X3D Progress and Prospects

Common Problems versus Stable Growth

Federal Consortium for Virtual Worlds (FCVW)

12-14 May 2010

Don Brutzman

Naval Postgraduate School

Monterey California USA

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Our Topics for Today

- Polys: 30,000' overview X3D and Web3D
- Brutzman: Technical rationale and review
- Polys: 4D presentation, Medical study MMVR
- Brutzman: X3D-Edit authoring, teaching
- Colleen, remote: RayGun multiuser demo
- Brutzman: X3D report card for federal use
- Brutzman and Polys: demo DIS network recording and playback, X3D and HTML5
- Questions and discussion

Setting the Stage

Many intellectual and political assets brought us here

Historical background: VRML

Virtual Reality Modeling Language (VRML) began in 1994, seeking to create 3D markup for Web

- Numerous candidates considered by an open community of interested practitioners
- SGI's OpenInventor won the initial competition
- VRML 1.0 developed over the next year
- VRML 2.0 restructured some nodes, added features

VRML advanced to International Standard 14772 by ISO in 1997

XML file encoding

The Extensible Markup Language (XML) is a plain-text format used by many Web languages

- Including Hypertext Markup Language (HTML)

XML is used to define other data-oriented languages

- Thus XML is not a language by itself, rather it is a language about languages, a *metalanguage*
- Common XML basis enables better interoperability, opens a "path of least resistance" for data flow

XML has many benefits and is well-suited for X3D

XML in 10 Points

http://www.w3.org/XML/1999/XML-in-10-points

- XML is for structuring data
- XML looks a bit like HTML
- XML is text, but isn't meant to be read
- XML is verbose by design
- XML is a family of technologies
- XML is new but not that new
- XML leads HTML to XHTML
- XML is modular
- XML is basis for RDF and the Semantic Web
- XML is license-free, platform-independent and well-supported

XML in 10 Points is a key reference for understanding the common underlying design principles underlying the great diversity of XML.

Only 4 pages long – essential reading.

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Web3D Consortium

Web3D Consortium founded in 1998 to protect, support and advance the VRML specification

- http://www.web3D.org

Continued efforts on new technology by multiple working groups led its successor, X3D

- http://www.web3D.org/x3d

Non-profit organization of many stakeholders ensures that X3D remains royalty free, relevant

- Partnership of industry, agency, academic and professional members

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Web3D Consortium - Royalty Free, Open Standards for Real-Time 3D Communication - Mozilla Firefox

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A nonprofit organization that develops and maintains the X3D standard--a 3D file format and runtime specification that is open, royalty free and ISO ratified for transmission of 3D data over networks.

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Workshop on X3D Graphics for 3D Model Interchange at Federal Consortium for Virtual Worlds

May 05, 2010 Federal Consortium for Virtual Worlds (FCVW)
12-14 May 2010, National Defense University (NDU), Washington DC

Web3D Consortium will be presenting a workshop at FCVW on X3D Graphics for 3D Model Interchange in Virtual Worlds on Wednesday, May 12 from 8:00 AM to 11:00 AM.

Presenters:
Don Brutzman Ph.D., Naval Postgraduate School, Monterey CA
Nicholas Polys Ph.D., Virginia Tech, Blacksburg VA
David Colleen, Planet 9 Studios, San Francisco CA

Extensible 3D (X3D) Graphics is the open standard for real-time 3D communication. Developed by the Web3D Consortium and certified by the International Organization for Standardization (ISO), X3D is a royalty-free file format and run-time player specification that is compatible with many 3D technologies. X3D is also designed for reuse of content and archivable publication, making it particularly well suited for government use. Attendees in this hands-on workshop will use several tools and applications for networked X3D virtual environments. Finally a 10-point "report card" will assess X3D suitability readiness for federally sponsored online virtual worlds.

Case Study | What is X3D? | Get X3D | Learn X3D

Featured Case Study

Virtual Santiago de Compostela in X3D Octaga Player

The hearth of the important Spanish 9th century medieval pilgrimage route, Santiago de Compostela, is now available to the general public in 3D using the X3D Octaga Player. The Spanish multimedia company Dualmultimedia in Barcelona has done extraordinary work in modeling and recreating the ancient cultural and religious center. Dualmultimedia has a web distribution license from Octaga, enabling all visitors to use a full version of Octaga Player for interactive 3D viewing.

