

### **Call for Expressions of Interest and Proposal**

**Job Title:** VN029 - Develop a module of aDSM (active TB drug safety monitoring and management) for reporting adverse events integrate into existing TB surveillance systems

#### **1. Background:**

Vietnam is one of the 30 countries with the high burden of drug-resistant tuberculosis with an estimation of 8,600 new MDR-TB cases in 2018. However, only 3,110 cases were detected under PMDT in the same year. The treatment unsuccessful rate of MDR-TB patients in the cohort of 2016 was at 32%, of those 15% was lost to follow up. Most of the cases in lost follow up group were defaulted. This is mainly because of long duration of regimen with toxic medications cause many adverse events from mildness to seriousness during their treatment.

In accordance with WHO guideline on active TB drug safety monitoring and management (aDSM), NTP Vietnam with new introduction of new regimen, repurposed medications, new drugs such as Bedaquiline (Bdq), Delamanid (Dlm) for MDR-TB treatment under certain conditions has initially implemented the aDSM in some piloted provinces before deploying national guideline on aDSM. aDSM applies to patients on treatment with new anti-TB drugs, new MDR-TB regimens, including the shorter treatment regimen, and extensively drug-resistant TB (XDR-TB) regimens.

The aims of aDSM is to detect, manage and report suspected or drugs side effects/toxicity in a good time manner. Under Vietnam circumstance, the agreement between NTP and National pharmacovigilance center at National Pharmacy, a system of aDSM has been set for collecting all serious adverse events (SAEs), adverse events of interested (AoIs) among those whose treatment regimen contained new drugs starting from early 2017.

Digitising aDSM information from PMDT unit is the most suitable solution to report an adverse event timely and completely. Moreover, information that need to be collected will be presented in a friendly way under integrated module with current surveillance systems. Thus, health staff will not miss to enter the data. In addition, the integration of aDSM module into VITIMES and eTB Manager provide a comprehensive system which includes valuables data for further analysis. Further, an opportunity of aDSM module is to create a dashboard showing drug safety management activities in real time. It will provide valuable information for NTP in policy making and programmatic management.

To support for the National TB program (NTP) in development of the aDSM module that can be integrated into e-TB manager and VITIMES system, the WHO office in Viet Nam is recruiting an information technology (IT) company that can work with NTP to develop the aDSM module.

#### **2. Work to be performed**

Under the guidance of the WHO Viet Nam country office responsible officer and in collaboration with the National Tuberculosis Programme of Viet Nam, the service provider is expected to undertake the development of a web-based app to enter data with function sync offline in case no internet connection during enter data and connect to internet later. The web-based app required with following characteristics:

***User interface:***

- Friendly GUI with yellow color
- The initial interface is the list of management sites and inside those is the list of provinces
- Interface used by province will have information that synced Form TB manager/VITIMES system

***Applications version need to develop:***

- A web-based application to enter and manage data. The web app needs to be compatible with popular web browsers such as: google chrome, safari, firefox, Microsoft edge and Cốc cốc. It can be adjusted to fit with any size of user's computer screen.
- An android mobile application with synchronizing feature allows user entering data even though limited internet connection. Data can be stored locally and synchronized to server when internet is available. It can be fit with any size of Android phones and tablets.

***Other requirements:***

- Language: Vietnamese
- Availability to link and share data with VITIMES and eTB manager
- System maintenance in 1 year.

***Majority functions:***

- User management:

Role	Permission						View
	Case-based data entry	Reporting	Adjust case data	Submit reports	Export data	Comment	
Regional user		x			x	x	By managed region
Provincial user	x	x	x	x	x	x	By managed province
National user (NTP and PV Center)		x			x	x	Nationwide

**Note:** Users can be login system using existing VTM/ eTB account. If they don't have those accounts, accounts can be created and managed by system

- Case management: information that need to be collected are available on Annex 1. It can be linked to Vitimes and eTB Manager to find TB/MDR-TB patients in order to get their existing data.
- Report management: reporting form is on Annex 2

#### **Method(s) to carry out the activity**

- Meeting with NTP team and others to understand on requirement for the aDSM Module
- Design architecture of system
- Develop the aDSM module (web and android mobile application version)
- Release prototype version. NTP and other related partners could have tested online. All issues will be noted by NTP and adjusted by IT company. We will conduct online training and pilot in Hanoi Lung Hospital in 1 month.
- Review meeting after pilot
- Adjust module after pilot phase and release product version.
- Develop documents such as technical documents, user's guide and handover to NTP.
- Online Training on aDSM module

#### **Output/s**

##### Output 1:

- Deliverable 1.1: System architecture description document

##### Output 2:

- Deliverable 2.1:
  - o Product version and source code (Web application and android mobile application)
  - o Android mobile application will be published successfully on Google play.
  - o Google account which manages application on Google play (google application market) if don't use NTP's google account.

