Advancing Medical Care and Rehabilitation Education Project

*Since January 2018, Fédération Handicap International is **Handicap International**'s new operating name*

Telerehabilitation Application DEVELOPMENT

| Terms of Reference |

1. Introduction and Background Information

1.1. Fédération Handicap International

Fédération Handicap International (HI) – previously known as Handicap International- is an independent and impartial aid organisation working in situations of poverty and exclusion, conflict and disaster. We work alongside people with disabilities and vulnerable populations, taking action and bearing witness in order to respond to their essential needs, improve their living conditions and promote respect for their dignity and fundamental rights. HI is working in more than 60 countries over the World.

HI has been working in Vietnam for over 25 years, mostly in the fields of health and prevention (mother and child health and road safety), rehabilitation (rehabilitation care for persons with spinal cord injury and brain lesions), education (access to inclusive education for children with disabilities) and livelihoods (access to decent work for people with disabilities).

1.2. Rehabilitation Project

The rehabilitation project, funded by the USAID, started in October 2015 and is expected to last for 8 years (until September 2023). The project's goal is to improve quality of life of persons with brain lesions, especially those with brain stroke, traumatic brain injury, cerebral palsy and/or spina bifida/hydrocephalus, by improving access and quality of rehabilitation services. In order to do so, the project develops 4 main approaches:

- Strengthening of rehabilitation service delivery
- Building Human Resources' capacities and skills.
- Strengthening governance and networking
- Improving awareness among general population and local authorities on home accessibility and independent living

1.3. Telerehabilitation

In the framework of its first objective (service delivery), the project is implementing activities that aim at strengthening discharge procedures of patients from hospital, transition of care from hospital to community-level care and home- or family-based rehabilitation care and follow-up.

In this framework, the projects aims at **developing digital solutions for discharge, transition of care and home/family- based follow-up.** To achieve this goal, the project notably includes **the development of a telerehabilitation application.**

Telerehabilitation is defined as "the remote delivery of rehabilitation services, where distance is a critical factor, by all rehabilitation care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities."

At a project level, **telerehabilitation** services are expected to:

- Tackle the lack of rehab professionals, especially at district and commune level
- Support bringing rehab services down to family and community levels by equipping the hospital based professionals and families with user-friendly communication tools for follow-up, instruction and advice
- Lead to lower costs for the patient – especially those not covered by medical insurance (transportation and living costs during hospital stay)
- Prevent repetitive hospital stays for persons with long-term needs for rehabilitation
- Allow providing support to children that is tailored to the setting at home without having to physically go to the person's home

2. Mission

2.1 Objectives

The objective is to develop tele-rehabilitation software application to be ready for deployment and scale in health-care environments in different parts of the world.

2.2 The scope

The scope is to develop tele-rehabilitation application with three separate modules that simultaneously operate together. Aim is to have a digital environment for therapist and patient/s to interact based on an arranged treatment plan.

Back-end Admin Web App

Back-end Admin Web App is for organisational administrators who manage the therapists and provide the library content to support therapists to create treatment plans for patients. In practices, Back-end Admin Web App should enable the management of all content related to other apps. It should allow bulk uploads of content to be used and be as flexible as possible to support the related apps.

Therapist Web App

Therapist Web App allows therapists to manage the patients and facilitate a treatment plan for them. Therapist Web App allows a therapist to create exercises, questionnaires, and other content for the patient using the readily made content available in a common library managed by Back-end Web app or by creating new content directly based on client needs. The therapists can also monitor the rehabilitation progress of patients and make direct contact via message, voice, and video call. The application should support management patient history and appointments.

Patient Mobile App
Patient Mobile App is designed to assist patients to follow the treatment plan given by the therapist including exercises with pictures and different questionnaires. It also supports patients to be in contact with therapists by message, voice, or video. App also enable appointments and has push-notification functions.

Application and its modules will be used in multiple geographical locations including areas with poor or limited access to internet or used in situations where data is highly expensive. Therefore, offline features and data saving options will be needed, especially with mobile application. The system can be designed to operate through cloud service but should also be made to be ready to be installed into other environments e.g. in situation where patient data needs to be hosted in the country.

