

## GENERAL INFORMATION

**Title:** IT System & Infrastructure Specialist (National Consultant)

**Project Name:** Health Governance Initiative

**Reports to:** Health Governance Project Manager

**Duty Station:** Jakarta

**Expected Places of Travel (if applicable):** N/A

**Duration of Assignment:** 120 working days within 8 months

## REQUIRED DOCUMENT FROM HIRING UNIT

	TERMS OF REFERENCE
	<b>CONFIRMATION OF CATEGORY OF LOCAL CONSULTANT, please select:</b>
	(1) Junior Consultant
	(2) Support Consultant
	(3) Support Specialist
	<b>(4) Senior Specialist</b>
	(5) Expert/ Advisor
	<b>CATEGORY OF INTERNATIONAL CONSULTANT, please select:</b>
	(6) Junior Specialist
	(7) Specialist
	(8) Senior Specialist
X	APPROVED e-requisition

## REQUIRED DOCUMENTATION FROM CONSULTANT

X	Completed P11 / CV with at least 3 (three) referees
X	Copy of education certificate
X	Completed financial proposal
X	Completed technical proposal

**Need for presence of IC consultant in office:**

☐ partial (coordination for program/activity planning, implementation and monitoring)

☐ intermittent

☒ full time/office based (needs justification from the Requesting Unit)

*The consultants will be based in Ministry of Health Office (Jakarta) and its high complexity of deliverables will require close coordination with PRs MoH – Immunization programme.*

**Provision of Support Services:**

Office space: ☒ Yes ☐ No

Equipment (laptop etc): ☒ Yes ☐ No

Secretarial Services ☐ Yes ☒ No

If yes has been checked, indicate here who will be responsible for providing the support services:

**Arry Lesmana Putra**

## I. BACKGROUND

Indonesia has a generally well performing immunization program but there remain important discrepancies within and between regions and according to UNICEF there is a persisting immunization gap of 1.9 M children under immunized<sup>1</sup>. Access to immunization and adequate coverage is a key element of the Universal Health Coverage which Indonesia is committed to attain by 2019. Central to the immunization program is the vaccine supply chain. Assessments of the vaccine Supply Chain Management in Indonesia reveal (among other issues):

- Poor visibility and unreliable stock monitoring (no real time stock monitoring) leading to poor planning, unequal distribution and delivery (e.g. demand-supply mismatch) and reactive management;
- Suboptimal cold chain monitoring leading to wastage;
- Substandard reporting, data flow and quality assurance on data;
- Immunization workforce capacity (distribution, skills set, workload, etc.)

These issues, in turn, cause delayed progress, limited impact (by constrained coverage and prolonged stock out), stalled new vaccine introduction and suboptimal immunization at population level.

Contextual factors negatively impacting the vaccine SCM in Indonesia (and immunization overall) include the decentralization of a complex health system, extreme geography imposing physical and logistical challenges for vaccine supplies and information flow and 'people factors'. The later can be loosely described as including human resources landscape in the immunization program (supply side) and a range of social determinants comprising varying degrees of community awareness and acceptance of immunization (based on level of education, belief systems, agency and socioeconomics).

Although it is playing a critical role, vaccine Supply Chain has received comparatively little investment. Pressed to meet its commitment to Universal Health Coverage by 2019, Indonesia is in urgent need of innovation to improve vaccine supply chain management.

A pilot project was initiated -with the support from UNDP- in two districts, Bogor and South Tangerang in West Java and Banten Provinces, respectively. The pilot project uses the Electronic Vaccine Intelligence Network technology (eVIN) which transformed the vaccine supply chain in India and therefore looks supplies and storage temperature across the vaccine cold chain points. SMILE (eVIN) also helps track storage temperature of vaccines through SIM-enabled temperature loggers attached to the cold chain equipment. At the core of the project is a human resources development component supported by a defined supervision plan and a rigorous training regimen.