##### Output 3:

- Deliverable 3.1: Related documents:
  - o Technical documents
  - o User's guide

### **3. Specific requirements**

Requirement	Service provider
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<b>Qualification</b>	<p>Essential: an IT company recognized famously in Viet Nam</p> <p>Desirable:</p> <ul style="list-style-type: none"> <li>– the company has enough capacity staff and necessary equipment for development of the software.</li> <li>– Office or branch is based in Hanoi</li> <li>– 5 focal staffs at least involve in this project.</li> </ul>
<b>Experience</b>	<p>Essential:</p> <ul style="list-style-type: none"> <li>– Team-leader: At least 15 years of experience on programming and 10 years of experience on developing applications which relate to health.</li> <li>– Team-members: at least 5 years of experience on programming</li> </ul> <p>Desirable:</p> <ul style="list-style-type: none"> <li>– Experience on working with NTP for TB project</li> </ul>
<b>Skills/ Technical skills and knowledge</b>	<p>Essential:</p> <ul style="list-style-type: none"> <li>– Fluence on Java frameworks such as: Java Server Faces, Hibernate, SEAM, Facelets, RichFaces and the technologies such as: JBOSS, XHTML, CSS, Javascript, JQuery</li> <li>– Fluence on dotnet frameworks, AngularJS, Restful API</li> </ul> <p>Desirable:</p> <ul style="list-style-type: none"> <li>– Experience on developing/ maintaining Vitimes and/ or eTB Manager</li> <li>– Fluence on the technologies as below: <ul style="list-style-type: none"> <li>○ JVM 1.6 – The Java Virtual Machine</li> <li>○ JSF 1.1 – The Java Server Faces framework</li> <li>○ Hibernate 3 – Java persistence framework for object/relational mapping. More info at <a href="http://www.hibernate.org">www.hibernate.org</a>;</li> <li>○ SEAM 2.2.1 – Integrates several technologies inside the business layer. More info at <a href="http://www.seamframework.org">www.seamframework.org</a>;</li> <li>○ Facelets – Web template framework for development of user interfaces using JSF;</li> <li>○ RichFaces 3 – UI component framework supporting Ajax capabilities into business applications using JSF. More info at <a href="http://www.jboss.org/richfaces">http://www.jboss.org/richfaces</a>;</li> <li>○ XHTML pages – The page where HTML tags and JSF components are inserted;</li> <li>○ CSS – To control the look and feel of the application;</li> <li>○ Javascript – It's largely used inside the XHTML pages;</li> <li>○ jQuery framework – It's a Javascript framework that makes it easier to manipulate the DOM elements in a HTML page. More info at <a href="http://jquery.com/">http://jquery.com/</a>;</li> <li>○ JBOSS Application Server version 4.2.3.GA</li> <li>○ Dotnet MVC 4</li> <li>○ AngularJS 1.5</li> </ul> </li> </ul>

<b>Language</b>	Essential: English and Vietnamese Desirable:
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The scope of work of this activity required an IT company that had strong experience in not only designing surveillance systems especially system for Vietnam National Tuberculosis Program but also experience on interoperability. Since the module of AEs will be integrated in VITIMES/eTB manager system hence experience with these systems is prefer.

**5. Place of assignment**

Hanoi

**6. Medical clearance**

Not required

**7. Travel**

Not required

**8. Budget**

- The contractor will be responsible for paying taxes, if any.

Those who are interested can submit your most updated CV/profile and application letter indicating post title and vacancy notice # and should be addressed to:

Full proposal with estimation of costs, description of technical team, and supporting documents should be received **on/or [16 June 2021]** and should be addressed to:

Administrative Officer  
World Health Organization  
UN Building, 304 Kim Ma Street,  
Hanoi, Viet Nam

OR  
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