2.3 Deliverables

The deliverables shall include the development of the tele-rehabilitation application as guided by business requirement document (BRD) and separate examples of UI. Access to these documents will be shared after expression of interest and signed Non-Disclosure Agreement (NDA).

Company is expected to provide full implementation and delivery of the designed features. Aim is to have minimum loveable product that can be scaled into the full use after the hand-over of the project. Following gives overview of the features and requirements. Detailed list of features and requirements can be found from the BRD but following provides general overview of the features.

Back-end Admin Web App
- Authentication related functions
- Administration of different user levels, language versions etc.
- Content management (including bulk uploads of exercises, creation of categories for documents, images and videos, development of questionnaires etc.)
- Push notifications and call Quota management

Therapist Web App
- Authentication related functions
- Summary dashboard
- Patient/client management
- Activity/treatment planning including creation or modification of exercises, questionnaires etc.
- Appointments and follow-up
- Messenger and video feature
- Multilingual support

Patient Mobile App
- Authentication
- Profile management
- Activity/treatment (receive plans from therapist, questionnaires etc)
- Appointments
- Messenger and video
- Push notifications
- Offline mode and multilanguage support

Development of the above system will require company to consider and deliver following:

a) Design, develop and implement best possible architecture for the system, including front-end and back-end systems, integration of external services and needed offline features.
b) Front end technical stack implementation
    - Develop front end for patient mobile app that has best possible compatibility with different IOS and Android mobiles.
    - Develop front-end for both, Back-end Admin Web and Therapist Web Apps
    - Identify and integrate third party applications that can save costs both in short and long-term
    - Suggestions on how to enable therapist app to be mobile user friendly and how patient mobile app content could also be accessed through web app. Back-end Admin Web App does not require mobile first strategy.

c) Back-end technical stack implementation
    - Set up the system hosting to agreed cloud service
    - Develop best possible, low cost and easy maintenance, back-end system based on proposed and agreed operating system and webserver, using relevant programming language/s, web frameworks and databases.

d) While not, exhaustive list, the following overall requirements for the development system have been identified and should be delivered as part of the service:
    - Highest possible performance considering feature requirements and different user levels
    - Scalability of the system
        - System should be able to respond to changes and adapt to sudden growth peaks in users, while having lower operation costs when used less.
        - Development of new features and language versions and integration of those into system should be easy, low cost with minimal extra effort required.
    - Highest possible security standards and protocols should be used throughout the system including use of different algorithms for situations such as data transfers, data protection and password encryptions.
    - System should be developed to be compatible with different cloud platforms. Added value is consideration of situations where data needs to be store to specific country for legal reasons.
    - Third party integrations should be well designed, documented following set security standards.
    - Systems should be ease of maintenance and repair including quality of code, documentation, availability of expertise, testing and bug fixing
    - Localization of the system should be well integrated including, but not limited to, different language versions, documentation, system installation, security updates etc.
    - Development of the application needs to aim for long life cycle, both from cost and technical perspective
    - Development schedule needs to be designed to enable user testing especially with mobile app and therapist app at earliest possible time.
    - When feasible, and if providing added value, use of open source frameworks and CMS's should be considered
    - Develop documentation for the whole system and code that will make easy transfer of tasks between developers
    -

e) Other issues
    - Selected company needs to commit to finalization, including final quality testing, fixing bugs and final approval
    - Support for the application process and launch of mobile app in the stores.
    - Developed system should comply with GDPR requirements.

2.4 Methodology

The service provider is free to propose methodology for the development of the application. However, use of agile development method is preferred, especially if the service provider can incorporate the approach within the provided business requirements document. Patient mobile and therapist app in long run will have large number of users. Thus, user experience and satisfaction will be high priority to ensure scale. Using development methodology that enables testing and adapting to changes throughout the different application development phases will be prioritized.

