
Terms of Reference

Consultancy for the Development and Implementation of the CARPHA Mobile Application

1. Background

The Caribbean Public Health Agency (CARPHA) is a regional Institution of the Caribbean Community, formerly established on July 4, 2011, through the ratification of an Inter-Governments Agreement (IGA) by Heads of Member States of CARICOM in January 2013. The Agency is the Caribbean's collective response to addressing public health issues, including those related to Communicable and Non-Communicable diseases; mental health, disaster response, injuries and violence and workers' health.

In so doing, CARPHA has subsumed the functions of the previous five Regional Health Institutions (RHI) – The Caribbean Epidemiology Centre (CAREC), the Caribbean Food and Nutrition Institute (CFHI), the Caribbean Health Research Council (CHRC), the Caribbean Regional Drug Testing Laboratory (CRDTL) and the Caribbean Environmental Health Institute (CEHI). The agency began operation in January 2013 with Headquarters in Port of Spain, Trinidad and offices in Saint Lucia and Jamaica. CARPHA'S mission is to provide strategic direction in analysing, defining and responding to public health priorities of Member States to prevent disease, promote health and respond to public health emergencies.

Approved in 2019, the [Organisation of Eastern Caribbean States \(OECS\) Regional Health Project](#) (RHP) is a five (5) year project funded by the World Bank. The project's overall objective is to (i) improve the preparedness capacities of health systems for public health emergencies in the OECS region and (ii) provide a response in the event of eligible crises or emergencies. The OECS RHP is implemented by four CARPHA member states (Dominica,

Grenada, Saint Lucia and Saint Vincent and the Grenadines), CARPHA and the OECS Commission.

The project activities under Component 2 support efforts to strengthen public health preparedness, including surveillance and emergency response through the improvement of national and regional capacities and promotion of cross-border collaboration¹. Component 2 is further segregated into Sub Components 2.1.3 – Develop Info and communication platform for surveillance and management, including GIS surveillance through training and investments in Health Information Systems². This Consultancy is also expected to contribute to the fulfilment of the expected outcome of “Improved Preparedness capacities of health systems for public health emergencies in the OECS region”.

Under the OECS RHP, the health systems, of the member countries are similar, and in some instances, the gaps identified, in terms of the preparedness capacity are overlapping. Coming out of a rapid needs assessment carried out by the WB, in collaboration with PAHO, shortly after the Zika outbreak, it was discovered that there were several inadequacies in the infectious disease surveillance, epidemic preparedness and response; one of those being, the *“lack of interoperability of information systems that hampers analysis and utilisation of information for decision making and disease mitigation measures.”*³

In order to contribute toward an efficient and effective coordinated response to public health emergencies, CARPHA is seeking to engage a Firm in order to implement a comprehensive Mobile Application strategy, develop, implement and market a mobile app.

¹ World Bank IDA Project Appraisal Document – OECS Regional Health Project

² World Bank IDA Project Appraisal Document – OECS Regional Health Project

³ World Bank IDA Project Appraisal Document – OECS Regional Health Project

CARPHA currently has one mobile application published; the **Caribbean Travelers Health Application**, with two others also in development. These are the **CARPHA Guidelines and Resources Mobile Application** and the **“Zap-a-Quito”** mobile game.

There is a priority to surveillance of reported diseases and illnesses, including COVID 19, along with a strong need to use this data to determine the best way to leverage the Agency and its partner’s critical health resources. Some considerations include :

- A blank slate (a pro and a con) of what we want the desired mobile application to have and do
- Focus on ensuring the user experience using the behavioural expert’s insights
- Opportunities to build mobile applications to streamline internal user’s productivity
- Clear application ownership structure and role of IT in mobile development
- Empowered departments and units to identify or create content to be uploaded.
- Opportunities to assess current website services and their usages to determine where it is best to mobilise
- End-user (internal and external) willingness to participate

