Web3D Consortium Town Hall

Developing open 3D standards for a hyperconnected world
www.web3d.org

web|3D CONSORTIUM

WEB 3D
2020 SEOUL + ONLINE

Web3D 2020 Conference
12 November 2020

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Paving the Road to Interoperable 3D Graphics with Open Standards

Our Standards X3D **and** H|anim

About Web3D Consortium

- **International, non-profit, member funded, standards development organization**

- **Engaging a community of technologists, enterprise and artists**

- **Spanning member from academia, Industry, Government and Professionals**
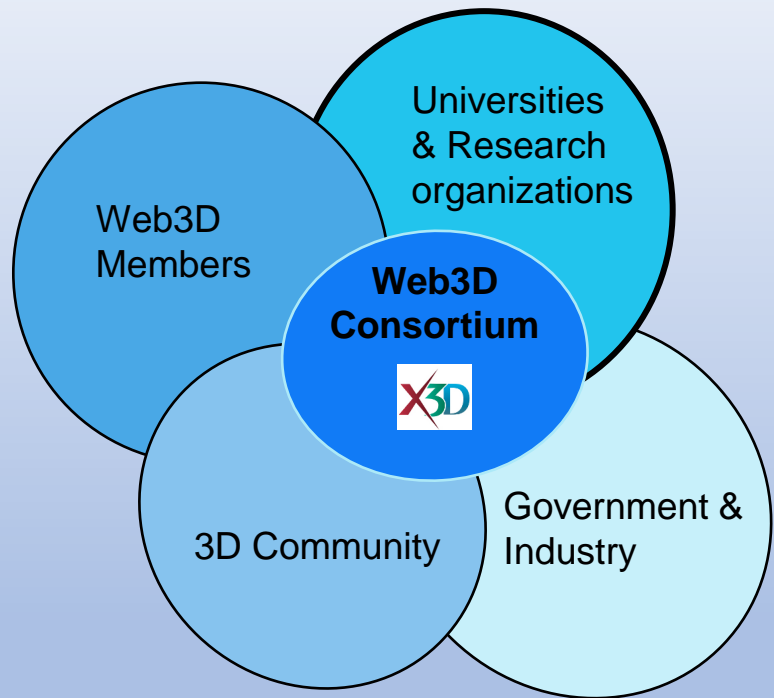
www.web3d.org

Web3D Consortium Goals

Encourage enterprises and industry to use open 3D standards

Provide a forum for the creation of open standards for 3D the Web, and to integrate these standards and resources into commercial markets and user education programs.

Empower 3D/VR Developers

Guide Policy Makers

Web3D Members

Universities & Research organizations

Web3D Consortium

X3D

3D Community

Government & Industry

www.web3d.org/about

Web3D Standards

X3D
File Format and Rendering Engine

HAnim
Humanoid Animation

X3D standards and HANIM
Ratified by
ISO/IEC JTC 1/SC 24 WG 6

Version 4.0 Public Draft

Integrate X3D to HTML5
Join and Participate in
Web3D Working Groups

www.web3d.org/standards

About X3D

- **Royalty Free**
- **Open ISO Standard**
- **Evolutionary - 1997**
- **Durable – Backward Compatible**
- **Interoperable**
- **Multi Platform**

X3D is next generations VRML, offering robust 3D functionality
Allowing 3D scenes to be used by a wide variety of applications
Supporting interoperability with other industry standards
Providing Long-term stability for 3D solutions

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< X3D >

Next Generation VRML

H|anim
HUMANOID
ANIMATION
WORKING GROUP

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X3D: Publishing 3D with interactivity

Interactive 3D

A language to add 3D models, geospatial and imagery into one system (3D application)

Profile and Component structure to promote interoperability

Meshes * Lights * Cameras * Materials * Textures * Shaders * Annotation * Volume * Audio/Video * AR/VR * Security * Metadata

