The Web3D Consortium

2024 End-of-Year Report

web|3D
CONSORTIUM

Highlights

The Web3D Consortium has experienced another remarkable year, marked by new collaborations and strengthened partnerships at the intersection of 3D technology on the Web. Our ongoing outreach efforts and the continued development of our standards make this an exciting time to engage with the Consortium and explore new dimensions in 3D graphics on the World Wide Web.

Web3D is a nonprofit organization that develops and maintains the X3D, VRML, and HAnim international standards. These are 3D graphics file formats and run-time specifications for the delivery and integration of interactive 3D data over networks. Web3D Consortium members work together to produce open, royalty-free and ISO-ratified capabilities for the Web.

1. X3Dv4: Extensible 3D version 4.0
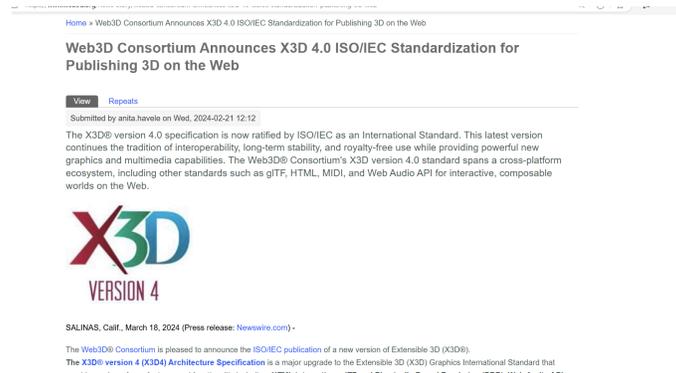
Milestones

[The **X3D 4.0** specification was internationally-ratified by voting ISO National Bodies](). *X3Dv4* provides an interactive, scalable environment that ensures interoperability and long-term archival stability, compatible with HTML5 and web methodologies. It supports backward compatibility with existing VRML and X3D scenes from as early as 1997.

X3Dv4 includes enhancements such as HTML5 integration, support for multiple file formats, including glTF and upgrades in physically based rendering (PBR) upgrade as well as Web Audio and MIDI compatibility.

MORE DETAILS:

- **[X3D 4.0 specification]()**
- [X3Dv4 Highlights]()

Next Steps

Our private GitHub repository supports the workflow from specification writing to ISO ratification. Our future focus will be on testing and implementing X3D 4.0, and developing version 4.1.

For X3Dv4.0, we will update the file encodings and API languages and we will continue to ensure alignment with W3C HTML, WebXR, and DOM updates.

HAnim: We are enhancing support for named sites and feature points, crucial for accurate body measurements in 3D body processing. This work is essential for developing interfaces for haptic and kinetic simulations and serves a fundamental need in scanning, motion capture, and humanoid interaction applications.

- [X3D the HTML Way](#) describes 3 different integration models with live Web examples!

MORE DETAILS:

Roadmap is here: **[X3D Standardization](#)**

2. Industry Impact
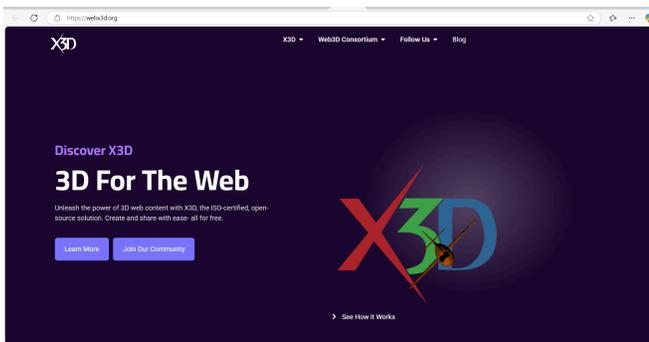
Global Presence

We have maintained strong liaison relationships with standards development organizations (ISO, W3C, OGC, Khronos) that focus on 3D-related standards, enhancing interoperability and collaboration across the sector.

While [Web3D.org](#) is our primary site, we have launched our marketing and educational platform, **WebX3D.org**, has successfully introduced newcomers to the world of X3D.

