

WEB3D AND SIGGRAPH 2014 REVIEW

We had a great week in Vancouver connecting with so many of you, new collaborators and proven allies! The Web3D 2014 conference highlighted capabilities and trends in interactive 3D graphics. Experts from around the world shared 3D Web and Multimedia research and technologies for a wide range of applications and platforms. Over 400 people attended our SIGGRAPH Birds of the Feather (BoF) sessions with many more visiting the Web3D exhibition booth on the exhibit hall. The presentations from [Web3D2014](#) and [SIGGRAPH 2014](#) are available.



News highlights for SIGGRAPH 2014 activities include:

1. [Commercial Progress](#)
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3. [X3D V4.0 with HTML5/DOM](#)
4. [Cultural Heritage and Augmented Reality](#)
5. [Medical Volume Visualization](#)
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In each of these areas, we showcased the broad impact of the X3D Standard for interactive 3D graphics over the web. This year has been particularly exciting with new capabilities and applications for **X3DOM**, **Augmented Reality**, and **Volume Visualization**. In addition, X3D adoption in international initiatives like **3D Printing and Cultural Heritage** has given the extensible ISO standard even greater recognition and support. If you visited our booth, you saw Web3D Consortium members demonstrate the latest breakthrough techniques and applications, showcasing cutting-edge 3D visualization across a broad range of Engineering, Medical, 3D Printing, Cultural Heritage and Geospatial.

Each year we find more and more programmers, animators, artists, and 3D graphics experts around the world adopting X3D for its:

- Powerful, optimized visualization for real time 3D graphics on the Web.
- Easy-to-create interactive 3D content

- Robust interoperability and import/export formats
- Support of native 3D within an HTML5 page

Commercial Progress

Highlighted in the booth were Fraunhofer's newest techniques for large model visualization, Augmented Reality and Cultural Heritage, shown across several platforms including laptops and tablets. In addition, we showcased Virginia Tech's Medical Volume Visualization and real 3D prints from the NIH's [3D Print Exchange](#).

X3D's V4 prototype, X3DOM, demonstrations showed how X3D content can be run natively in an HTML5 browser without plug-ins. The open source WebGL/ JavaScript-based X3D player (X3DOM) fully integrates with HTML DOM events. WebGL is currently supported in Chrome, Firefox and Safari browsers. For more information see [X3DOM project](#) and [examples](#).

Web3D Conferences

Highlights from Web3D2014 in Vancouver



NEWS FLASH

At the Web3D 2014 Conference Keynote, Microsoft announced that all versions of Internet Explorer (IE) will support WebGL as a security update!

Best Paper

Based on attendee's voting the Best Paper was awarded to:

- **Leveraging public participation in urban planning with 3D web technology.** *Jens Dambruch, Michel Krämer*

Closely tied for 2nd place:

- **Configurable Instances of 3D Models for Declarative 3D in the Web.** *Felix Klein, Torsten Spieldenner, Kristian Sons, Philipp Slusallek*
- **SRC – A Streamable Format for Generalized Web-based 3D Data Transmission.** *Max Limper, Maik Thöner, Johannes Behr, Dieter W. Fellner*



Workshops

A one-day series of workshops was held the day prior to Web3D2015. These workshops covered active projects and other work being done by the Consortium. A [summary](#) of the workshops is available.

Presentations

Many of the Web3D2014 and SIGGRAPH2014 presentations are available.

- [Web3D2014 Conference](#) site (no presentations, but the program is available)
- [Web3D2014](#) (at this time only Tutorials and Workshops are available. Papers to be posted soon.)
- [SIGGRAPH 2014](#): BOF presentations are available using links in the individual sessions listed at the bottom of the target page.

Web3D2015 Conference

The 20th annual Web3D Conference will be held in Heraklion, Crete on 18-22 June 2015

X3D V4.0 with HTML5/DOM

Our X3D Version 4 BoF session discussed X3D content in HTML5 pages, rendered using WebGL. X3DOM is the prototype for next-generation Web as X3D Version 4 standard. This effort has strategic importance for Web3D and indeed for all 3D graphics, since X3D is an interchange format for a wide variety of models. The [X3D Working Group](#) is building a solid foundation for declarative X3D to support rich 3D graphics for the native Web page; Join us!