Interactive 3D Web applications

www.web3d.org/x3d/why-use-x3d

Web is our platform

X3D Anywhere

- **3D + VR + AR Capable**
- **Runs on multiple devices** (Phones, tablets, desktops, caves)
- **Used in multiple domains** (Medical, Geospatial, 3D printing/scanning, CAD and more)
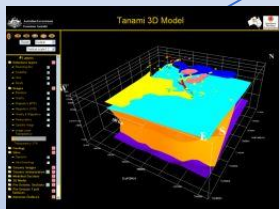- **Interaction**
- **Animation**

www.web3d.org/x3d/why-use-x3d

X3D: A Hub for 3D Applications

The backbone for the **new dimensions** of 3D!

www.web3d.org/join

medical   scanning   platforms   3D printing   geospatial

X3D Version 4 - HTML Integrated - Open-source implementations

Augmented Reality

Geo Visualization

Education

Cultural Heritage

Gaming
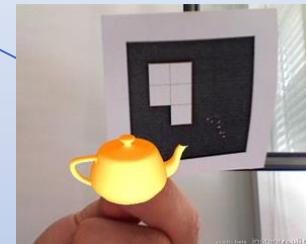
Virtual Worlds
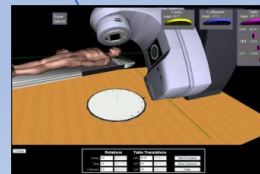
Mirror Worlds

E-commerce

Medical

Enterprise

www.web3d.org/case-studies

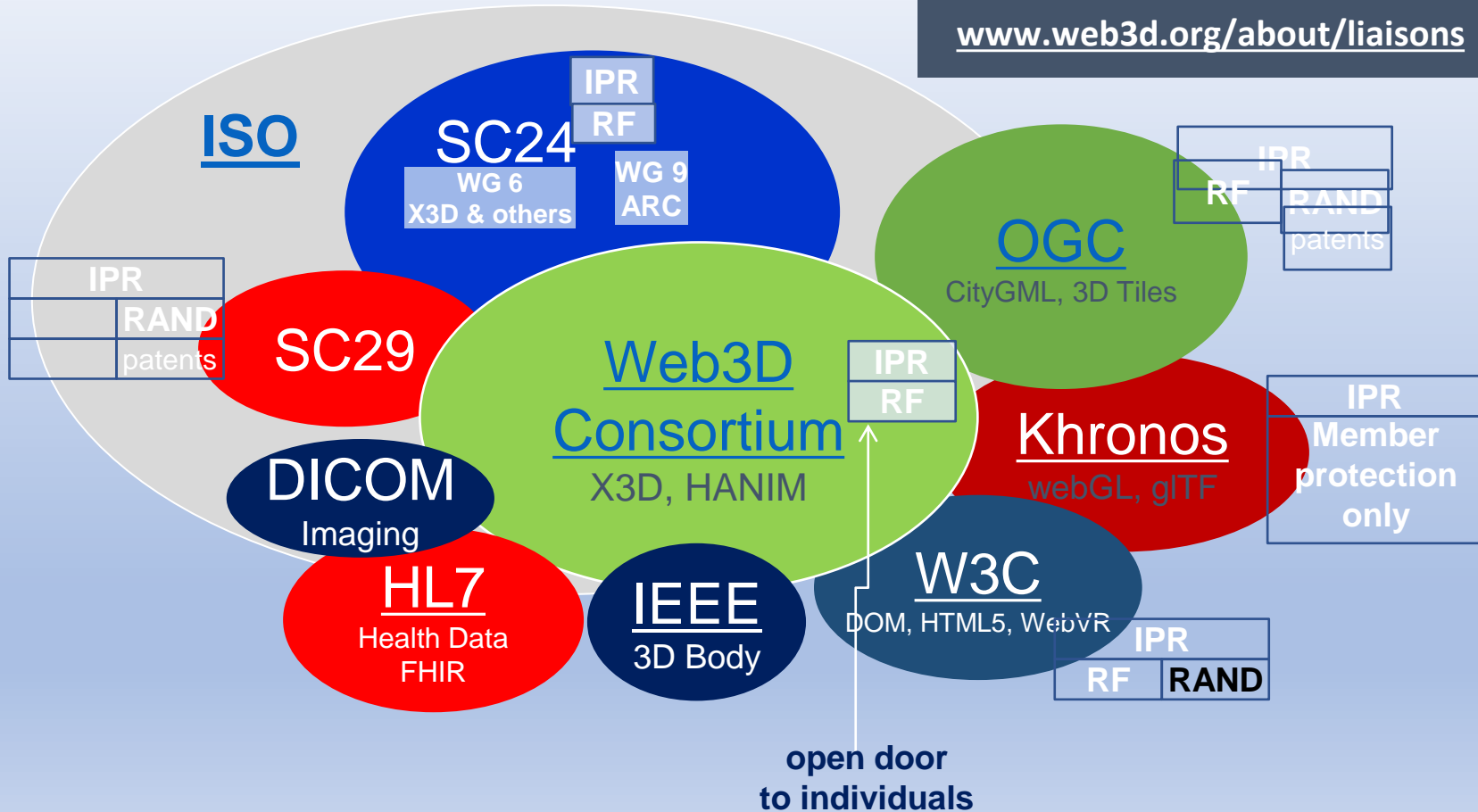# Why are OPEN Interoperable standards important for 3D?