Metaverse Standards Forum

Our engagement with the Metaverse Standards Forum (MSF) community continues to grow, with Web3D members taking a leading role in the [MSF 3D Web Interoperability WG](#). This initiative aims to establish effective standards and practices, ensuring that the Metaverse becomes fully interoperable with the World Wide Web, thereby enhancing the relevance of standards development organizations as Metaverse concepts advance.
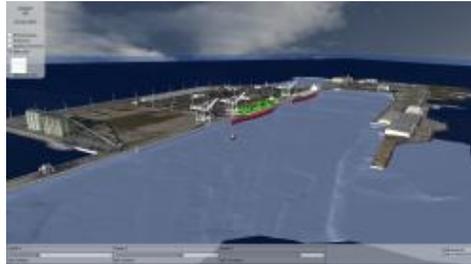
3. Community Spotlights

New [Case Studies](#)

We have been showing how our Members are driving innovations in Web3D technology and applications:

- [Versar](#) - [Gulfport](#) & [Annapolis](#)
- [Threedy](#) - InstantHub
- [Virginia Tech](#) - brain science
- [VicomTech](#) - weblabel

Our Spring [2024 Newsletter](#) also showcases key Web3D Member activities!

Anita Havele, Casey Gomez, and Nicholas Polys. 2024. Interactive 3D Geospatial Visualization of the Port of Gulfport using X3D. In Proceedings of the 29th International ACM Conference on 3D Web Technology (Web3D '24). Association for Computing Machinery, New York, NY, USA, Article 30, 1–3. https://doi.org/10.1145/3665318.3680539


DREAM Lab joins Web3D

The University of North Dakota's Digital Realism in Engineering and the Applied Metaverse (DREAM) Lab joins the Web3D Consortium. The University provides state-of-the-art computing resources and support to researchers and faculty involved in creative activities. The lab has high performance computers and specialty software for creating animations, augmented reality applications, and motion-capture videos.
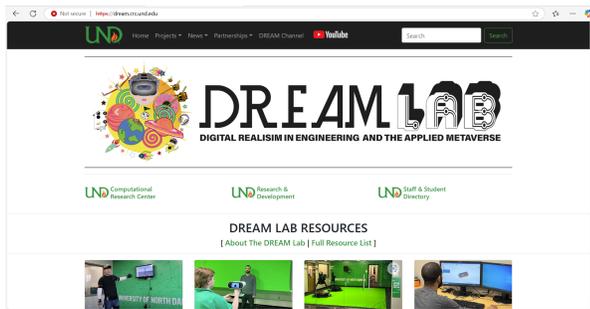
Web3D 2024

Our annual conference on Web3D technologies was held in Portugal in September 2024, gathering top professionals from the global 3D industry. The event generated valuable insights and showcased new knowledge and unlocked the value of 3D across several application domains.

Read More
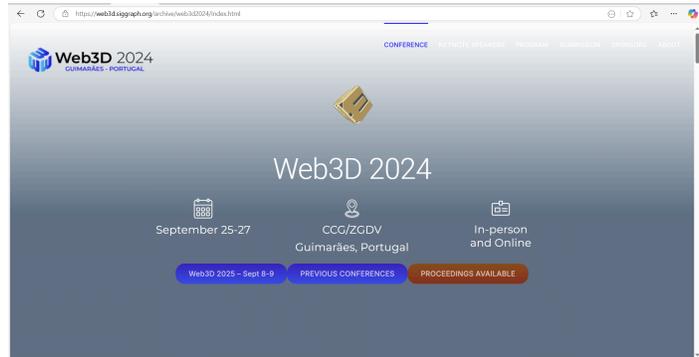
Web3D at SIGGRAPH 2024:

The SIGGRAPH event, held in Denver, Colorado, attracted over 200 attendees to our Birds-of-a-Feather (BoF) sessions. These sessions not only provided educational value but also fostered networking opportunities among experts and industry leaders, including **Virginia Tech, Threedy, MBARI,** and **Versar**. Discussions included the Web3D Standards ecosystem and its interoperability for an immersive and connected experience.

Read More

Outreach
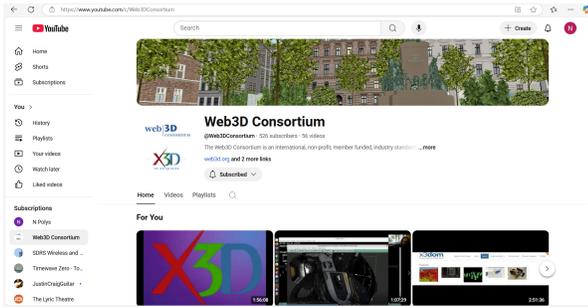
Our YouTube Channel has recently been revamped to showcase the diverse applications of X3D. In 2024, we have broadened our outreach efforts, with members advocating for open, interoperable Web3D visualization standards across various sectors.

