

Expression of Interest / Position Paper

for the W3C/OpenAjax Workshop on Mobile Ajax, 28 September 2007, in Mountain View

PavingWays, represented by Rocco Georgi, is a project doing mostly research work in the field of Ajax on mobile and other constrained devices. We run a well received blog at <http://www.pavingways.com>, which is also listed in the W3C Planet Mobile aggregator.

Rocco has been speaking about topic of Mobile Ajax at several conferences, such as XTech 06, 07 and the XML 06 conference. The next conference appearance will be at the Mobile Web Americas in Orlando, October 2007. We also have done workshop presentations in companies, such as Vodafone RnD in Germany.

Together with Ajit Jaokar and Brian Rieger, Rocco created the Mobile Ajax FAQ, maintained at horizonchannel.com. This resulted in many responses from the community and therefore showed the importance of the topic and the diversity of views and approaches that are out there concerning Ajax on mobile devices.

Since the very beginnings of looking into web development for mobile devices, PavingWays has realized that there is a much bigger diversity in browser capabilities for devices such as mobile phones or hand held and stationary video gaming consoles than there is on the desktop. This accounts not only for basics, such as XHTML and CSS support, but especially for JavaScript and XHR (XMLHttpRequest) support.

We have always been looking at developer needs and at what can be achieved using currently available browser capabilities, resulting in the conclusion that developers usually want to use a library for Ajax development and that there is no such thing out there that works on the majority of available mobile browsers that are supporting Ajax. Many existing Ajax libraries rely on JavaScript functionality that cannot be found in many of the constrained browsers, also there is usually a functional and size overhead.

We think that Ajax on mobile and other constrained devices and browsers has different use cases

than on the desktop. For example drag-and-drop functions usually only make sense on a device that has either a mouse-like pointing device or other means of clicking and dragging elements at the same time available. This is not the case in the majority of mobile browsers out there.

Therefore we decided to create our own library, which is focused especially on mobile browsers and constrained browsers in general, resulting in the Frost Ajax library.

The Frost Ajax library is a tool for Ajax development on constrained browsers, such as those on mobile phones or gaming consoles. It is intended to abstract the use of either the XMLHttpRequest object (XHR) or an equivalent ActiveX control and therefore make Ajax development on mobile phones or other constrained devices easier and faster.

The goal with Frost is to provide the community with a library that can help to implement Mobile Ajax applications and Mobile Widgets. While the main focus is mobile devices, Frost targets all constrained browsers, like those that can be found on video game consoles (Nintendo Wii TM, Sony PlayStation 3 TM etc.) or set-top boxes. Frost is free and licensed under the terms of the MIT license.

Frost follows a very, very minimalist approach. The library is aimed at the very lowest common denominator in constrained browsers, so you can use Ajax even on browsers that do support Ajax, even if the level of Ajax support in those browsers is very rudimentary (yes this means IE Mobile 2003).

Our goal is to limit not only functionality, but also the size of the downloadable file in order to adapt not only to browser-, but also to bandwidth constraints. This is true at least for the core library which can be extended by users and interested developers.

To reach this goal, Frost consists of 3 main components:

1. a test area to collect available support for Ajax and related technologies in a variety of browsers
2. a browser support chart and database created out of the collected data
3. an adaptively outputted JavaScript file to be included in web applications (providing functionality depending on the recognized browser)

There is a core library available to be included in mobile web applications, providing the

user/developer with the basic functions to do Ajax. This encompasses calling a remote URL and displaying the result of this URL call in a container on the currently shown page. Also a big focus on Frost was laid on debugging support, which is simply not available in most mobile browsers.

Extensions to the Frost library can be submitted by the community. Currently the community pages at pavingways.com is being built. This newly created area will enable any registered user to create and add his own extensions to the Frost library. All user contributions consist of the necessary JavaScript code and a test page to test browser compatibility with this extension. To limit the necessary testing the JavaScript code of the extension can be checked against the core library's compatibility database and it can therefore be decided if the extension is compatible with a browser or not.

Users of the Frost library will be able to add other users' extensions to their library setup and therefore create their own set of available functionalities, which again results in smaller library sizes and faster download times.

Results of browser tests in the Frost project will be shared with other projects, such as the WURFL project and the W3C's recording harness.

In the workshop we would like to introduce the Frost library to the audience/community and collect feedback and opinions about the underlying approach and the library in general. A presentation during the workshop can be held and could contain an introduction, some background insights about the library and the community area and would also contain a big part of demo and example presentations, since this really shows the power and possibilities of the library.

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