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3D content for a lifetime: The 14th Web3D Symposium celebrates milestone of innovation & durability

May 20, 2009 The fourteenth annual International Web3D Symposium, to be held at Fraunhofer IGD in Darmstadt, Germany from June 15-17, 2009, will celebrate a decade of innovation and interoperability through the Extensible 3D (X3D) Standard.

The Symposium will showcase Web3D Consortium's standard X3D, the only open, royalty-free and ISO-certified technology available today for interactive 3D graphics on the World Wide Web. Use of X3D systems has increased steadily throughout the world, delivering durable applications in industry, science, medicine, culture, entertainment and education. Indeed, worlds and scenarios authored over ten years ago still run today and are faster than ever.

X3D systems have a proven track record of protecting content and have the process in place to support projects that require their content lifetime to exceed 50 years. Because X3D is a direct evolution of Virtual Reality Modeling Language (VRML), there are models over a decade old that run in the newest X3D players. It is not necessary to excavate the original 3D players to run that content. The business value - the virtual world content - survived, and the investment was protected. The open nature of the Web3D languages protects the content and the rights of the business.

Come see these innovative X3D systems and learn how to protect your 3D content investment for a lifetime. To register for the 2009 Web3D Symposium please visit: http://www.web3d2009.org/registration. X3D systems will also be demonstrated at SIGGRAPH 2009 in New Orleans, USA. Join the Web3D Consortium and become a part of this evolving standard.To join, visit us at: http://www.web3d.org/membership/join.

X3D_for_a_Lifetime_Press_Release.pdf

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Featured Case Study

CAVE Immersive experience with up to 75 % reduced cost and online testing

Many big companies today are using Cave Systems, which offering many advantages for instance in CAD development, design and simulation of logistical processes. Whereas the technology has been already established, most of smaller companies do not benefit from advantages due to high costs of cave.

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- The future of 3D on the Web by Alan Hudson at Siggraph 2008
- Web3D Tech Talk
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Player and Tool support for X3D components

Feb 10, 2009 The Extensible 3D (X3D) Graphics standard has many capabilities. X3D components are modular collections of nodes that make it easier for software to gradually implement the full range of X3D capabilities. Authors can also indicate what components are needed in an X3D scene in order to ensure that proper support is provided at run time.
The Player table records support for the official X3D components by each of the various X3D Players.
The Tool table records support for the official X3D components by each of the various X3D authoring tools and X3D conversion tools.

These tables are maintained by the X3D Working Group and member companies in the Web3D Consortium.
The X3D Resources page also provides lots of additional information about X3D.

Please Contact Web3D Consortium if you want to learn more or report an update.

Category: General News | Permalink

X3D-Earth Working Group Meeting - Call for Participation

Feb 07, 2009 Web3D Consortium members are cordially invited to participate in our next X3D Earth Working Group meeting, to be held at the Monterey Bay Aquarium Research Institute in Moss Landing, California on Thursday and Friday, March 5th and 6th 2009. Attendance is open to Web3D Consortium Members, and invited quests,

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Featured Case Study

Coperion 3D - A Virtual Factory on the Tabletop

The Coperion Group is planning and producing plants and systems for the plastics industry. The presentation at Coperion's booth at K Fair in Dusseldorf consisted of Fraunhofer IGD's multi-touch table and an impressive 8-meter wide high definition projection mirroring the table's image. With this application Coperion demonstrated their core-competencies to the markets and complex processes in a plant for bulk material handling via Virtual Reality. InstantPlayer and InstantCluster were used to render the interactive real time 3D visualisation.