2. Objective(s) of the Assignment

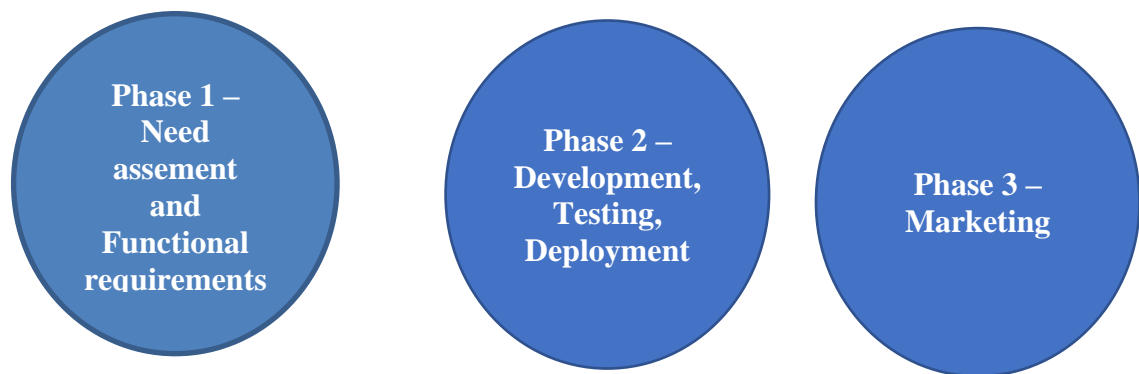
The **objectives** of this Consultancy are to carry out an assessment to gather the functional requirements and design of the CARPHA mobile application and develop and implement the CARPHA mobile application to achieve the following:

- To improve the public health of the Caribbean population by increasing accessibility and visibility of CARPHA’s health information.*

The **purpose** of this Consultancy is to develop a mobile application (app) to increase the accessibility, visibility and adaption of CARPHA Technical Resources by the CARPHA Member States. The application must incorporate all functional areas of CARPHA, including Corporate Services.

Scope of Services, Tasks (Components) and Expected Deliverables

The Assignment will be conducted in three phases: defining use cases and capturing detailed functional requirements, mobile application development and Marketing.



Phase 1 – Needs Assessment and Functional Requirement

The consultant will be required to meet with CARPHA stakeholders to gather the Business requirements, Functional and non-functional requirements, and integration and sustainability strategy for CARPHA mobile applications. The report will include the following.

1. **Business requirements:** Based on the stakeholder's response, specify what the system is required to solve in terms of the objectives of the Agency. Example: What business problem or need will the app solve. What will the application bring (financial benefits,

customer retention, brand awareness, cost optimisation, etc.)? How will the users use the app?

2. **User requirements:** Describe the application goals/objectives the users may reach when using the created application (UseCases). For example, what a user can do: sign up, view certain content, view data using data visualisation tools, and other functions
 - a. Develop user profiles using User personas and stories to provide detailed character descriptions of a particular user's interest in the application.
3. **Functional requirements.** Define a list of actions the application has to perform. In addition, the consulting team must specify how the system responds to various input data, how it behaves in particular situations, and so on.
4. **Non- Functional requirements.** This includes requirements gathering security, performance, compatibility with various devices, multi-language support, etc.

Phase 2 – Development testing and deployment

The Mobile Application should:

- i. Comprise an integrated framework for hosting, managing, accessing and using various CARPHA Technical Resources to support the CARPHA **integrated Surveillance system**.
- ii. The mobile application must include all **technical and functional areas** within CARPHA, and Corporate Services.
- iii. The app should cater for Information Management, Communication, Education and Guidelines for management of infectious and chronic ailments, monitoring and prevention and control of diseases.
- iv. Raise awareness, record trends, build capacity, establish guidelines, and generate and document evidence on public health importance.
- v. **Incorporate and expand the CARPHA Integrated Surveillance strategy**
- vi. Provide a function to drive direct information on related CARPHA training courses and other relevant information;
- vii. Include Administrative area and Backend database (server);

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- viii. Include About information to identify supporting partners;
 - ix. Include feedback / periodic user survey mechanism(s);
 - x. Support offline/limited bandwidth use;
 - xi. Be populated with key existing Guidelines and Resources as agreed in Workplan,
 - xii. Be deployed on all major platforms, including Android and iOS, including the web-based version; and,
 - xiii. Be delivered with guidance/reference material for the administration and maintenance of the app.

Phase 3 – Marketing

The consultant is expected to design, develop and implement a marketing strategy. This includes :

1. Present a detailed marketing plan.
2. Develop a landing page that allows users to learn more about the app on mobile web and desktop using SEO (Search Engine Optimization) to attract new users. The landing page should offer data visualisation of what users can expect if they install the app. The landing page should include links to the app in the App Store and Google Play Store.
3. Implement App Store Optimization (ASO) to improve the app's visibility in the App Store and Google Play Store.
4. Use social media channels to raise awareness of the app. For example, social media to build a community and get feedback from users who wouldn't be incentivised to go to the play store or our websites.
 - a. Discuss and implement content for social media channels, including blog entries, competitions, discussion threads and user-generated content.
5. Develop Key Performance Indicators (KPI) to measure the success of the app marketing strategy.