Notably, Chris Lane, CEO of 3dMD, participated in a panel session promoting X3D standards in the 3D Body Tech industry, highlighting the growing interest in this area within academic literature.

4. Mark your calendar!

We invite the 3D community to engage with us at any of these face-to-face events:

- **IEEE VR 2025** in St. Malo, France - Web3D members present a paper on a user study of cross-platform safety inspection with X3D!
- **30th Web3D 2025 Conference** in Siena, Italy, from **September 9–13, 2025.** This year, we will co-locate with DH 2025 to explore digital legacies, immersive futures, and the integration of immersive technologies in the

digital heritage domain. Since 1995, Web3D Conferences have been sponsored by ACM SIGGRAPH in collaboration with the Web3D Consortium.

- Join us at **SIGGRAPH 2025**, where we will continue to chart the future of interactive, real-time 3D graphics!

5. Join us!

With the official ISO/IEC release of X3D 4.0, now is the perfect time to engage with the Web3D Consortium and explore new dimensions for 3D graphics on the World Wide Web. We extend our gratitude to our members and board of directors whose contributions have been vital in advancing Web3D standards and fostering innovation in interactive 3D graphics.

We look forward to continued collaboration in 2025 as we pave the way for new opportunities in 3D graphics.
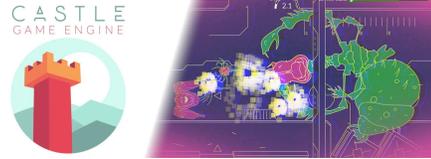
6. News You Can Use
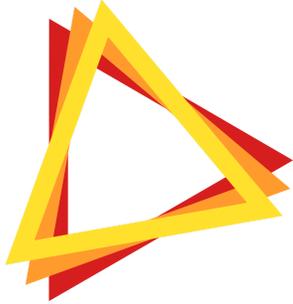
X_ITE 11.1.1

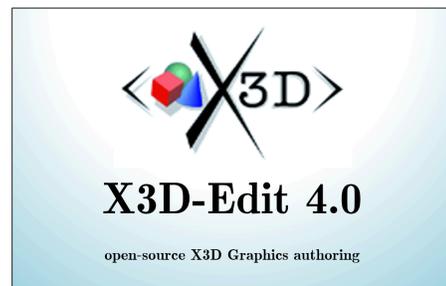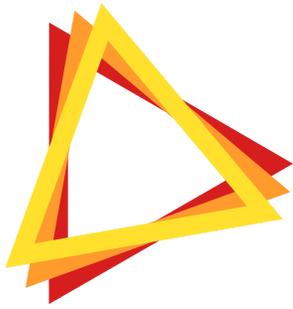X3D+glTF in a Javascript + WebGL engine; physics, particle systems, volume rendering

Castle Game Engine **7.0**

X3D+glTF engine includes IFC support, physics and particle systems; compiles for native and WASM platforms including Android and Switch

X3DOM **1.83**

X3D+glTF in a Javascript + WebGL engine supporting WebXR, WebAudio, physics, particle systems, volume rendering, and geospatial

X3D-Edit

free, open-source Extensible 3D (X3D) Graphics authoring tool

X_ITE 11.1.1

X3D+glTF in a Javascript + WebGL engine; physics, particle systems, volume rendering

Castle Game Engine 7.0

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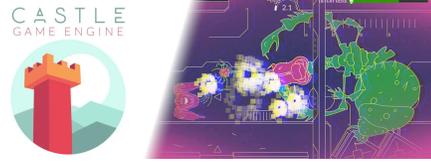
Blender

Web3D Consortium members updated the X3D exporter Add-on to support texturing and lights

Max & Maya

Web3D Consortium members are developing and using X3D exporters for 3D Studio Max and Maya

Web3D Consortium launched the new X3D Ecosystem Special Interest Group focused on the growth of the X3D and accelerated the progress of integrating X3D content across diverse domains and platforms. By extending support of X3D authoring tools and X3D conversion tools in other 3D technologies we can bring X3D into the mainstream. Calling 3D experts and enthusiasts to join!

Feedback & suggestions

You can stay further informed with our Calendar, the News and Events page, Twitter @Web3dConsortium, Facebook, and YouTube sites.

As ever, feel free to Contact Us about your interests!

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