



## RapidSMS Software Programmer

### **TERMS OF REFERENCE**

#### **LOCATION:**

Kampala, Uganda

#### **DURATION:**

3 months, with possibility for extension if project needs warrant

#### **BACKGROUND:**

UNICEF Uganda desires to recruit a short-term Software Programmer experienced in developing on the RapidSMS framework, to support the T4D programming team in a rapid development phase for the Health Facility Based reporting component of UNICEF's mobile Health (mHealth) platform.

During the first half of 2011, the UNICEF Technology for Development (T4D) Unit will be working closely with the UNICEF Health & Nutrition team, as well as the Ministry of Health (MoH) and the World Health Organization (WHO), to begin development of a comprehensive mHealth platform built upon the RapidSMS framework.

The RapidSMS Health Facility Based module is being adapted from a successful RapidSMS pilot project conducted by FIND Diagnostics in Gulu and Kabale Districts this past year, and which will be integrated into the existing UNICEF Uganda mHealth modules currently under development. The data reported via mobile phones will include information on disease outbreaks, malnutrition and essential medicines.

While some segments of the mHealth platform have already been developed and successfully deployed, there is a strong chance that development of this mHealth platform will need to be

significantly accelerated in early 2011, with possible national scale-up within a year, due to a number of funding proposals on the table. There are significant tasks remaining and support needed - the anticipated workload for that sort of scaling is expected to exceed the current availability of the T4D in-house programming team, creating this need for short-term support by an experienced programmer.

**Purpose:**

- Short-term and intensive RapidSMS programming work to support UNICEF’s T4D Unit in development of an enterprise level RapidSMS Health Facility Based Reporting module, to be integrated into larger mHealth platform
  - Implement and adapt software for use based on requirements documents, functional specs and user stories for multiple end-users (MoH, DHT, Health facilities, etc)
  - Produce documentation and automated tests
- Develop generic USSD module for RapidSMS, and integrate this into the RapidSMS Health Facility Based Reporting module.
- Support the MoH in integrating the system with the Health Management Information System (HMIS) software used for District level data: DHIS2

**SCOPE OF WORK:**

Below are the key tasks to be completed:

1. Review and gain technical competence with existing UNICEF and FIND Diagnostics RapidSMS systems relevant to the RapidSMS Health Facility Based Reporting Module.
2. Produce a technical overview and wireframes for revised SMS, USSD and web-based dashboard functionality, taking into account integration with other UNICEF mHealth modules including CVS and “Mother Reminder”, along with a detailed timeframe and assessment of any additional support needed to achieve this (dependent on the magnitude of work required based on feedback from MoH).
3. Develop, test, document and deploy key software modules for the Health Facility Based Reporting Module.

The work required under this contract will be supervised by David McCann, lead UNICEF T4D Programmer, and Sean Blaschke, UNICEF T4D Specialist. While the consultant is expected to offer technical recommendations on all tasks, final technical decisions must be approved by Mr. McCann and Mr. Blaschke.

**EXPECTED/KEY DELIVERABLES:**

1. Technical overview, SMS forms, wire frames and timeframe for completion – with weekly benchmarks - for required SMS and web based dashboard functionality. This must take into account necessary integration with other UNICEF mHealth modules including CVS and “Mother

Reminder". (End of Week 2)

2. Develop, test, document and deploy key software modules for the Health Facility Based Reporting Module. These are expected to change somewhat based on requirement scoping:

- a. Revised builds of Web and SMS based data collection module (End of Month 2)
- b. Revised builds of Feedback module (SMS, email, etc) (End of Month 2)
- c. Management and design of generic USSD module for RapidSMS (End of Month 3)
- d. Integration of data into Uganda MOH DHIS2 database (End of Month 3)
- e. Additional iterations based on user testing (End of Month 3)

3. Additionally, the RapidSMS Software programmer will be responsible for:

- a. Pushing latest software weekly to github when actively developing software;
- b. Weekly check-ins with T4D supervisors (senior programmer and T4D specialist/mHealth focus);
- c. Providing training materials for Health Facility Based Monitoring Module

### **Technical Expertise:**

#### Required:

- Experience with Python, as well as using relational databases
- Experience developing and deploying RapidSMS
- Experience leading scoping, user testing and training for ICT4D related projects
- Capable of deploying and maintaining software remotely on a Linux or UNIX-like server.

#### Highly Recommended:

- Experience working on mHealth applications
- Knowledge of environment in which UNICEF operates, and understanding of the constraints of working in a developing-world environment. This should include experience developing low-bandwidth applications in challenging work environments.
- Ability to align technical goals with UNICEF strategic goals – that always will mean prioritizing UNICEF's mission over any particular technology
- Willing to travel (sometimes on short notice) and develop software in the field

#### Desired:

- Programmatic knowledge of the Ugandan Health Care system, particularly at the Health Facility level
- Experience with USSD
- Experience developing software as part of a distributed team using Git or Subversion, especially in an open-source environment

### **TO APPLY**

**Send letter of interest and CV to [jobst4d@gmail.com](mailto:jobst4d@gmail.com). Additionally, applicants must provide links to finished products, sample code or online repositories, with a clear description of their**

**contributions, to be considered.**

Close of submission is Friday, 22 April, 2011.