- **Standards promote innovation**

- **Standards promote collaboration between domains and technologies**

- **Standards reduce costs**

- **Standards provide interoperable solutions**

- **Standards advance markets**

- **No risk of being locked into a single company solution**

www.web3d.org/x3d/why-use-x3d

Web3D Standards Convergence

www.web3d.org/about/liaisons

ISO

SC24
IPR
RF
WG 6
X3D & others
WG 9
ARC

OGC
CityGML, 3D Tiles

IPR
RF
RAND
patents

IPR
RAND
patents

SC29

Web3D
Consortium
X3D, HANIM

IPR
RF

Khronos
webGL, glTF

IPR
Member
protection
only

DICOM
Imaging

HL7
Health Data
FHIR

IEEE
3D Body

W3C
DOM, HTML5, WebVR

IPR
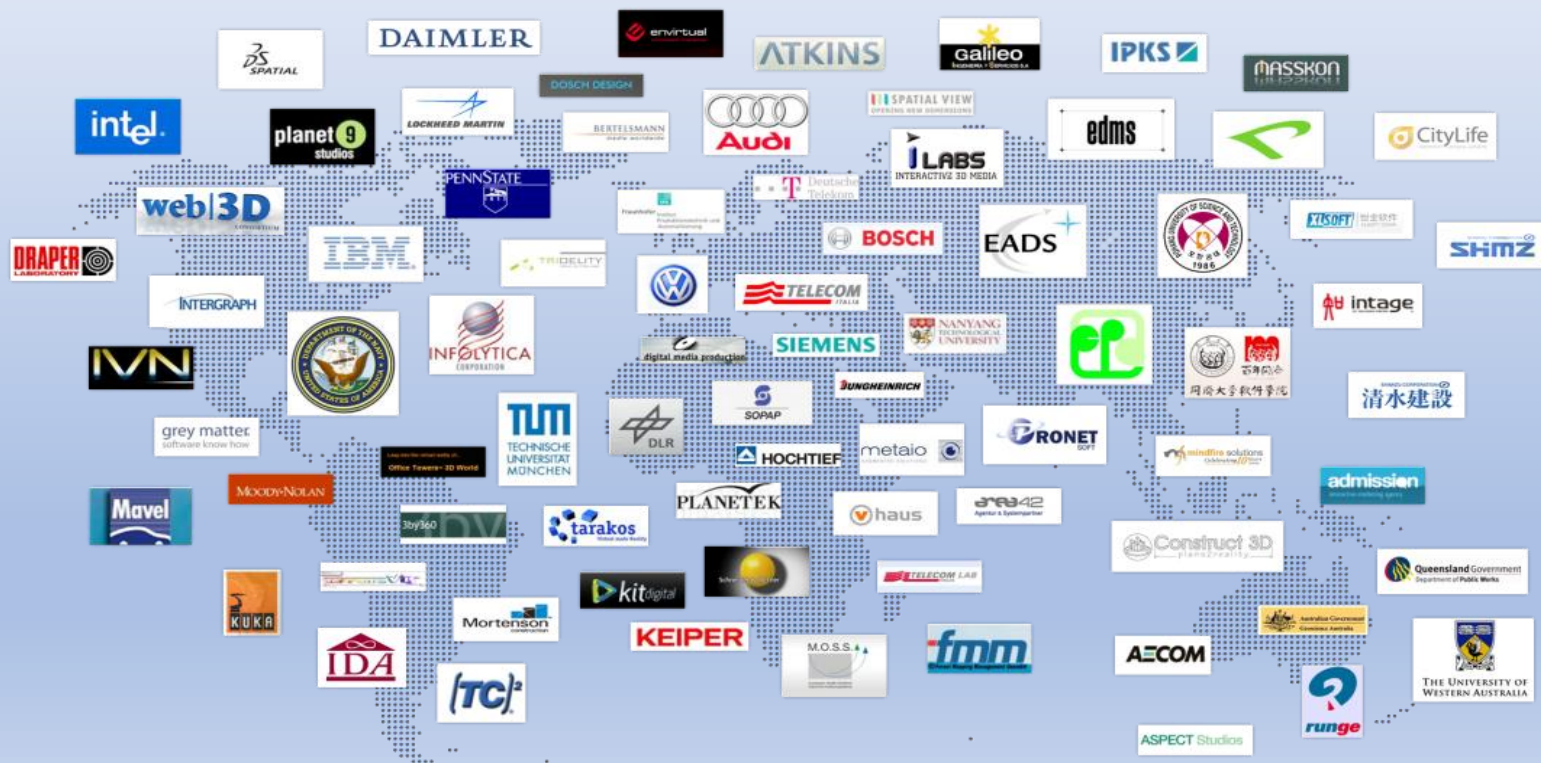RF   RAND

open door
to individuals

Web3D.org

Large-scale 3D visualization was this oil-rig. Using new emerging standards for binary compression, its now running in your web browser!!!
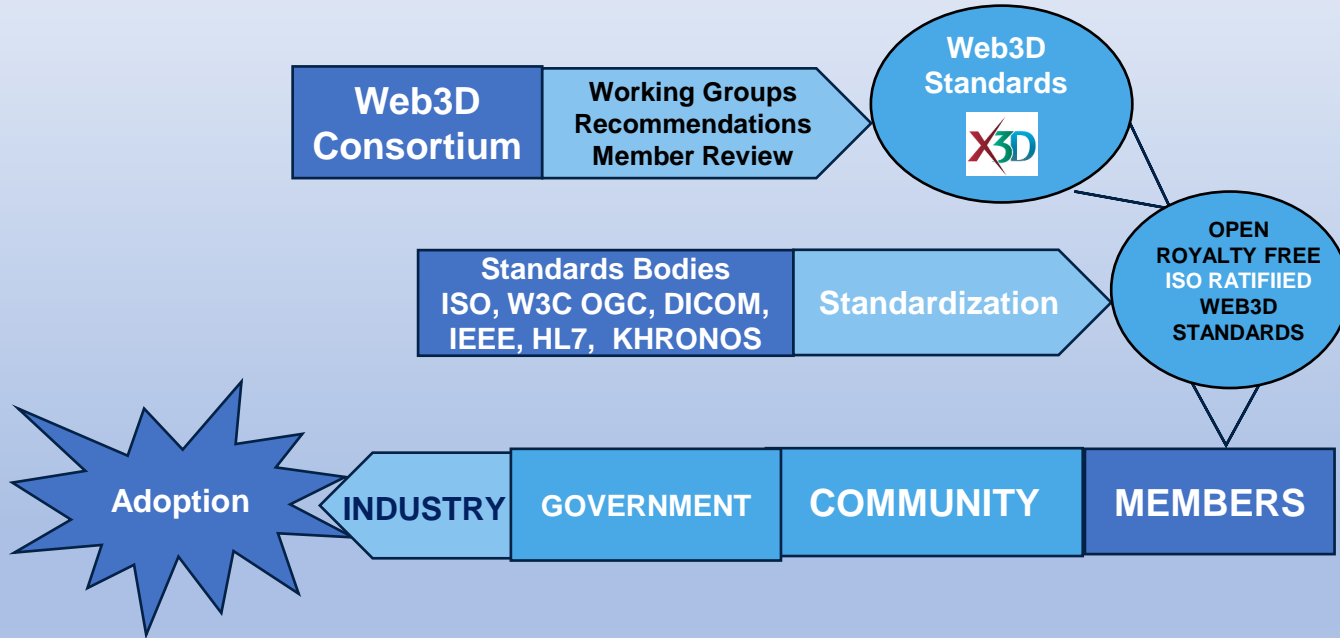 With Web slider to change the time of day and shadows in the 3D model.

