

TERMS OF REFERENCE

Re-engineering of the electronic platform of the surveillance system for communicable diseases and public health events and development of the updated information technology (IT) solution for the nominal cases notification, including COVID-19 cases and associated reports generation, including GIS presentation

2 January – 30 March 2021

1. Background

In 2018 with WHO support Republic of Moldova conducted the comprehensive Joint External Evaluation of IHR core capacities¹. Among the four overarching recommendations emerged one was related to the update electronic systems for surveillance of communicable diseases and public health events and implement IT solutions for data collection and communication. Moldova has a clear need for joined up, interoperable electronic systems to collect, manage and report data.

The Minister of Health, Labor and Social Protection (MoHLSP), through the National Agency for Public Health (NAPH), based on the Government Decision² is responsible for maintaining, managing and improving the national surveillance and control system for communicable diseases and public health events by using electronic (information technologies) system. Based on the national legal framework the surveillance system for communicable diseases and public health events have to be managed in the such way to assure appropriate data reporting, compilation and analysis, including COVID-19 cases.

In the Republic of Moldova, the COVID-19 pandemic public health response is organized in accordance with the National Emergency Preparedness and Response plan³ approved by the National Extraordinary Committee for Public Health, which was developed based on the WHO Strategic Preparedness and Response for COVID-19. One of the important pillars of the national plan is referring to the epidemiological surveillance system. The national legal framework in epidemiological surveillance is regulated by law No.10/2009 and aims at rolling indicator-based and event-base surveillance.

Epidemiological surveillance for COVID-19 is performed based on the case definition (suspected, probable and confirmed case) and is mandatory for reporting by medical workers and is paper-based. The paper forms of COVID-19 cases with ~ 40 variables collected from the primary health care doctors are registered by the laboratory professionals in the Excel line list. At the beginning of COVID-19 pandemic the database was easily managed, in meantime more than 80000 cases have been reported in the

¹ Joint External Evaluation of IHR core capacities of the Republic of Moldova, Mission report: 1–5 October 2018 <https://apps.who.int/iris/bitstream/handle/10665/311711/WHO-WHE-CPI-2019.54-eng.pdf;jsessionid=30E6840B0562F82B5322C484C794C01B?sequence=1>

² Government Decision nr.951/2013 https://www.legis.md/cautare/getResults?doc_id=103100&lang=ro

³ The National COVID-19 Emergency Preparedness and Response plan, II-nd version, September 2020. <https://msmps.gov.md/wp-content/uploads/2020/09/Plan-r%C4%83spuns-COVID-19.pdf>

database. The database in Excel format with such amount of cases is difficult to manage. Therefore, the surveillance system for communicable diseases and public health events, electronic platform after re-engineering could solve the issues regarding data reporting and management.

The Republic of Moldova has implemented a national surveillance system for detection and control of public health threats and monitoring of national prevention and control programmes. In order to respect the routine flow of information epidemiological surveillance for COVID-19, performed based on the case definition (suspected, probable and confirmed case) have to be integrated in the national surveillance system for communicable diseases. As other diseases COVID-19 is mandatory for reporting by medical workers. The COVID-19, communicable diseases and public health events surveillance assures transparent and standardized approach on data collection, analysis and development of evidences for decision making process.

A initial comprehensive electronic surveillance tool, which had improved epidemiological surveillance system for avian influenza and others infectious diseases "(SIA"SPS"or SAE) was developed in 2008-2009. The system was implemented for reporting and analyzing of notifiable communicable diseases, including avian influenza at all levels, and included data exchange mechanism across sectors (food safety, animal health and public health). The abovementioned electronic system, managed by the NAPH of the MoHLSP was developed using technologies available at the stages of development that have become technologically and morally obsolete.

The evaluation conducted by the independent team of experts (April – June, 2020) have concluded that hardware and software are outdated and require a process of re-engineering with development and its adjustment to new conditions and technologies. From the beginning of the COVID-19 pandemic several attempts to re-establish electronic platform have failed therefore the MoHLSP working groups decided that re-engineering of the electronic system will be an appropriate solution. At the same time, in the context of the COVID-19 pandemic, there was an urgent need to supplement the old platform with new functionalities at the later stages of development.

So, re-engineering of the electronic platform, with development of the concept note and technical specification have been required by the Ministry of Health, Labour and Social Protection in the official letter nr.04/262 from 14.07.2020.

Thus, WHO Country Office of Moldova in the context of strengthening the National surveillance system for communicable diseases, including for COVID-19, requirements of the National Central public Health authority as well as results of the JEE of the IHR core capacities is looking to recruit an IT company to develop the functionalities in new national surveillance system for communicable diseases, in line with the technical specifications and Functional requirements. The selected IT company will work in close collaboration with representatives of NAPH and MoHLSP and WHO consultants and staff.

As an expected results of the work the Central Health authorities in the Republic of Moldova in evidence and policy of communicable diseases and public health events surveillance are provided with technical support in the strategical activities.



2. Deliverables

Overall objective: to conduct the re-engineering of the electronic platform of the surveillance system for communicable diseases and public health events and development of the updated information technology (IT) solution for the nominal cases notification, including COVID-19 cases and associated reports generation, including GIS presentation.

Specific Objectives

The specific objectives of the work will be as follows:

- a) To develop and implement the IT solutions that will assure all service components of the attached functional and non-functional requirements described in technical specification for national electronic informational system;
- b) To liaise with collaborators such as data managers, statisticians, data entry and data analysis experts within the NAPH to optimize processes for development of the new system and to ensure participation in working meeting, as needed;
- c) To document the development process and progress in IT solution development according to ToR requirements;
- d) To ensure technical support and troubleshooting during implementation stage and within a time defined in the contract as a maintenance period;
- e) To ensure IT solution development base on V-model methodology;
- f) To ensure the usage of Microsoft SQL Server for data storage;
- g) To ensure information security and data protection within the system, also accomplishments of requirements related to protection of personal data.

