THE UNIVERSITY OF THE WEST INDIES

ST. AUGUSTINE, TRINIDAD & TOBAGO, WEST INDIES

FACULTY OF ENGINEERING

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

CARIBBEAN ICT RESEARCH PROGRAMME

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CALL FOR PROPOSALS

CARIBBEAN INNOVATORS CHALLENGE: MOBILE APPLICATIONS FOR DEVELOPMENT

US$19,000.00 IN PRIZE AWARDS TO WINNER!!!!!!!

The Caribbean ICT Research Programme of The University of the West Indies, St. Augustine, Trinidad & Tobago**,** is inviting proposals for *"The Caribbean Innovators Challenge: Mobile Applications for Development."* This competition initiative, funded by the **International Development Research Centre (IDRC)**, is designed to contribute to the e-economy and e-education pillars of the Connectivity and Equity in the Americas (CEA) programme.

The extensive mobile penetration among the Caribbean poor, the tremendous versatility of mobile applications and the relatively low-cost as well as rapid deployment of mobile applications and services all make a compelling case for mobile innovation. Yet there is little in the region by way of related innovation centres, case studies and documentation of supporting methodologies.

The Caribbean Innovators Challenge: Mobile Applications for Development offers an ideal incubator model for capacity-building to Caribbean Tertiary Level Institutions (TLIs) and their young academics involved in software development. It is designed to stimulate development-focused mobile innovation within Caribbean TLIs and provide a framework to contemplate, demonstrate, document and assess such innovation according to relevance, impact and sustainability-based metrics.

Competitors will therefore be required to:

- Propose **a needs-based, mobile application for an identified community of low income earners in the Caribbean**
- Indicate how the activities and / or outputs of the competition will be used in the teaching programme at the competitor's TLI.

Competition Eligibility

The Competitor must:

I) Be a software developer involved in teaching and/or innovation at a Tertiary Level Institution in the Caribbean. Applicants who are academics, research or project students, academic support staff such as teaching and research assistants all qualify

AND

II) Be 35 years of age or younger on November 1st 2011.

Competition Structure

The competition is organized in **two** successive phases:

Phase 1 will require competitors to:

I. **Submit a 10 page proposal for the development and deployment of a mobile application that can demonstrably impact the livelihoods of poor communities in the Caribbean.** *(See Appendix A for specifications)*

II. **Create a 5 min video short on the proposed mobile application and provide the appropriate URL** using a web service such as www.youtube.com

Judging criteria of the submitted proposal will relate strongly to **relevance, potential for impact**, **sustainability**, **applied metrics** and **originality**. Critical reflective questions for phase 1 are provided in *Appendix B.*

Deadline for the submission of proposals for phase 1 is June 15th 2010.

Phase 2:

The selected winners of Phase 1 will have 6 months from September 15th 2010 to March 15th 2011 to develop and deploy, for demonstrative purposes, the mobile applications and will be required to:

I. **Submit a 25 page final report on the development and deployment of the mobile application** *(See Appendix C for specifications)*
II. **Create a 7 minute video that convincingly demonstrates the operation of the mobile application and provide the appropriate URL** using a web service such as www.youtube.com

Judging criteria for the final report will include: **relevance**, **potential for impact**, **sustainability**, **metrics proposed by author to measure progress against strategic goals**, **originality**, **demonstrated fitness for purpose** and **structured methodology**.

Deadline for submission of final report and video for Phase 2 is March 15th 2011.

Competition Announcements & Awards

(Phase 1)

Announcement of **3 winners of phase 1** will take place on **August 30th 2010** by the organizing committee.

Winners of phase 1 will each receive an award of **$3,000 US dollars** to be used towards the development and deployment of their proposed mobile application for demonstrative purposes. They will be assigned Mentors who are Alumni of the Massachusetts Institute of Technology and will be expected to proceed to phase 2 of the competition.

Winners of phase 1 will be expected to submit the video source files. Videos of the winning proposals from Phase 1 may be presented, citing authorship, by the organizing committee at the Caribbean Telecommunications Union Roadshow 2010. These videos will also be posted on the Competition's website with authorship cited.

(Phase 2)

Announcement of the overall (Phase 2) **Winner of the Caribbean Innovators Challenge: Mobile Application for Development** will take place on **April 15th 2011** by the organizing committee. The prize awards for the winner are as follows:

US $2,000	Further development of the mobile application
US $5,000	Further deployment of the mobile application
US $3,000	Attendance at a Regional Conference to present
US $6,000	Travel, accommodation & administration costs to visit MIT's Media Lab Entrepreneurship Programme
US $16,000	**TOTAL Phase 2 PRIZE MONEY**

An award of **$2,000 US dollars** will ALSO be granted to the Mentor of the winning project.

Competition Organization

All interested Competitors and Participating Tertiary Level Institutions will be required to register and submit their proposals online at the Competition website: http://www.edu.tt/cirp/cic.