Read more

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X3D Specifications

X3D graphics is defined by a set of specifications

These "specs" are developed by working-group volunteers as part of the Web3D Consortium

- Nonprofit organization with business, nonprofit, academic and professional members
- http://www.web3D.org
- Efforts include editing, implementing and evaluating

Specification results reviewed and approved by International Organization of Standards (ISO)

- http://www.iso.ch

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Community rules

Thanks to an open process, IPR-protection rules and steady innovation by Web3D members, new X3D features continue to evolve and grow into great capabilities

Lots of working groups have formed, worked, faded, regrouped and succeeded

Web3D members and public mailing lists still keep these successes building, year after year

Intellectual property rights (IPR)

Web3D and W3C have similar policies

- Any known patented technology must be declared by members prior to consideration in safe haven of working groups
- Any patented technology contributions must be licensed on a royalty-free (RF) basis for inclusion in an openly used Web standard http://www.web3d.org/membership

Caveat: any legal problem can be solved, but only in advance

Open source: optional

Open for any use, without license fees

- Free = freedom to innovate, free to fix!
- Not necessarily free cost
- More like “free puppy”, not “free beer”

Common shared example implementations

- Can provide a self-sustaining business model for continued activity, improvement
- Can break logjams when company participants can’t resolve technical issues

Digital rights management (DRM)

X3D's XML and Compressed Binary encodings allow use of W3C's Security recommendations

- XML Encryption
- XML Digital Signature (for authentication)

demonstrated in NPS thesis

- XML Public key infrastructure

DRM is now feasible

- More uses than Hollywood-commercial exist
- See Sun's DReaM project http://www.openmediacommons.org

Common 3D challenges

Interoperability - what's the difference?

Multiple paths, but often confused as equal

Standard: proven process for content interoperability, scalability, compatibility, licensing, growth, success

Specification: Algorithm descriptions, necessary detail

- But: might hide royalty problems, such as GIF imagery debacle in 1990s

Open source software: pile of (maybe repeatable) code

- But: usage licensing is not same as source-code licensing

Market share dominance: biggest competitor wins?

- Companies (or at least investors) hope to "own" 3D
- But: many defunct companies, dead-end technologies
- Everyone ends up with much smaller market than the Web

Is your 3D technology stable?

Lively by Google BETA

Download Lively

Rooms

Catalog

Lively no more

After careful consideration, we have decided to shut down Lively.

Since Lively's launch, we have been delighted to see the creative ways you've used the product. We enjoyed hanging out in Jen's coffee house, and checking out the Brasil Party room. We got a kick out of the YouTube videos in a variety of languages telling stories about your avatars. And we've been awed by the elaborate rooms that you've constructed, using mosaic tiles and photo gadgets in novel ways.

We will shut down Lively on December 31, 2008. Embedded rooms in blogs and other web pages will continue to show an image, but users will no longer be able to enter Lively rooms and interact.

Between now and the end of the year we encourage you to capture all your hard work by taking videos and screenshots of your rooms. Thank you for sharing this experience with us. We've learned a lot about how users interact in rich social environments, and we hope you've enjoyed your time with Lively.

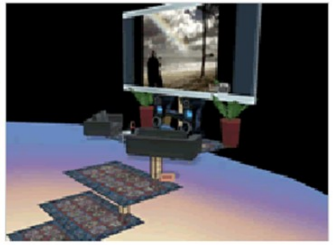
For more information, please read our blog post.

Here's a shout-out to some of the rooms we particularly enjoyed:

Café Racer

Sexy Beats

Space... The Final Frontier...



Discussion forum Help Getting Started Terms

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Is your 3D technology stable?

Lively by Google BETA

Lively is closed.

Avatars and rooms are not available as of January 1, 2009.

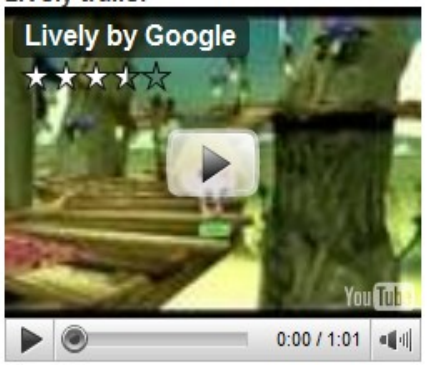
Lively by Google?

Lively was a network of avatars and virtual rooms created and decorated by its users. Google launched Lively on July 8, 2008 as an experiment in providing people with more ways to express themselves on the Web.

Lively's users created thousands of cafes, bars, discos, tropical islands, treehouses, space stations, galleries, bedrooms and more. Lively's users shared their rooms with people from all over the real world, meeting and chatting with each other via their customized avatars.

The experiment ended December 31, 2008.

Lively trailer



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Wonderblog

Project Wonderland Virtual World Toolkit Blog

blogs.sun.com Weblog About Login

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Good News and Bad News

I know everyone likes to get the bad news over with first, so I'll start with that. We found out on Friday that development resources are no longer being applied to Project Wonderland.