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- a. Discuss, recommend and implement important KPIs, including but not limited to the number of Active Users, Daily, Weekly and Monthly (Daily active users (DAU), WAU, MAU).
 6. Implement the approved Marketing plan and provide a detailed report of the outcome of the implementation of the plan.

The Expected Deliverables are:

Result 1: Inception Report, including a detailed Workplan, developed and submitted for the approval of the CARPHA team.

- i. Engage in initial briefing and follow-up engagement as required with the relevant CARPHA personnel to discuss the scope of the work to be undertaken, the approach and any other issues pertaining to the Project upon the commencement of the Consultancy.
- ii. Prepare and submit for the Project Manager's approval an Inception Report which includes the definition of the project and use cases, the timelines and methodology for the specific project activities and proposed risk management approaches.
- iii. Engage in an initial briefing with the Project Manager and other relevant staff of CARPHA to discuss the scope of work to be undertaken, the approach and any other issues pertaining to the Project upon the commencement of the Consultancy.
- iv. Discuss and agree on the approach and the methodology for the work to be conducted.
- v. Prepare and submit for the approval of the Project Manager an Inception Report which includes a detailed Workplan with the timelines for the specific project activities and the methodology for the activities
- vi. In the report, the Firm shall describe, e.g. initial findings, including UI Designs, workflow, and Business Process Diagram/definition

Result 2: Interim Progress Report, including details on the proposed activities, completed activities and recommendations, developed and submitted for the approval of the IT Manager.

- i. Design and develop the mobile app, including but not limited to the following suggested features:
 - a. Wireframes and Storyboards, Mock-ups / User Interface (UI) Designs
 - b. Workflow and Business Process Diagram / Definition of the Backend of the Mobile App, based on the wireframes and storyboard provided above, provide backend structures required to support the app, for example, APIs, data diagrams, servers, data integration, and push notification services.
 - c. Thumbnail/ Icon
 - d. Introduction wizard to the app on the first download and open
 - e. Navigation menus and animations
 - f. Consider the creation of a unique user ID to backup notes, favourites/bookmarks etc.
- ii. Integrate the CARPHA website of the upgraded version of the Mobile app. The web front/back end supports the mobile application and has administrative rights to all databases, including the users.
- iii. Prepare and submit for the approval of the Project Manager an Interim Progress Report documenting progress made against the agreed work plan and challenges met and addressed, in accordance with the reporting requirements

Result 3: Draft Final Report, including details on the scope of work completed during the engagement, a summary of achievements and recommendations, developed and submitted for the approval of the IT Manager.

- i. Development of the Beta version of the Mobile app, including but not limited to the following:
 - a. Development and modification of the prototype by the consultant based on review and feedback provided by CARPHA; and
 - b. Produce high-resolution renderings of developed screens, including software units and modules.
- ii. User testing, including but not limited to the following suggested tasks:
 - a. Software release for beta testing;
 - b. Provide a detailed user test script with the initial test result; and
 - c. Modification of the prototype by the consultant based on review and feedback provided
- iii. Prepare and submit for the approval of the Project Manager an Interim Progress Report documenting progress made against the agreed work plan and challenges met and addressed, in accordance with the reporting requirements.
- iv. Present a detailed marketing plan.

Result 4: Final Report, including details on the scope of work completed during the time of engagement, a summary of achievements and recommendations, incorporating comments from the engagement of all stakeholders

- i. Submit the app to the relevant app stores for Android and iOS, and support the process until accepted by the app stores.
- ii. Provide to the CARPHA team:
 - a. Guidance sessions and reference documentation to support administration, basic troubleshooting and maintenance;
 - b. Application technical documentation (source code, running code, read-me file, host server login credentials, bugs and issues documentation, etc.) and application design documentation (wireframes, style guide, design elements, etc.);
 - c. Any other relevant information or material related to the administration, deployment and maintenance of the mobile app and website, including an indicative description of the expected timelines and costs for predicted maintenance/update of the app's functionality for the following 12 months.
- iii. Implement the approved Marketing plan and provide a detailed report of the outcome of the implementation of the plan.

3. Team Composition & Qualification Requirements for the Key Experts:

(A) Key Expert – Project Lead

Academic Qualifications

- I. Bachelor's degree in Computer Science, Software Engineering, Mathematics or Computer Information Systems.

Technical Expertise:

- i. Working knowledge of two or more programming languages, preferably in-demand ones such as SQL, Java, JavaScript, C# or C++, Python, ZODB object database, PHP, Ruby on Rails, or iOS.

