## X3D Highlights

- **Open 3D file format** to optimize production pipelines and preserve valuable 3D content

- **Runtime architecture** is backwards compatible for long-term content use and archival storage and retrieval

- **Declarative approach** makes it easy to compose scenes with the latest graphics, audio and other technologies

- **Multiple encodings** including XML and binary (JSON soon!) to leverage existing frameworks

- **Royalty FREE** provides the most cost effective solution for commercial AND non-commercial use

- **ISO-ratified** for rigorous documentation, international reach

- **Commercial and open source** implementations allowing multiple possible business models

- **Multi-platform** (mobile to desktop), including a browser-only solution with the widest market penetration

### X3D Markets
- Virtual Environments
- Advertising
- Engineering, CAD
- Architecture/BIM
- Geospatial
- Training/Simulation
- Scientific/Data Visualization
- Medical Imaging

### X3D Users
- Web Consumers
- Government (including NASA, US Navy, NIH, NIST, EU, AU)
- Academia
- Research labs
- Industry (including Fortune 500)
- Makers

Detailed 3D City Models

web|3D CONSORTIUM

## Drive the evolution of the 3D Web

The Web3D Consortium is an international, non-profit, member funded, industry standards development organization. The democratization of 3D content due to advances in 3D cameras, scanners and software will bring a multitude of new 3D experiences and applications. The Web3D Consortium offers a royalty free, open, internationally ratified standard that will promote innovation, preserve content through time and enable interoperability in this rapidly growing market landscape. Join the Consortium and be a part of this exciting time in 3D content history!

**Join the Web3D Consortium
web3d.org**

**Membership Levels:**
- Directing, Organizational and Professional.
- Members are able to participate in the Working Groups and contribute towards the development of best practices and specifications for Web3D Consortium standards.

**Member Benefits:**
- Working Group participation
- Specification voting rights
- Early access to X3D Specifications
- Eligibility for Board of Directors election
- Marketing Benefits
  - Product exposure on Web3D.org
  - Member marketing profile
  - Joint press releases
  - Trade show partnerships
  - Member product discounts

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**W W W . W E B 3 D . O R G**

web|3D

## X3D: THE REAL-TIME 3D SOLUTION FOR THE WORLD-WIDE WEB

X3D 3D ANYWHERE

H|anim HUMANOID ANIMATION WORKING GROUP

VRML VIRTUAL REALITY MODELING LANGUAGE
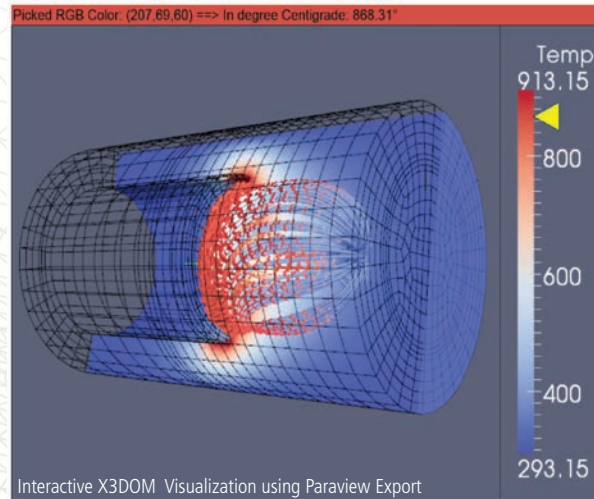
H-Anim

## What is X3D?

X3D (Extensible 3D) is a royalty-free and openly published standard file format and run-time architecture specification to represent and communicate 3D objects, events, behaviors and environments. The X3D suite of International Standards Organization (ISO) ratified standards provide a robust abstraction for the storage, retrieval and playback of real time 3D graphics content across diverse platforms. The extensible scene graph model of X3D can be equivalently encoded in a number of valid, secure and efficient encodings and be accessed and manipulated through a number of languages using a common API. Development has evolved from its beginnings as the Virtual Reality Modeling Language (VRML) ISO standard to the considerably more advanced and expressive X3D.

## What tools support or use X3D?

X3D scenes and objects can be generated programmatically or by by any text or XML editor: X3D is supported by dozens of domain and DCC tools as well as XML and text editors.
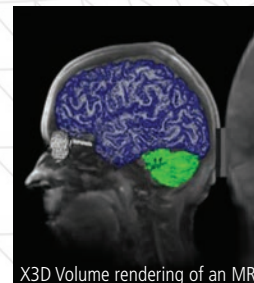
There are a number of mainstream and free tools available to convert to and from X3D with other file formats. From 3DS Max, Maya, Modo, Rhino3D, Mathematica, Matlab, Paraview/VTK, Chimera, VMD, Osirix, PostGIS, Geoserver, Cityserver3D, Netfabb, Shapeways, AnyLogic, Meshlab, FreeCAD, BRL CAD, Inventor/AutoCAD, Amira, Inventor, CADStudio,Unreal Engine, Ayam, Blender and others.

X3DOM car configurator

Picked RGB Color: (207,69,60) ==> In degree Centigrade: 868.31"

Temp
913.15
800
600
400
293.15

Interactive X3DOM  Visualization using Paraview Export

## Why is X3D important?

- Applications communicate over the Web using an ISO- certified scene graph model
- Content is encoded in multiple formats:
                        **XML, Binary, VRML-Classic**
- APIs for **JavaScript (ECMAScript)** and **Java** languages
- X3D is modular and extensible, saving development time and money and providing value to vendor and consumer
- X3D is free for use – not relying on propriety formats and upgrades for a lifetime 3D content lifecycle
- X3D provides multiple content sources and authoring pathways
- X3D enables developers and content creators to build a common fabric for cyberspace: from DIY prototyping to 3D printing to web-based virtual and mirror worlds to immersive CAVEs and HMDs
- X3D is designed and developed through the open source community, industry and government involvement

**Leveraging the extensible scene graph model of X3D unlocks the full value of virtual and mirror worlds across the World Wide Web today and tomorrow.**

X3D Volume rendering of an MRI

## Join the Consortium and drive the evolution of the 3D Web

As an internationally supported standard, X3D provides portability, interoperability, and durability to 3D worlds and assets. X3D is web-ready and enterprise approved, with a rich modular set of features. Use of X3D is growing with content and applications across market sectors and hardware platforms. Join this innovative community of developers who are building on this standard and extending it for the future of real-time 3D for the Web. Through cooperative development agreements, the Web3D Consortium has formal liaisons with the ISO, DICOM, OGC, Khronos, IMS and W3C standardization bodies to harmonize diverse technologies for media convergence.

**Participate in our Working Groups, Special Interest Groups and Chapters and contribute towards the evolution of X3D!**

**Drive the evolution of X3D and own your future!**

**Web3D WORKING GROUPS**
- **X3D Architecture**      • **CAD**
- **X3D Earth**      • **Humanoid Animation**
- **Medical**      • **Cultural Heritage**
- **Mixed Augmented Reality**

Web3D.org/working-groups