The good news is that those of us who have worked so hard to bring this project to life still wholeheartedly believe in it. A core group of the Wonderland team intends to keep the project going. We will be pursuing both for-profit and not-for-profit options that will allow us to become a self-sustaining organization. Having anticipated this possible outcome, we already have some promising irons in the fire.

As a first step in this next phase of the project, we will be releasing a Wonderland v0.5 Preview 3 release early next week.

There is so much great momentum behind Wonderland. To our knowledge, there are currently three companies offering Wonderland-related products, and eight companies offering Wonderland world-building services. There are countless exciting university projects and a number of corporations that have seen the advantages of Wonderland over other platforms. We are seeing new people posting on the forums almost every day.

Any concrete help you can give us would, of course, be welcome, but what we are asking for now is your moral support and

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Oracle: destroyer of virtual worlds

Lights out for Sun's Project Darkstar

By **Austin Modine in San Francisco** • **Get more from this author**

Posted in Developer, 4th February 2010 06:02 GMT

Free whitepaper – What Exchange can't do - and Dell can

Another of Sun Microsystem's almost-practical projects for Java has been shuttered now that Oracle holds the purse strings. Project Darkstar, an open-source application server catered specifically for massively multiplayer online games, will no longer receive Snoracle funding.

The news was announced yesterday with a post to the Project Darkstar community forum.

Loosely, Project Darkstar is open-source middleware written in Java aimed at helping developers create massively scalable persistent virtual worlds. The project later expanded its aim to include social networking applications as online

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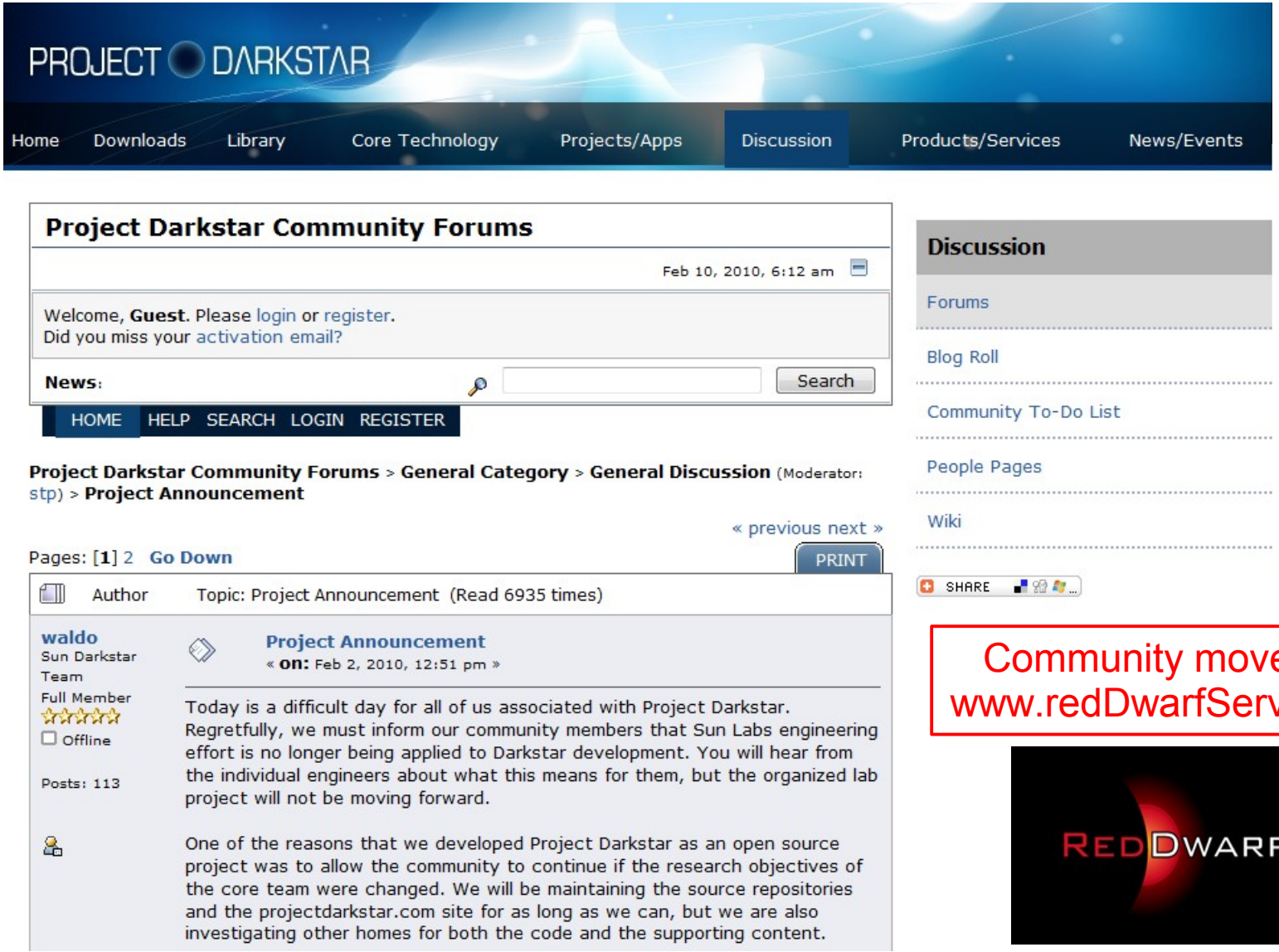

