

Interactive 3-D graphical objects as an integral part of online shops

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Interactive 3-D graphical objects can be an integral part of online shops. Credit: Uwe Bellhäuser

When customers visit an online shop, they want to see all parts of a product; they want to enlarge it, or visualize adjusting single elements. Until now, web developers have been dealing with a multiplicity of different programs, in order to illustrate articles on the Internet in such a complex way. The new HTML extension XML3D, which offers the capability to describe computer scenes in spatial detail directly within the website's code, simplifies that. An online shop can be extended with XML3D in just a few clicks, as researchers of the Saarland University's Intel Visual Computing Institute demonstrate at stand F34 in hall 9 at the computer fair Cebit. The trade show takes place in Hannover from 6 to 10 March 2012.

The online shop's website fills the whole screen of the laptop. In the center, the image of a high-end digital camera appears. Just a few finger moves on the touchpad are needed to move the model freely and to enlarge or minimize it, no matter which objective has been set by the mouse click.

"Up to now, for every move of the different object modifications, innumerable photos would have to be taken and then set together to an animation with a special kind of software. Furthermore, it is not necessarily the case that the potential customer's browser already has the appropriate add-on program," Kristian Sons explains. He co-developed the scene description language XML3D in the Intel [Visual Computing Institute \(VCI\)](#)/German Research Center for [Artificial Intelligence \(DFKI\)](#). XML3D simply requires the appropriate 3D model, an Internet connection and a browser.

"Using XML3D, it is possible to embed three-dimensional content in such an easy way on websites as had previously been achievable only with video clips on the Internet," adds Philipp Slusallek, professor for [computer graphics](#) at Saarland University and scientific director in the DFKI and VCI. This is realized with XML3D by adding the necessary elements to the current HTML standard, HTML5. Besides text, images and videos, 3D objects can also be pictured on the website. "All 3D components form part of the HTML code that defines the website. Therefore, [web developers](#) can create new 3D content by using their habitual programming methods," Slusallek explains.

The Saarland computer scientists have already completed implementations of XML3D for the Firefox or Chrome browsers, as well as for the web programming language JavaScript, in combination with the browser component WebGL. This JavaScript interface to graphics hardware is already available in the latest versions of the browsers Firefox, Google Chrome, Apple Safari and Opera. All

implementations are free to use on the project's website.

In the future, not only three-dimensional configurators for online products but also interactive informational graphics, educational and computer games should be programmed using XML3D. Thus, researchers are working on a standardization of XML3D. In August 2011, in cooperation with the Fraunhofer IGD and the Web 3D Consortium, the DFKI founded a community within the World Wide Web Consortium (W3C) that guarantees the WWW standard. This represents the first phase of the standardization process. Mozilla, Google and the international industrial consortium Khronos Group already have shown their interest in this issue.

Provided by Saarland University

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