2.5 Service provider and HI's responsibilities

Service provider responsibilities:

- Managing the software development team and ensuring competent workforce as proposed in tender
- Inform HI well in advance for any possible delays or changes needed to the technical stack and ensuring that project manager is always at HI disposal if needed
- Attending the follow-up meeting, workshops to discussions with HI when needed
- Submitting the specified deliverables to HI for comments and approval
- Delivering the system and its modules as per overall scope of work
- Organizing and conducting training for administrator
- Support troubleshooting during the piloting and after handing over of the application for the agreed period
- Inform HI for use of sub-contractors and their qualifications

HI will be responsible for the following:

- Liaison with end-users (therapists and patients) and involving them in the process for testing and collecting feedback
- Provide technical feedback on the process, documentation, and deliverables
- Review the application modules and providing feedback to develop and finalize the system
- Ensure access to cloud services and other, related environment that are required to be available under HI name.
- Releasing the payments upon satisfactory delivery

2.6 Institutional arrangements

The service provider will report directly to Martin Jacobs. The provider will continually interact with the HI team throughout the stages of the developing the product to seek approval and confirm development phases.

The provider will share progress report on weekly basis of the task team. Format of reports can be agreed but can include weekly meetings and/or summaries of progress.

2.7 Recommended presentation of submission of proposal

HI highly recommends using the attached technical-application template or using similar format. In both options, technical questions are required to be answered.

Following steps are followed for preparing the offer:
a) Interested company will express interest towards development of application
b) Non-Disclosure Agreement (NDA) will be signed by the company
c) After submitting the NDA, company will receive BRD and access to UI samples
d) Company will prepare the offer using the documents. Further clarification can be requested from HI contact of this ToR.
f) After selections process, HI enters to final negotiations with possible service providers

2.8 Price and schedule of payments

The payment will be an "all inclusive" lump sum for the development of the application and agreed additional elements/services.

The payments schedule will be agreed by both parties upon signature of the service contract.

2.9. Criteria for selecting the service provider

The evaluation criteria will consider following elements:

a) Overall quality of the proposal including proposed architecture and technical stack. These should be done based on business requirement document and examples of UI.
b) Architecture and technical stack will include external review. Focus of the assessment is to compare proposed architecture and technical stack with selected questions related to performance, security etc.
c) Costs: proposal price including running/recurrent or foreseen future development of costs related to localisation and scale. Life-cycle costs will be assessed and ability to provide cost-effective models for maintenance and future development will be an asset.
d) Innovation: offers exceeding the requirements or ability to propose alternative solutions/elements that increase life cycle and minimize long-term term development/maintenance risks for HI
e) References from similar scale projects
f) Proposed team
g) Development methodology
h) Value add elements if any

The selection of the best proposal will be done by using combined scoring method. Architecture and technical stack are not directly included in scoring but will be assessed to be on required and expected level through external review.

2.10 Expected qualifications of the successful service provider

The applicant should be technology company with a proven record of development of similar applications. Companies need to demonstrate having required expertise from proposed different aspects of proposed technology stack and software development methodologies. There needs to be proven record of mobile application development and generally from the development of complex solutions. Company is expected to have attention to details and ability to follow best practices in all development including security aspects of the system.

Following key qualifications are expected from the company:

- The company should have a team of experts that include technology experts and coders for both front- and backend development.
- Team leader should have at least 7 years of relevant technology and system design experience. Project management experience from technology development from health care sector is an asset.
- Ability to provide to provide design and user experience support for the project is an asset.

3. Additional Information

3.1. Working Organization

• The deliverables are to be developed from the distance – there is no field mission (in Vietnam) required
• The deliverables are to be developed in English

3.2. Timeframe

• Application closing date: **August 7th, 2020 (11.59PM, Central Europe Time)**
• Selected company will be confirmed by **August 21st, 2020** and service contract is expected to be signed by **31st of August, 2020**.

3.3. Selection Criteria

Selection of contractor among the bidders will be based on series of criteria, among which (not following an order of importance):

- Activity costs (total budget and fees)
- Past experiences and expertise
- Activity planning and timeline
- Resources to be mobilized and consultant's expertise

Applicants have to comply with USAID's rules and regulations in regard to source and nationality and geographic code 937 (refer to 22 CFR 228.12 for additional information or contact HI for confirmation) – this means, among others, that only companies that are legally organized in the United States, Vietnam, or developing countries other than advanced developing countries (but excluding any country that is prohibited source) will be allowed to apply.

More information and/or application

Please contact/send application (detailed cost estimation, methodology and tentative planning) to:
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