

WEB3D 2015 CONFERENCE AND SIGGRAPH 2015 REVIEW

We had a great week in Los Angeles at SIGGRAPH 2015 connecting with the 3D community, new collaborators and proven allies to venture the Xroads of 3D on the Web! Over 300 people attended our Birds of the Feather (BoF) sessions with many more visiting the Web3D exhibition booth on the show floor. There has never been a better time to [engage with the Web3D Consortium](#) and to build out new dimensions on the World Wide Web!



Birds of the Feather (BOF) presentations

News highlights for SIGGRAPH 2015 activities include:

1. [Commercial Progress](#)
2. [X3D V4.0 with HTML5/DOM](#)
3. [Cultural Heritage and Augmented Reality](#)
4. [Medical Volume Visualization](#)
5. [CAD and 3D Printing](#)
6. [Humanoid Animation \(H-Anim\)](#)
7. [Geo Web](#)
8. [Web3D 2015 Conference](#)
9. [Upcoming Events](#)
10. [Big Picture Getting Bigger: X3D Systems](#)

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**, **Mixed 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 multiple reasons, including:

- 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, Mixed 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](#).

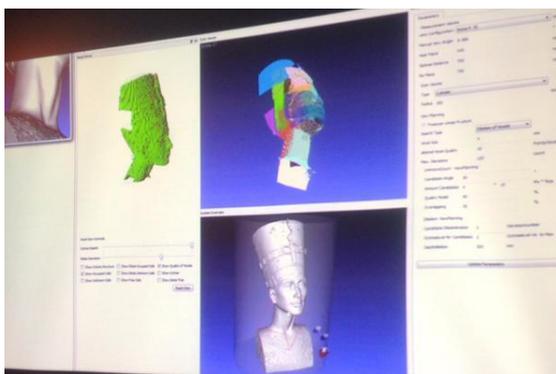
X3D's V4 prototype, X3DOM, demonstrations showed how X3D content can be run natively in an HTML5 browser without plug-ins. The open source WebGL/ JavaScript-based X3D player (X3DOM) fully integrates with HTML DOM events. WebGL is currently supported in Chrome, Firefox and Safari browsers. For more information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

Our Birds of the Feather (BOF) presentations are available here

X3D Futures - V4.0 with HTML5/DOM

Our X3D Futures BOF discussions included 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

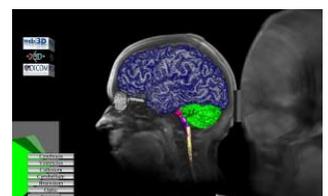


Millions of artifacts populate our museums, awaiting discovery. While many museums are adopting X3D and X3DOM for archive and deliver, there are major challenges for 3D documentation, distribution, and augmented reality. With the international membership of the Web3D Consortium and the broader community focusing on these issues through the [Cultural and Natural Heritage Working Group](#). 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 standardization efforts and demonstrated volume rendering capabilities for viewing 3D scans and objects using X3D and



X3DOM. Interoperability and reproducibility are crucial concerns in medical imaging. **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. New next-generation applications were showcased including X3D applications for haptic training and surgical simulation. This work is being done by the [Medical Working Group](#).

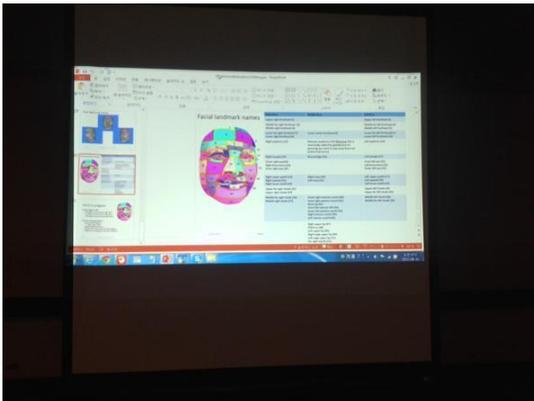
CAD and 3D Printing

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.



Geo web

The [Geospatial working Group](#) presented X3D Geo examples and discussions on advanced 3D web development methods for GIS. From real to virtual cities, from way-finding to economic development, we are embedded in Geospatial data.



Web3D 2015 Conference

Highlights from Web3D 2015 in Crete, Greece – Our 20th Anniversary



Keynote speaker Dieter Fellner <https://www.igd.fraunhofer.de/en/Institut/Institutsleitung/Dieter-W-Fellner> @ [Fraunhofer IGD](#) @ [Web3D2015](#)

Best Paper

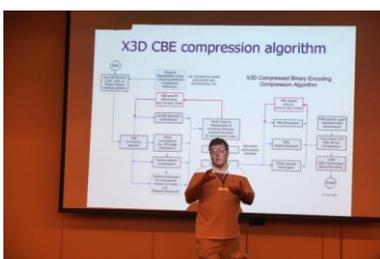


Best Paper was awarded to: Sematic Query-based Generation of Customized 3D Scenes. *Krzysztof Walczak and, Jakub Flotnyski.*

Honorable Second Mention: A CSS Integration Model for Declarative 3D. *Jan Sutter, Kristian Son and Philipp Slusallek.*

Web3D City Model Contest Winners

Here are the Web3D City Model Contest competition winners for the best browser-based 3D rendering of a city. This contest was organized to encourage development of software solutions to stream large 3D city models including textured buildings, terrain, and sensor data.



Web3D Consortium Open Meeting/Workshops

A one-day series of workshops was held the day prior to Web3D 2015 Conference. These workshops covered active projects and other work being done by the Consortium members. A [summary](#) of the workshops is available.

Web3D 2015 Conference Presentations and Videos

Many of the presentations are available at [Web3D 2015 Conference](#)

Web3D 2016 Conference

Web3D 2016 Conference will be held in Anaheim, California from 22-24 July 2016.

Upcoming Events

[VR Hackathon](#) Organized and Sponsored by Web3D Consortium.

Big Picture Getting Bigger: 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!