

Assistive and Accessible Mobile Applications Call for Proposals

Through a grant from the US Department of Education, the Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC) seeks to enhance the use and usability of wireless technologies for people of all ages and abilities. Included in this effort is the RERC's mobile applications development project, the "App Factory".

The Wireless RERC invites experienced organizations or individual developers based in the U.S. to submit proposals for financial support to develop assistive and/or accessibility apps for mobile platforms (e.g., Android, Blackberry 10, iOS, Windows Phone). An outline for these brief proposals is provided at the end of this announcement. Developers may also request partial funding for apps that already enjoy partial support from other sources, or for adaptation of existing apps to additional platforms. No funding is available for indirect costs or for hardware development.

The Wireless RERC's annual app development budget is approximately \$90K. Anticipating that app development costs can vary from as low as \$5K to over \$50K, the App Factory plans to support the development of at least 4 new apps per grant year (from October 1 through September 30).

Representative end users selected from the RERC's Consumer Advisory Network (our nationwide network of consumers with disabilities) may be asked to test the app prior to release. Developers will be expected to address reasonable usability issues identified through this testing prior to release. (Please see a list of **Accessibility Guidelines** in this document). The App Factory will then release and promote the app as a product of the Wireless RERC, with acknowledgement of the original app developer. The RERC will reimburse the developer for the approved amount.

Proposals will be evaluated based on the following selection criteria:

1) The app addresses an important accessibility or assistive technology need. Proposals should clearly define the functional limitations, ages and other pertinent demographic characteristics of intended users of the app. Apps which employ near-field communication (NFC) and other machine-to-machine (M2M) interaction are welcome, as well as those involving direct human interface. Judgment of importance of the app will be based on size of potential user population and degree of impact on that population (apps intended for use by a small population may be judged important if the impact is high). Priority will be given to underserved populations with respect to access and effective use of wireless technology, such as those with motor/dexterity impairment, deaf-blind individuals (including those who are both hard of hearing and low-vision), and individuals with cognitive impairment, e.g.:

- enabling people with memory limitations to record audio notes to themselves while on the go, then compile them into a printed to-do list when they get home

- providing audio word/phrase prediction to help people with language limitations complete spoken sentences.
- *[additional opportunities per Challenge.gov, SUN/CAN input]*

2) The app is unlikely to be developed in the commercial marketplace. Because the market is often small and less profitable for most of the apps people with disabilities need, priority will be given to these unrealized opportunities for assistive or accessibility apps. Other factors that will be considered include timeliness (i.e., addressing a current need) and anticipated obsolescence (i.e., will the need be diminished by other or emerging technologies?).

3) The app is technically feasible and the technical capacity required for development is readily demonstrable by the developer. The developer must demonstrate the ability to successfully develop the app with available technology, expertise and resources. Issues of timeliness, cost, and return on investment in meeting the stated consumer need will be considered in judging the availability of necessary technical capacity.

4) The projected lifetime of the app justifies the investment. Proposals must include a budget and development timetable and specific milestones. Anticipated obsolescence, and issues of sustainability, maintenance, and support from industry or user groups will also be considered in gauging the potential benefits of the app.

5) The app complements and does not duplicate other apps in the marketplace or under development. Priority will be given to apps that address unmet needs, i.e., no existing app effectively addresses the need. Proposals must include a review of similar apps currently available and a description of how the proposed app is unique from these. Selection of new apps for development will also take into consideration the fit with other development efforts, including equitable attention to diverse consumer needs by the Wireless RERC.

Proposals addressing the above criteria should be submitted to the App Factory Directors, Jim Mueller at jlminc1@verizon.net, and Ed Price at ed.price@gatech.edu. All submitted proposals will be held in confidence. In addition to the selection criteria noted above, the RERC's App Council (a panel of external experts in the technology and disability fields) will review the app proposal to confirm that app functionality is clearly specified, timelines for development, testing and deployment are acceptable, and the budget is reasonable given the scope and complexity of the app.

To assure accessibility to all reviewers, proposals must be submitted in .doc or .html format.

2013-14 Timeline

September 19, 2013	Release of Last Call for Proposals
October 8, 2013	Submission of proposals for funding
October 15, 2013	Selection of successful proposals
May 10, 2014	Completion of user testing; usability issues identified (if any)
August 15, 2014	Delivery of final app

Assistive and Accessible Mobile Applications Suggested Proposal Outline

Date submitted

Developer

Name
Mailing address
Phone
Email
Website

Proposed Application

Purpose (documented clinical/therapeutic need)
Intended users
Operating system(s)
Function(s) [may include storyboards, screenshots, etc.]
Review of existing solutions (Contrast with similar or competing apps currently available)
Clinical/therapeutic collaboration (if appropriate)
Technical capability (resumes, especially app development experience)

Budget

Required hardware and/or software acquisition
Payment schedule

Timetable

Development milestones
Lifetime
Plan for sustaining the app/service (app charges/subscriptions, maintenance/support needed)

Accessibility Guidelines

To ensure that apps developed under this project are usable for the intended population, apps will be tested for usability by the Wireless RERC's Consumer Advisory Network. Developers will be expected to address reasonable issues identified in user testing.

Awareness of accessibility guidelines can help minimize these issues:

General mobile accessibility guidelines:

Accessible Mobile Experiences

<http://www.slideshare.net/luckykat/accessible-mobile-experiences-ozewai-2011-10451872>

Shared Web Experiences: Barriers Common to Mobile Device Users and People with Disabilities

<http://www.w3.org/WAI/mobile/experiences>

User experience checklist for touch and Nokia user experience checklist for keypad by Nokia (Though this site references the Symbian operating system, it offers practical guidelines for any platform)

http://www.developer.nokia.com/Develop/Featured_Technologies/Symbian_C++/Documentation/Usability.xhtml

Platform-specific guidelines:

Android "Designing for Accessibility" guide

http://eyes-free.googlecode.com/svn/trunk/documentation/android_access/developers.htmlAndroid

Android Developers Accessibility Guide

<http://developer.android.com/guide/topics/ui/accessibility/index.html>

Blackberry best practices for designing accessible applications

http://docs.blackberry.com/en/developers/deliverables/17964/BlackBerry_Smartphones-UI_Guidelines-T893501-980426-0721013746-001-6.0-US.pdf

Accessibility programming guide for iOS

http://developer.apple.com/library/ios/#documentation/UserExperience/Conceptual/iPhoneAccessibility/Accessibility_on_iPhone/Accessibility_on_iPhone.html

Design guidelines for Windows Mobile

<http://msdn.microsoft.com/en-us/library/bb158602.aspx>

User Experience Design Guidelines for Windows Phone

<http://msdn.microsoft.com/en-us/library/hh202915%28v=vs.92%29.aspx>