Community moved to www.redDwarfServer.org

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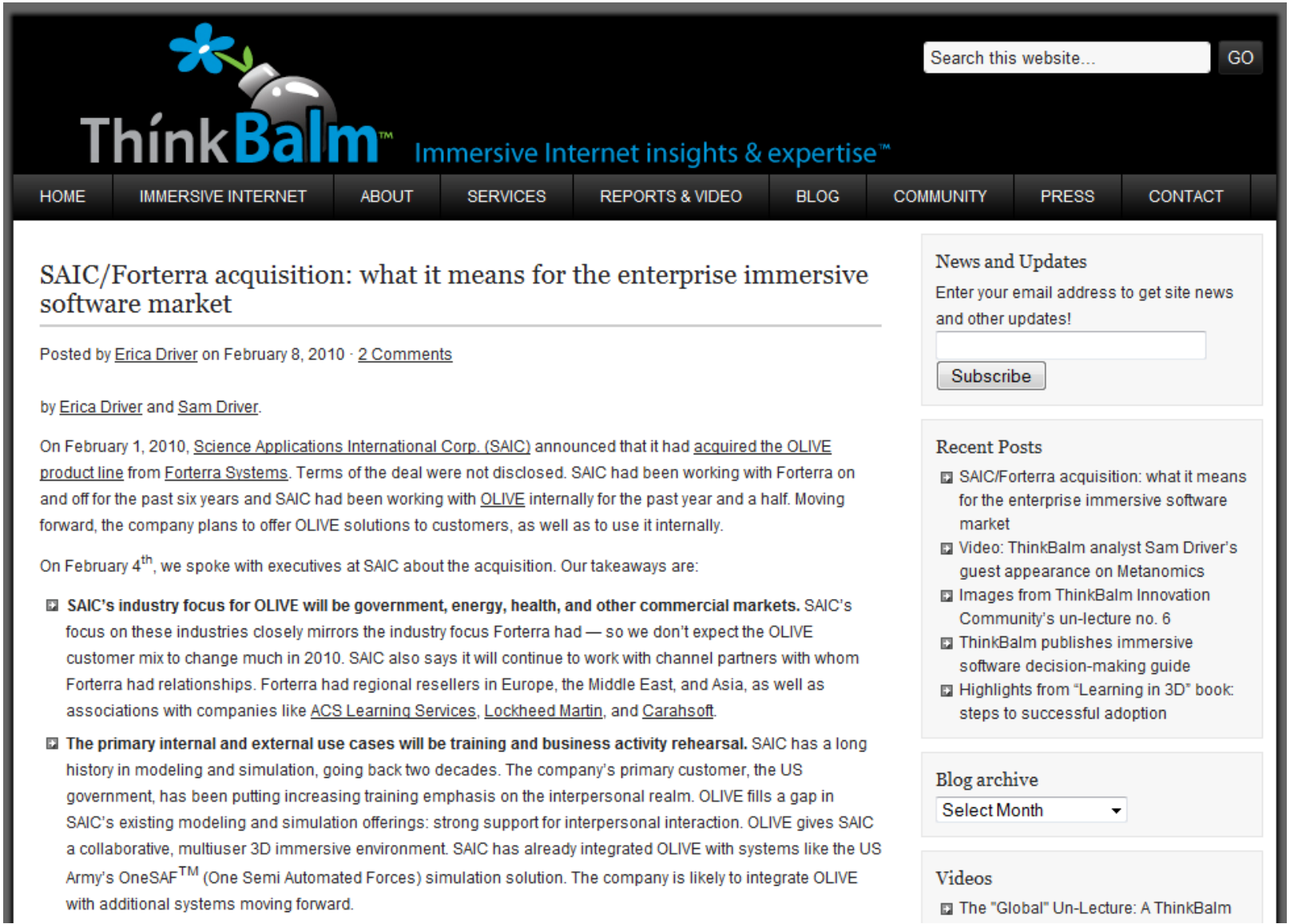