Specific Experience:

- i. Minimum of 3-5 years of experience in the use of programming language, including:
 - o An understanding of principles of secure, stable software design.
 - o An understanding of the software development process and lifecycle, including the design-develop-test-release-maintain cycle and long-term lifecycle support and maintenance.
- ii. Exposure to and understanding development methodology (Agile, Scrum) and development platforms or environments.

General Experience:

- I. Demonstrated experience working in an analytical environment
- II. Proven organisational, multi-tasking, and problem-solving skills.

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- III. Proven organisational, project management, multi-tasking, and problem-solving skills.
 - IV. Demonstrated experience with various computer systems
 - V. Demonstrated experience in mobile application development
 - VI. Familiarity with the public health Environment
 - VII. Demonstrated experience leading similar projects

Languages

- I. Excellent knowledge of English – written and spoken

IT Skills

- I. Ability to effectively use a computer and utilise software programmes such as Microsoft Office Word, Excel, PowerPoint, Outlook

Other Requirements

- I. Ability to work with the organisation's challenging expectations, including addressing urgent requests.
- II. Ability to work as a member of a team with good interpersonal communication skills.
- III. Familiarity with the CARPHA's mandate and activities in the Caribbean Region and with CARPHA Member States.
- IV. Experience in working in health care database shall be considered an advantage

(B) Team Member – Application Developer / Programmer

Academic Qualifications

- I. A Bachelor's degree in Computer Science or related field. Working knowledge of programming languages such as HTML, Java, C++ and PHP.

Technical Expertise:

- I. Experience in application and software development.
- II. Knowledge of software design and programming principles.
- III. Knowledge of Laboratory Information management Systems and Health Information systems.
- IV. Experience in project management.

General Experience:

- i. Experience in working in health care database shall be considered an advantage
- ii. Ability to use programming language
 - a. Understanding of principles of secure, stable software design.
- iii. Understanding the software development process and lifecycle, including the design-develop-test-release-maintain cycle and long-term lifecycle support and maintenance.
- iv. Familiarity with the Open Source Environment
- v. Knowledge of various computer systems

Languages:

- i. Excellent knowledge of English – written and spoken

IT Skills:

- i. Knowledge of two or more programming languages, preferably in-demand ones such as SQL, Java, JavaScript, C# or C++, Python, ZODB object database, PHP, Ruby on Rails, or iOS.

Other requirements:

- i. Excellent written and interpersonal communication with meticulous attention to detail.

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- ii. Excellent organisational, project management, multi-tasking and problem-solving skills

4. Reporting Requirements and Time Schedule for Deliverables

- I. The intended start date is July 2025 for nine (9) months.
- II. The Assignment will be carried out under the direct supervision of the Project Manager at CARPHA, who will be responsible for approving all Reports of the Firm.
- III. Reports will be submitted electronically to the IT Manager at CARPHA.

Table 1 Reporting Schedule and Deliverables		
Name of Report	Deliverable	Timeline
Inception Report	<ul style="list-style-type: none">I. Report will be no more than 12 pages and will include summaries of meetings with CARPHA and other relevant staffII. Report will also include a detailed work plan with the timelines for the specific project activities and the methodology for the activities.	Two weeks from the start of the contract.
Interim Progress Report	<ul style="list-style-type: none">I. In the Report, describe progress made with the execution of the scope of works, challenges encountered, and action to be taken to address challenges, as well as a summary of the data/information gathered and preliminary findings.II. The Report will be no more than 12 pages	Four weeks after the Inception Report
Draft Final Report	<ul style="list-style-type: none">I. In the Report, describe progress made with the execution of the scope of work, challenges encountered, and action taken to address challenges.	One month before the end of the period of implementation

Table 1 Reporting Schedule and Deliverables		
Name of Report	Deliverable	Timeline
	II. The Report will be no more than 12 pages and include Annexes. III. Incorporate the Client's comments on the Interim Progress Report, including on the updated versions of the Manuals, into the Draft Final Report	
Final Report	I. Same specifications as the Draft Final Report. II. Incorporate the Client's comments on the Draft Final Report	Seven days after receipt of comments on the draft final report

5. Client's Input and Counterpart Personnel

- i. Services, facilities, and property to be made available to the Firm by the Client include:
 - a. Access to the server (remote)
 - b. No office accommodation will be provided by the Client.
 - c. The Firm shall be required to provide their personal computers (e.g. laptop or tablet) and Internet connectivity for use during this project
- ii. Professional and support counterpart personnel to be assigned by the Client to the Firm's team: None