Deliverables:

1. New modules / (business) functionalities based on the technical specification are developed, *before 15 March 2021*:

- a) Notification of nominal cases of communicable diseases and results of the epidemiological investigation;
- b) Report on geographical distribution of the cases
- c) Reports generations
- d) Alerts generation

2. Electronic (business) functionalities testing and piloting. Provision of the test result report (written testing scenarios and report on successfully tested functionalities) by 31 March 2021.

3. Written documents and reports are developed and presented to the working group:

- a) Report on internal test results (functional, performance, security);
- b) Document on system administration;



c) Document on technical specification base on the solutions proposed, system architecture, configuration and deployment (deployment instructions).

4. Progress reports are developed and presented, with overall status on the project development and implementation (one report per month).

5. Presentation to WG the weekly updates on the modules/business functionalities development progress.

6. Conducting 2 trainings (up to 14 persons per training) on system administration, before the end of Feb 2021.

7. Application Codes of the new functionalities, supporting documents (system architecture, configuration and deployment (deployment instructions)) for new platform will be delivered to the Beneficiary, before 31 March 2021.

8. Granting the guarantee minim for 12 months from the date of signing the final acceptance;

Remark

The beneficiary reserves the right to make changes in volume of 10% from amount of work described in the technical specification.

3. Contract duration

The duration of Contract *2 January – 30 March 2021*

Payment schedule

- 25% as instalment I – upon signing of contract agreement
- 75% last instalment– upon successful completion of work and submission of financial, technical reports, testing report and Application Codes

4. Qualifications, experience, skills and languages

Skills and Qualifications

The Service Provider should have knowledge and experience in the following areas:

- Having a working knowledge of common information technologies and systems development;
- Experience at least 3 year in development and implementation of health IT systems.
- An experience in other area of working with additional proofing practice may be accepted in lieu of the health IT systems development experience.
- At least one information system implemented and successfully working in the Republic of Moldova;
- Experience in configuring IT solutions in MCloud;
- Communicating complex IT concepts to a general audience;
- Troubleshooting common IT problems;
- Theoretical and practical expertise in all aspects related to data management, including database architecture;



- Ability to design and implement effective IT solutions, data architecture services and models to store and retrieve technical data;
- Ability to examine and identify structural necessities by collaborating with technical programs;
- Practical experience to develop, implement and assess database implementation procedures to ensure they comply with policies and regulations.
- Proofing educational qualification of the staff involved to the electronic platforms development and implementation.

The human resource portfolio have to include:

Expert – with experience in the project management

- Minimum 5 years experience in project management and licensed in the field of Information Technologies and Communications;
- Experience in 2-3 projects to implement similar solutions, in the role of project manager for the entire duration of the project.
- Higher Education, holding a Certificate with a minimum of 5 years of experience issued by an internationally recognized institution in the field of project management.
- Knowledge of the Romanian language is mandatory.

System infrastructure specialist

- Higher ICT studies completed with a bachelor's degree;
- Competences proven by certification in the management of IT services;
- General professional experience in the IT field more than 6 years.
- Experience gained by participating in 2-3 projects in complex IT activities on software and hardware infrastructure in information systems

Quality assurance specialist in the field of security

- Higher education completed with a bachelor's degree in computer science;
- General professional experience in the IT field of at least 2 years;
- Competences regarding the audit of the security of information systems, proven by the presentation of a certification in the field issued by the competent public authority with general recognition or by an authorized public or private law body.
- Competences regarding the audit of quality management systems, proven by the presentation of a certification in the field issued by the competent public authority with general recognition or by an authorized public or private law body.
- Experience gained through participation, in the position of quality expert

Specialist in the technology proposed by the bidder

- Higher education completed with a bachelor's degree in computer science;
- Experience according to CV of at least 3-5 years in database programming
- Experience according to CV of at least 3-5 years in programming web applications and databases: HTML, Javascript, CSS, MSSql Server



5. Supervision
The experts will work closely with the responsible technical officers: <ul style="list-style-type: none"> - Dr. Stela Gheorghita, National professional officer, WHO CO; - Dr. Igor Pokanevych, WR, WHO CO Republic of Moldova
6. Location (including in-country missions, if any)
Activities will be organized in Chisinau.
7. Remuneration and budget (travel costs excluded)
Budget breakdown (annex)

Annex 9

Nr/o	Description of the activities	Unit	Cost per/unit	Total amount
1.	Developing of business functionalities based on the technical specification			
	a) Notification of nominal cases of communicable diseases and results of the epidemiological investigation;			
	b) Report on geographical distribution of the cases			
	c) Reports generations			
	d) Alerts generation			
2.	Testing and piloting of the business functionalities. Provision of the test result report (written testing scenarios and report on successfully tested functionalities)	1		
3.	Developing and presenting of written documents and reports to the MoHLSP and NAPH working groups			
	a) Updated technical specification base on the solutions proposed	1		
	b) Report on internal test results (functional, performance, security)	1		
	c) Document on system administration	1		
	d) Document on system architecture, configuration and deployment	1		



	(deployment instruction).			
4.	Developing and presenting of the progress reports with overall status on the project development and implementation (one report per month).	3		
5.	Conducting 2 trainings (up to 10 persons) on system administration (training package, Draft Agenda, 3 PPTsX2 trainings)	2		
6.	Administrative cost			
7.	Other cost (specify)			