www.web3d.org

Who is using X3D?

Bringing open Web3D Standards to ALL

Web3D Consortium → Working Groups Recommendations Member Review → **Web3D Standards** (X3D) → **OPEN ROYALTY FREE ISO RATIFIIED WEB3D STANDARDS**

Standards Bodies ISO, W3C OGC, DICOM, IEEE, HL7, KHRONOS → **Standardization**

Adoption ← **INDUSTRY** **GOVERNMENT** **COMMUNITY** **MEMBERS**

www.web3d.org/working-groups

Web3D Standardization Process

Volunteers and Members work together on Standards

Web3D Working Groups:

X3D
Medical
Geospatial
Mixed Reality
Heritage
Semantics
Design Printing & Scanning
Web3D UX

SDO Partnerships:

www.web3d.org/working-groups

X3D is Evolving - <u>X3D Version 4</u>
Always backward compatible

X3Dv4 is available in all browsers

Timeline - Draft 2020 - ISO Ratification

https://github.com/Web3dConsortium

Released <u>public draft</u>

X3D Version 4 - HTML Integrated - Hub for 3D Applications

Authors have the archival stability of a well-tested long-lasting specification to build upon

<u>**www.web3d.org/x3dv4-highlights**</u>

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X3D is Evolving - X3D version 4.0

Always backward compatible

Highlights

Open-source implementations
X3DOM and X_ITE

- HTML5 Integration
- X3D Unified Object Model (X3DUOM)
- 3D printing of models
- 3D scanning of objects, and support for point clouds
- Model structure with complete metadata.
- Volume visualization
- Annotation
- Inlining glTF assets
- Physical Based Rendering (PBR)
- Archival publishing of cultural and natural heritage

x3dom
Instant 3D the HTML way!

X_ITE

www.web3d.org/x3dv4-highlights

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Web3D: 2019-2020 Highlights

Covid-19 Spotlight
Our members NIH and NPS are providing helpful 3D Printing X3D resources in this crisis.

Standard X3D Version 4.0 - Released <u>public draft</u>
HANIM 2.0 Released

SDO HL7 Meeting – Keynote Speaker
IEEE 3D Body Processing – 3D Body Tech Conference Key Presenters

www.web3d.org/news-events

Web3D: 2019-2020 Highlights

Events <u>SIGGRAPH 2019</u> **- Los Angeles**

<u>Web3D 2019</u> **- Los Angeles**

<u>3D Body Tech Conference</u> **– Lugano Switzerland**

Collaborative 3D Visualization <u>Workshop with DOD</u>   - Washington DC

<u>IEEE VR 2020</u> **Web3D Tutorial**

<u>SIGGRAPH 2020</u> **(Virtual)**

<u>Web3D 2020</u> **(Virtual)**

<u>Web3D Webinars</u> **– Learn X3D**

www.web3d.org/news-events

Web3D: New Working Groups

Semantic Web: Web interoperability and enable intelligent 3D applications, feature-based 3D model querying, and reasoning over 3D scenes.

