will be equal to 70% allocated to technical proposal.

	Prepared by (Requesting Officer):	Reviewed by:	Approved by (Deputy Representative):
Signature			
Name	Nargiza Fuzailova	Sufang Guo	Afshin Parsi
Title	Immunization Officer	Chief of Child Health and Wellbeing	OIC Representative
Date			Deputy