Play video without plug-ins? Mozilla-OTOY codec turns tide

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(Phys.org) —Mozilla and Los Angeles-based graphics software company OTOY have announced ORBX.js, a downloadable HD codec written in JavaScript and WebGL, that will let major browsers such as Firefox, IE10, Chrome, Safari, and Opera run video and rendering apps like Autodesk without the need for plug-ins. Is there a day to come when end users can access high definition content that is format-agnostic? In tech jargon, it is tempting for company promoters to exaggerate an announcement as "game-changing," but the May 3 news on the codec could be a game changer in a number of ways. PRBX.js will deliver movies and "cloud" gaming in a browser window using web standard-based technologies. It lets developers stream desktop apps for Windows,

Linux, and Mac OS X on to any browser including mobile browsers. As important, there will be no need for plug-ins such as Flash, Silverlight, or QuickTime for running videos in the browser.

Fast JavaScript and WebGL are the key ingredients in the new codec. (OTOY defines ORBX.js as a JavaScript library that enables Windows, Linux or Mac OSX apps to be virtualized in the cloud and streamed to any HTML5-enabled browser, including those running on mobile devices.)

The major HTML5 browsers, Chrome, Safari, Firefox, IE10 and Opera, will do, as long as there is WebGL technology to leverage the full decoding speed of the codec.

The absence of fuss and bother with plug-ins is an obvious win. The announcement is also viewed as a way to avoid the H.264 video-compression standard. Another plus is watermarking, where DRM in the browser becomes unnecessary, and video streams and apps are watermarked in the cloud.

Brendan Eich, Mozilla's chief technology officer, posted his thoughts on the key gains. ORBX.js is significant as a workaround for patented codecs within Firefox, supporting instead the concept of open video on the Web. ORBX.js decodes HD video entirely in JavaScript. "On the good-for-the-open-web side: no encumbered-format burden on web browsers, they are just IP-blind runtimes. Technical wins start with the ability to evolve and improve the codec over time, instead of taking ten years to specify and burn it into silicon."

Eich also wrote that the ORBX.js represent s "25 percent better compression than H.264 for competitive quality, adaptive bit-rate while streaming, integer and (soon) floating point coding, better color depth, better intra-frame coding, a more parallelizable design—the list goes

on."

Eich further noted the watermarking feature of the new technology, versus reliance on digital rights management (DRM). "This could be huge."

With OTOY's GPU cloud approach involves individually watermarking every intra-frame, and some Hollywood supporters, he said, think that may be enough to eliminate the need for DRM.

"This kind of per-user watermarking has been prohibitively expensive," but OTOY, he said, estimated the cost at pennies per movie with its approach. Mozilla intends a continued collaboration with OTOY; and promises updates on a topic that is "moving very quickly."

OTOY founder and CEO Jules Urbach noted that they had found a way to provide a full PC experience through use of HTML5 and JavaScript without having to touch H.264, Flash, Java, or Google Native Client. He said, "We expect HTML5 to replace legacy operating systems on desktops, TVs, consoles and mobile devices."

OTOY is known for its rendering software, and as a pioneer in the field of CG rendering, visual effects software and cloud-streaming technology. OTOY's LightStage tools in 2010 received an Academy Award for their role in creating a visual-effects "pipeline" for films.

 More information:
www.otoy.com/130501_OTOY_release_FINAL.pdf
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