Web 3D User Experience: Supporting rich user experiences (UX), intuitive navigation, and effective interaction techniques for a variety of 3D Web technologies.

Now is the time to join Web3D!

www.web3d.org/join

New SDO Collaborations

Extensions that are relevant to IEEE 3D Body Processing
open standard enabling metadata exchange and **visualization for 3d body model**

Developing examples using X3D to **visualize healthcare data.**
Demographics and distribution of illness in a hospitable system
Test results of CPET exercises tests, X3D enables interactive 3D charting.
Press Release

www.web3d.org/about/liaisons

Web3D: Working Groups Highlights

X3D: Is shipping the second public working draft (WD2) of the X3D Version 4 specification (X3D4).

Design, Printing and Scanning (DPS): Developing standards and practices for robust and secure visualization of STEP Product Data, with valuable collaboration with other visualization formats such as JT and 3D-PDF.

Geospatial: Workflows and systems to support glTF and a Cesium Tiles-type approach for dealing with large and complex scenes.

Medical: Through our HL7 Liaison relationships, the Medical WG has developed several examples using X3D to visualize healthcare data.

Heritage: Creating a Web3D library from their world-class insect collection.

Join us and participate in building X3D

WWW.Web3D.org/working-groups

Web3D Consortium Member Benefits

www.web3d.org/member-benefits

< X3D >

Marketing Opportunities	Business Opportunities	Drive Web3D Standards	Networking Opportunities	Web3D Talent Bank
▪ Promote products ▪ Conference participation ▪ Speaking Opportunities ▪ Booth partnership	▪ Business partnership ▪ Joint grants	▪ Working Group participation ▪ Early access to spec ▪ Board Seat	▪ Industry Leaders ▪ Research experts ▪ 3D companies	▪ Access to Web3D experts

There are many benefits to joining Web3D Consortium as we build open interactive 3D standards

Web3D Resources

About:	**www.webx3d.org/about**
Membership:	**www.web3d.org/join**
Learn X3D:	**www.webx3d.org/learn-x3d**
Web3D Standards:	**www.web3d.org/standards**
Work Groups:	**www.web3d.org/working-groups**
Case Studies:	**www.web3d.org/case-studies**
Workshop:	**www.web3d.org/Web3d-quickstart**
Examples:	**www.web3d.org/x3d/content/examples/Basic**
News & Events:	**www.web3d.org/news-events**

2020 Events

Web3D Webinars 3-6 August 2020
Learn X3D, X3D Browsers, X3D Tools
www.web3d.org/webinars

Web3D Virtual booth at SIGGRAPH 2020 Starting August 17, 2020
https://s2020.siggraph.org/conference/

Web3D 2020
https://web3d.siggraph.org

www.web3d.org/news-events

Web3D 2021 Events

Web3D 2021 – Hybrid (In-person and virtua)
Tentative Dates – October 2021
Pisa, Italy – Hosts: Institute for Information Science and
Technologies (ISTI, CNR Italy).
https://web3d.siggraph.org

Virtual SIGGRAPH 2021
https://s2021.siggraph.org/conference/

Web3D 2021 Webinars
Continued X3D Education
 www.web3d.org/webinars

www.web3d.org/news-events

New marketing Website and X3D Webinars

WebX3D
Easy access to get started with X3D
Blogs, Newsletter and more!
www.webX3d.org

Web3D Webinars
Learn X3D, X3D Browsers, X3D Tools
 www.web3d.org/webinars

www.web3d.org/news-events

Join Web3D and Participate

Join us in building X3D

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www.web3d.org/join

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How can we help?

1. How can we improve our support to the 3D Community?

2. What is the single biggest problem you face with making or publishing 3D?

3. How hard has it been for you to solve that problem? And Why?

4. If you solved that problem, how would that improve your productivity or business?