Cultural Heritage and Augmented Reality

Millions of artifacts populate our museums, awaiting discovery. While many museums are adopting X3D and X3DOM for archive and deliver, there are major challenges for 3D documentation, distribution, and augmented reality. With the international membership of the Web3D Consortium and the broader community focusing on these issues, we are sure to make progress in the coming years. The [Mixed Augmented Reality \(MAR\) Working Group](#) is focused on harmonizing proven capabilities into best practices for MAR and 3D graphics, implementable by multiple X3D viewers and usable by content authors.



Medical Volume Visualization

Our X3D Medical BoF discussed and demonstrated volume rendering capabilities for viewing 3D scans and objects using X3D and X3DOM. New demonstrations were showcased including X3D applications for haptic training and surgical simulation, multichannel microscopy, fossil characterization (e.g. microCT) and of course, medicine. A survey of RenderStyles and Metadata was included as well as an update on our activities with the DICOM standards organization, web publishing communities and 3D Printing. This work is being done by the [Medical Working Group](#).

CAD and 3D Printing

The X3D [Computer Aided Design \(CAD\) Working Group](#) conducted a workshop on upcoming work this year. Lots of exciting progress continues on a variety of initiatives for Building Information Modeling (BIM), Architecture Engineering Construction (AEC), and Additive Manufacturing (AM). Attendees confirmed their goal to define best practices X3D export to Additive Manufacturing File Format (AMF) for 3D printers. The [Java-based Xj3D open-source](#) codebase has successfully been moved to SourceForge to enable integration of multiple existing projects and further encourage community participation in building the valuable resource.



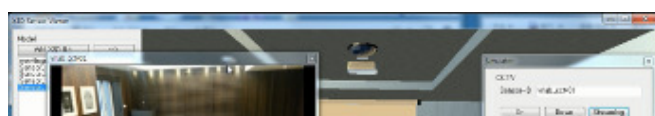
Humanoid Animation (H-Anim)

The [H-Anim Working Group](#) presented and discussed the revision process of the H-Anim specification, including several implementation demos. Level of Articulation (LOA) 1 to LOA3 examples of humanoid animation with motion capture data were discussed. Facial and hands and feet animations were also presented. The new H-Anim architecture and motion capture specifications are still in progress.



Korea Chapter

The Web3D [Korea Chapter](#) was started in 2009, and has been working on Web3D standards with Web3D Consortium WG members. Korea



chapter members presented projective texture mapping, X3D mixed and augmented reality, X3D CAD conversion, X3D physical sensors, and X3D chroma key at this meeting. These topics are still in progress cooperatively with ISO/IEC JTC 1/SC 24, to develop international standards.



X3D Systems

Use of X3D systems has increased steadily throughout the world, delivering durable applications in industry, science, medicine, cultural heritage, entertainment, education and Augmented Reality. [X3D remains](#) the most widely used standard for the implementation of high integrity and high capability 3D systems. For a list of recent projects using X3D see [X3D Examples](#) and [Use Cases](#) and [X3D Adoption](#).

Experience the power of the only ISO certified, royalty free open-standard 3D implementation for the Web: use X3D visualization and animation software and services across market sectors like Geospatial, Medical, BIM, and Virtual Worlds; explore X3D Earth integrated with cityscapes; and X3D content playing on mobile devices. ISO standardized X3D ensures the interoperability, longevity and ownership of your content!

There has never been a better time to [engage with the Web3D Consortium](#) and to build out new dimensions on the World Wide Web!

We look forward to your participation! Please [contact Anita Havele](#) for additional information.

Upcoming Events

- [ISMAR](#) – Munich, Germany. 8-12 September 2014
- [OGC](#) – Calgary, Alberta. 15-19 September 2014
- [VR Hackathon](#) – San Francisco, California. 17-19 October 2014
- [HTML 5 Developers Conference](#) – San Francisco, California. 20-24 October 2014
- [Web3D 2015](#) – Heraklion, Crete. 18-22 June 2015

See [Web3D's](#) site for additional events.

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ADDITIONAL INFORMATION



[Case Studies](#)



[X3D & VRML](#)



[3D in HTML](#)



[Web3D Videos](#)



[Great
Projects by
Our
Members](#)



[The Most
Widely
Used
Formats](#)



[X3DOM...
3D
Without
Plugins](#)



[X3D and
VRML](#)

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The Web3D Consortium is a member funded nonprofit international organization that develops and maintains the X3D standard – X3D is a 3D file format and runtime specification that is open, royalty free and ISO ratified. X3D is used for real-time, interactive and immersive 3D visualization of data across platforms and over networks.