A media package will be available to the Competitor upon registration. All Registered Competitors will gain access to competition resources, feeds and updates during the length of the competition.

Registration and participation in this competition is **free of charge**.

Appendix A: Proposal Structure for Phase I

The proposal, which is limited to a maximum of 10 pages, for development and deployment of a mobile application is expected to include:

Title Page [1 page]

This first page of the proposal should document:

1. The Title of the proposal;
2. The Software Developer's name;
3. The Participating Institution's name and address.

Included on this page should be an abstract containing no more than 150 words.

Objectives [1 page]

This section should detail the objectives of this proposal which must be focused on the general theme of the Caribbean Innovators Challenge: Mobile Applications for Development, developing a needs-based, pro-poor mobile application for an identified community.

Rationale [1 page]

This section is expected to explain, using fundamental reasons, the selection of a mobile solution that meets the competition's theme. This section should identify the needs of a low-income community and document the contemplation of ideas that must satisfy these needs to realise expected benefits.

In this section, the contestants are expected to:

- Select a low-income community based on the analysis of existing and new data
- Identify the information and communication needs of this community
- Propose a mobile application intervention that meets the above needs
- Suggest the expected benefits of the mobile application to the identified community
- Identify how the activities or outputs of the proposed application development could be incorporated into the teaching and / or research at the candidate's TLI as a means of stimulating further development-focussed mobile innovation in the Caribbean.

Proposed System [4 pages]

System Concept

This section should describe the concept, in terms of its scope and also identify all systems, hardware or software that should be defined as outside the scope of the mobile application development.

Draft Requirements Analysis

This section should document the analysis of user requirements of community members in order to define a draft version of requirements specifications. These should be documented using applicable requirements specification processes, for example those given in IEEE Recommended Practice for Software Requirements Specifications, IEEE Std. 830-1988.

This section should provide detailed information necessary to proceed to the next phase that focuses on designing the mobile application.

Design

This section should report on the use of requirements specifications, in the previous section, to transform the user requirements into a high-level view, functional design of the mobile application. It should include a description of the process used to develop a structured design as well as the input data, output data and processes that transform input data to output data.

This design is required to show the key functionalities of the mobile application using at least one static and at least one dynamic design model. Static models show the structural aspect, which defines the modules or sub-systems that constitute the system. Examples of these include Block Diagrams, Data Flow Diagrams, Use Case Diagrams and Class Diagrams. Dynamic models show the responses of a system to certain events or actions. Examples of these include Flow Charts, Activity Diagrams, State Machine Diagrams and Collaboration Diagrams.

This section leads the contestant to visually represent the system so that it can be easily explained to an audience of non-software engineers or developers to facilitate a thorough understanding of the operation of the mobile application.

Schedule [1 page]

This section should document an initial project plan for the development and deployment of the mobile solution. It should define required resources and activities for development and deployment of the mobile application.

Budget [1 page]

This section should detail costs associated with all elements of development and deployment of the mobile application.

Bibliography and References [1 page]

This section should include all resources reviewed and used while executing research activities for this proposal.

Appendix B: Judging Criteria

Interested Participants should clearly identify their selected community, provide a detailed description as to its size, relevant sector where applicable and the anticipated short, medium and long term impacts of the mobile application on its target group.

Reflective questions for the selection of the target community and proposal development:

a) On what basis did you select this community?
b) How does your proposed mobile application expect to meet their needs?
c) How is the proposed innovation relevant to low-income earners and the Caribbean economy?
d) What are the original aspects of your proposal?
e) How does the proposal add value to this community and the region?
f) How do you propose to measure the value of this mobile innovation to the individual and the impact to the country as a whole?
g) What are the critical paths and aspects of the tools, rules and discipline necessary to make and drive this innovation as a software developer?
h) What are the key requirements for its sustainability?
i) How will this project be utilized in your TLI to stimulate further development-focused mobile innovation?

Appendix C: Final Report Structure for Phase II

The final report, which is limited to a maximum of 25 pages, for development and deployment of a mobile application is expected to include:

Title Page [1 page]
This first page of the proposal should document:

1. the title of the proposal;
2. software developer's name;
3. participating institution's name and address.

Included on this page should be an abstract containing no more than 300 words.

Objectives [1 page]
This section should detail the objectives of this proposal which must be focused on the general theme of the Caribbean Innovators Challenge: Mobile Applications for Development, developing a needs-based, pro-poor mobile application for an identified community.

Initiation [2 pages]
This section should describe a strategic means of identifying the needs of a community, as well as contemplating ideas that must satisfy these needs to realise expected benefits.

In this section, the contestants are expected to:

- Select a low-income community based on the analysis of existing and new data
- Identify the information and communication needs of this community
- Comment on the community's perceptions of the mobile phone, as it relates but is not limited to:
    - Ease of use
    - Usefulness
    - Affordability
- Propose a mobile application intervention that meets the above needs
- Suggest the expected benefits of the mobile application to the identified community

System Concept [1 page]
This section should describe the concept, in terms of its scope and also identify all systems, hardware or software that should be defined as outside the scope of the mobile application development.