The system provides an integrated solution to address widespread inequities in vaccine coverage by supporting state governments in overcoming constraints of infrastructure, monitoring and management information systems and human resources.

As of July 2018, the system has been set up in 54 Puskesmas (Community Health Care Centre) in the two Provinces. The project engages with stakeholders at all levels: Ministry of Health (MoH), Provincial Health Office (PHO) and District Health Office (DHO). Series of trainer training for cold chain handlers and immunization staff have been completed. Trainees equipped with handsets implement SMILE (eVIN) on a daily basis and the system is live since mid-July 2018. Specialized staff recruited by UNDP are constantly monitoring the implementation of the pilot. Cold chain data and vaccine stock (utilization) data is simultaneously updated in the SMILE (eVIN) application and uploaded on a cloud server which can then be viewed by program managers at district, province, and national level through online dashboards.

The general purpose of this ToR is engagement of the IT Infrastructure Specialist that would serve as a technical expert and quality assurance for the contracted company engaged on web portal and mobile application new "SMILE". The specialist needs to have knowledge and experience in migration preparation of technical and functional specifications to Ministry of Health server as well

as extensive knowledge and experience in development, maintenance and administration of similar IT solutions.

The SMILE application is on piloting phase that shall be utilized at the SASS and stored its data in the public cloud located in Jakarta. UNDP Indonesia currently would like to explore more options between on-premise, off-premise or a hybrid approach to keep the data. The infrastructure specialist using his/her expertise to provide advice and oversee the delivery of the preferred solution that meet the needs of the Ministry of Health and UNDP-Indonesia.

Currently, SMILE is working on the enhancement on several systems, such as on the following(s):

- The system using Android Mobile Application for Healthcare Facilitator & Web Application for Back Office in DHO/PHO/MoH and expected to serve 600 Puskesmas in 2020 and 10.000 Puskesmas in 2024;
- Scalable Virtual Data Centre, with their own Network Security, Load Balancing & Application Gateway using 19 VM for Production and 8 VM for Pre-Production;
- Kubernetes cluster which consist of at least 16 different services using various Java or Node JS Application;
- Hadoop Cluster for their big data processing system;
- Cassandra, MariaDB, Mongo DB & Redis for their database system;
- Nexus SMS Gateway to collect and sending IoT temperature logger data and ActiveMQ for queue messaging;
- ELK Stack for Search Engine & Application Logging;
- Application Monitoring System using either Senu, Grafana or Prometheus;
- Other Supporting Application such as Google Map & Fusion Chart.

**Important note:**

*Due to data confidentiality information related to SMILE application, the selected candidate will be required to sign a Non-Disclosure Agreement (NDA) prior starting this role.*

## **II. SCOPE OF WORK, ACTIVITIES, AND DELIVERABLES**

### **Scope of Work**

The general purpose of this ToR is engagement of the technical support that would serve as to:

1. Provide technical design on minimum requirement of infrastructures that will include engineering, cost structures, design, installation, configuration, compliance, disaster recovery and data migration approach;
2. Oversee system & database installation including maintain technical documentation within the existing and preferred infrastructure during migration process and data management provided by the third party or team;
3. Ensure all the content of SMILE website and mobile application are in line with the established standard content, detect portal content's discrepancies, and implement the adequate resolutions;
4. Provide SMILE website and mobile application's administration and maintenance services;
5. Ensure knowledge transfer occurred to MoH and local team, which include problem identification, devising and implementing the solution, as well as document those process; and
6. Performs other duties as assigned by the Technical Specialist of SMILE Project;

### **Expected deliverables/outputs:**

<b>Expected deliverables</b>	<b>Estimated number of working days</b>	<b>Completion deadline</b>	<b>Review and Approvals Required</b>
1. Technical design on infrastructure	20	August 2020	SMILE National Coordinator and Health

