Web3D.org

Activities Update
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SIGGRAPH CARTO BOF
2022
Who are we: The Web3D Consortium

- Not-for-profit Standards Development Organization (SDO), International, Member driven

- Providing Open International Standards (ISO-IEC) specifications for Real-Time Interactive 3D Graphics
  - Our Standards: X3D, VRML, and HAnim

- Members dedicated to the portability, interoperability, and durability of interactive 3D content
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

Web3D.org
VirtuWorlds Giza (1998-2022)

Multimedia Mashup for WWW:

- Survey drawings + GeoTIFF terrain
- Characters, animations
- Stands the test of Time
Extensible 3D (X3D) Suite of Standards

- Abstract Scenegraph for interactive 3D graphics
  - Describes the X3D content model including transformation and behavior graphs
  - X3D Unified Object Model enables formally generated and quality assured scenes
  - Extensibility mechanism for new node types and features

- File Encodings
  - XML
  - Classic VRML
  - Binary
  - JSON, TTL

- Scenegraph API bindings
  - Javascript
  - Java
  - Python
  - C#
  - C++

Quickstart: https://webx3d.org/

X3D4: Load GLTF; WebAudio
X3D4 : BIG NEWS!

- The last few years we have publicly shared X3D4 draft specifications for community comment and review. We are now under ISO-IEC ballot
  - Numerous improvements for HTML5 integration
  - GLTF and PBR support
  - WebAudio API support
  - Free online video tutorials and demos
- Members continue to innovate X3D applications with real impact:
  - Case studies from Virginia Tech and Versar
- Web3D 2022 in Paris, France this November!
  https://web3d.siggraph.org/
Continuing our explorations into
- Immersive Cartography
- Mirror Worlds
- Location-based graphics

www.vt.edu

https://arc.vt.edu/
X3D Blacksburg
Design & Planning

- **Virtual Tours**
  - 360 video & photospheres
  - Structure.io scans

- **Town Planning** (Sketchup + X3D Blacksburg)
Remote Experiences

See also: [https://vimeo.com/visionarium2018](https://vimeo.com/visionarium2018)

Prof Katie Meaney’s Environmental Design module
US Forest Service Professional Cert

- Pivoted to online training
- USDA Advanced Silviculture Program is usually a 2 week on-site intensive course
- 6 forests, dozens of plots captured w 360-degree photospheres and drone video spheres
VT Forestry News Story: Immersive and annotated study tour videos filmed using a full-hemispherical camera

Presents Overview-and-Detail, spatial properties of site

See also: Web3D 2021 paper on X3D Field Trips for Remote Learning
Location-based Graphics

- HCI Capstone (Seniors Spring 2022) projects: new explorations into Mirror Worlds
  - Prototype concepts through user-centered design
- QR codes bridge physical and informational spaces
  - Multimedia
  - Multiplatform (* phone gyro)
Stroubles Creek Projects

Increasing Watershed awareness & stewardship:

- QR codes and map pins to Web addresses
- X3D + HTML5 presentation
- 360 Videos, images
- Links to other resources
Spout Spring

“...a piece of ground in a healthy climate, a fertile neighborhood with excellent springs thereon...”

-William Black, founder of Blacksburg, in a 1797 petition to the state of Virginia for establishment of the Town.

The abundance of springs in this area helped make Blacksburg a desirable place for settlement. Spout Spring, also known as Painter’s, Palmer’s, and College Spring, serves as one of several headwaters of the Stroubles Creek Central Branch, which flows through and under the town. In 1894 Virginia Agricultural and Mechanical College (now Virginia Tech) bought the Spout Spring property for $50, and it provided water for many Town residences and businesses. The College’s custodians, a laundry student housing, a chemistry and farm buildings. Blacksburg bought this property in 1963, and Spout Spring is now the flagship of the Town’s...
Videosphere Viewing w X3D

To enable first person view on your phone,

- Click the ‘Start Demo’ link at top right
- Look around in Landscape mode
Environmental DNA is an effective tool for calculating marine biodiversity

July 29, 2021 – New research demonstrates that eDNA can be a valuable tool for monitoring California’s kelp forests. eDNA sampling is a method for identifying species of interest—both non-native and native species—for conservation—in aquatic ecosystems without the need to sample the organism. Learn more about the process on our new interactive eDNA web page.
Versar.com

● Global A&E company
● GIS & Site surveys
● Simulation & Planning
● ...
● Web3D Directing Member
● X3D for presentation and collaboration
Versar

- $3DVE = 3D + GIS$
- real-time, online, collaborative 3D facilities and logistics planning for US Navy and Marine Corp
- Lots of underwater and underground assets
- Explore multiple scenarios over WWW (*no install required)
USNA Annapolis

- Coastal remediation and mitigation planning
- Numerous data sources cleaned & registered
- Composed as X3D scenes in HTML5 user interface
Pacific Installation

- Lidar + sonar -> 3D
- Composed as X3D scene in HTML5 user interface
- Lit, Movable objects
- Measurement
- Photospheres
Join our Community!

- Web3D Metaverse BOF tomorrow!
  - 2022 Birds of the Feather (BOF) session on July 26th from 9:00 AM - 10:30 AM Pacific
- Webinars and Tutorials online
- ...
- Listserves
- WG meetings
- Conferences

WWW.Web3D.org
References