Planning [3 pages]
This section should document a project plan for the development and deployment of the mobile solution using defined system concept. It should define required resources and activities for development and deployment of the mobile application. Also, this section should detail costs associated with all elements of development and deployment of the mobile application.

This section should outline activities, which should be representative of phases of software development life cycle.

Requirements Analysis [3 pages]
This section should document the analysis of user requirements in order to define detailed requirements specifications. These should be documented using applicable requirements specification processes, for example those given in IEEE Recommended Practice for Software Requirements Specifications, IEEE Std. 830-1988.

This section should provide detailed information necessary to proceed to the next phase that focuses on designing the mobile application.

Design [3 pages]

This section should report on the use of requirements specifications, in the previous section, to transform the user requirements into a detailed design of the mobile application. It should include a description of the process used to develop a structured design as well as the input data, output data and processes that transform input data to output data.

This design is required to show all functionalities of the mobile application using static and dynamic design models. Static models show the structural aspect, which defines the modules or sub-systems that constitute the system. Examples of these include Block Diagrams, Data Flow Diagrams, Use Case Diagrams and Class Diagrams. Dynamic models show the responses of a system to certain events or actions. Examples of these include Flow Charts, Activity Diagrams, State Machine Diagrams and Collaboration Diagrams.

This section leads the contestant to visually represent the system so that it can be easily explained to an audience of non-software engineers or developers, while facilitating a thorough understanding of the operation of the mobile application.

Implementation and Testing [5 pages]

This section should report on the implementation activities which should include, if relevant to the application, selection of:

- software development tools for mobile applications
- hardware and/or software requirements of the mobile phone
- mobile communication services, such as SMS, MMS, GRPS/EDGE, etc.

Also, it should describe the testing plan in terms of:

- milestones at which testing is executed
- test cases, and possible solutions for known faults
- reports on any failures, for which the faults were identified at the time of submission

It should document the results of test cases and describe modifications to design and code that were necessary to correct the fault.

At the end of the activities in this section, a release version of the mobile application should be made available to identified community. The plan for dissemination of application and related items is documented in the next section.

Delivery [2 pages]

This section should state documentation that will be provided with the mobile application. This section expected to describe the contents of each document and its purpose to the different users, which includes administrators and mobile end users. Also it should include a plan to disseminate this information to users of the system.

Maintenance [2 pages]

This section should document a planned process to modify the mobile application after delivery for the reasons of correcting faults or improving performance, if the need should arise when deployed to the community.

Work Plan [1 page]

for teaching should demonstrate:

- Learning Outcomes
- Activity schedule
- Assessment scheme

Discussion [1 page]

This section should document observations, an assessment of development and deployment activities and results, and recommendations for improving this mobile application. It should also identify how the activities or outputs of the proposed application development could be incorporated into the teaching and / or research at the candidate's TLI as a means of stimulating further development-focussed mobile innovation in the Caribbean.

Conclusion [1 page]

This section is expected to state, in terms of measurable indicators, the success and shortcomings of the mobile application in satisfying the requirements of the theme of this competition.

Appendix D: Intellectual Property Agreement

In general, the use and modification of the software applications submitted by the contestants of the **Caribbean Innovators Challenge: Mobile Applications for Development** are guided by Open Source Definitions (OSD) and GNU General Public License (GPL) used in licensing free and open source software.

Phase I

The contestants in Phase I will submit Mobile Application Development Proposals to the Committee of the **Caribbean Innovators Challenge: Mobile Applications for Development**. In submitting these proposals to the Committee, the contestants will:

1. Agree to submit proposals that have not been selected as the winners of past competitions

2. Explicitly cite and acknowledge the use of ideas, which do not belong to contestants, in the development of proposals

3. Grant the Organizing Committee of the **Caribbean Innovators Challenge: Mobile Applications for Development** rights to use, modify, add to and present the proposal using any media, while properly citing the source.

Phase II

The three selected Phase I finalists who proceed to Phase II will submit Mobile Applications and the associated source code to the Organizing Committee and will:

1. Ensure that their submissions have not been selected as the winners of past competitions;

2. Explicitly cite and acknowledge the use of ideas, source code and software applications, which do not belong to the finalists, in the development of the software applications ;

3. Acquire the rights to use, modify and add to source code and software applications, which do not belong to the finalists and are used in the development of software applications;

4. Ensure that the source code and the associated software application adhere to open source definitions and, on this basis allow

    - Free redistribution of the software application, inclusive of the source code;

    - Creation of derivative works and modifications, which must be allowed to be freely distributed, giving credit to author(s);

5. Grant the Committee and the funding agency, IDRC, rights to present the source code, software application and accompanying documentation using any media, while properly citing the source.

6. Provide no warranty as to performance of the software application.