			Governance Project Manager
2. Result on the oversee the system and database installation	15	September 2020	SMILE National Coordinator and Health Governance Project Manager
3. Result of the oversee data migration	15	September 2020	SMILE National Coordinator and Health Governance Project Manager
4. First report of knowledge transfer on hardware (infrastructures)	15	December 2020	SMILE National Coordinator and Health Governance Project Manager
5. Final report on knowledge transfer on hardware (infrastructures)	20	January 2021	SMILE National Coordinator and Health Governance Project Manager
6. First report of SMILE website and mobile administration and maintenance services	15	February 2021	SMILE National Coordinator and Health Governance Project Manager
7. Final report of SMILE website and mobile administration and maintenance services	20	March 2021	SMILE National Coordinator and Health Governance Project Manager

### III. WORKING ARRANGEMENTS

#### **Reporting**

The Consultant shall report to the Technical Specialist and Health Governance Project Manager, for any queries and assistance on deliverable based.

#### **Duration of Assignment**

The duration of the assignment is 120 working days within 8 months, renewable subject to availability of funds and daily performance.

**Payment** The consultant will be paid upon submission and acceptance of each deliverable by the authorized personal/personnel which will be appointed upon signing contract.

#### **Travel**

In the event of unforeseen travel, payment of travel costs including tickets, lodging and terminal expenses should be agreed upon, between the respective business unit and the Individual Consultant, prior to travel and will be reimbursed by UNDP.

The fare will always be “most direct, most economical” and any difference in price with the preferred route will be paid for by the expert.

Travel costs shall be reimbursed at actual but not exceeding the quotation from UNDP approved travel agent.

No	Destination	Frequency	Duration/days
1	N/A	-	-

#### IV. REQUIREMENTS FOR EXPERIENCE AND QUALIFICATIONS

**1. Academic Qualification(s):**

- Bachelor Degree in Information Technology, Computer Science, Information System or related field from a recognized institution

**2. Experience(s):**

- Minimum 6 years of combined working experience in engineering and IT operations, preferably with data enterprise, switching, and routing including 2 years of experience within relevant working experience in delivering system design, cloud networking, container, and virtualization technologies experience with firewall in enterprise data centre.
- Experienced as administrator on AWS or Zettagrid or GCP or Azure Cloud or similar as well as having knowledge in container system (i.e. Docker & Kubernetes) are highly preferable;

**3. Competencies and skill**

- Creative problem solving and ability to work in a team with positive attitude;
- Strong communication, presentation and documentation skills;
- Ability and willingness to travel to the field.

**4. Language(s):**

- Strong written and spoken in English

#### V. EVALUATION METHOD AND CRITERIA

Individual consultants will be evaluated based on the following methodologies:

Cumulative analysis

*When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:*

- a) responsive/compliant/acceptable, and*  
*b) Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.*

*\* Technical Criteria weight; 70%*

*\* Financial Criteria weight; 30%*

*Only candidates obtaining a minimum of 70 point would be considered for the Financial Evaluation*

<b>Criteria</b>	<b>Weight</b>	<b>Maximum Point</b>
<u>Technical</u>		100
<b>Criteria A: qualification requirements as per TOR:</b>	70	70
1. Minimum 6 years of combined working experience in engineering and IT operations, preferably with data enterprise, switching, and routing including 2 years of		40

<p>experience within relevant working experience in delivering system design, cloud networking, container, and virtualization technologies experience with firewall in enterprise data centre.</p> <p>2. Experienced as administrator on AWS or ZettaGrid or GCP or Azure Cloud or similar as well as having knowledge in container system (i.e. Docker &amp; Kubernetes) are highly preferable;</p>		30
<p><b>Criteria B: Brief Description of Approach to Assignment (written) – reviewing candidate's portfolio that will show his/her capabilities, competencies and skills in: design technical architecture, administrator in cloud enterprise, knowledgeable in container system</b></p>	30	30
<p>1. Technical architecture portfolio</p>		30