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SAIC/Forterra acquisition: what it means for the enterprise immersive software market

Posted by Erica Driver on February 8, 2010 · 2 Comments

by Erica Driver and Sam Driver.

On February 1, 2010, Science Applications International Corp. (SAIC) announced that it had acquired the OLIVE product line from Forterra Systems. Terms of the deal were not disclosed. SAIC had been working with Forterra on and off for the past six years and SAIC had been working with OLIVE internally for the past year and a half. Moving forward, the company plans to offer OLIVE solutions to customers, as well as to use it internally.

On February 4th, we spoke with executives at SAIC about the acquisition. Our takeaways are:

- **SAIC's industry focus for OLIVE will be government, energy, health, and other commercial markets.** SAIC's focus on these industries closely mirrors the industry focus Forterra had — so we don't expect the OLIVE customer mix to change much in 2010. SAIC also says it will continue to work with channel partners with whom Forterra had relationships. Forterra had regional resellers in Europe, the Middle East, and Asia, as well as associations with companies like ACS Learning Services, Lockheed Martin, and Carahsoft.
- **The primary internal and external use cases will be training and business activity rehearsal.** SAIC has a long history in modeling and simulation, going back two decades. The company's primary customer, the US government, has been putting increasing training emphasis on the interpersonal realm. OLIVE fills a gap in SAIC's existing modeling and simulation offerings: strong support for interpersonal interaction. OLIVE gives SAIC a collaborative, multiuser 3D immersive environment. SAIC has already integrated OLIVE with systems like the US Army's OneSAF™ (One Semi Automated Forces) simulation solution. The company is likely to integrate OLIVE with additional systems moving forward.

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SAIC Purchases Simulation & Collaboration Product Line From Forterra Systems Inc.

Company Adds On-Line Interactive Virtual Environment (OLIVE(TM)) to its Simulation Portfolio

MCLEAN, Va. and SAN DIEGO, Feb 01, 2010 /PRNewswire via COMTEX News Network/ -- Science Applications International Corporation (SAIC) (NYSE: SAI) today announced it has purchased Forterra Systems Inc.'s On-Line Interactive Virtual Environment (OLIVE(*TM*)) product line, including all names, trademarks and licenses.

OLIVE is a market leading software platform that enables customers to deploy their own persistent and secure 3D Virtual Worlds where users can collaborate over networks. OLIVE's real-time virtual world technology enables interpersonal interaction through life-like human avatars. These avatars are three dimensional virtual representations that provide a human-machine interface for networked computers, enabling remote users to experience, collaborate, train, and learn. The platform currently supports virtual world implementations in healthcare, financial services, energy, transportation, retail, government, and higher education markets. OLIVE adds a branded platform to SAIC's simulation portfolio, and enhances the company's offerings to an expanding simulation marketplace.

"We look forward to working with current and future OLIVE license holders to support and extend the platform," said Bev Seay, SAIC senior vice president and business unit general manager. "We see virtual worlds as the direction of the future in modeling and simulation - emphasis on interpersonal interaction and collaboration enables us to take our products in new directions, and to new markets."

Approximately 12 employees will join SAIC from Forterra, and will become part of SAIC's Analysis, Simulations, Systems Engineering & Training Business Unit led by Seay. These employees will continue to support the OLIVE platform from locations in San Mateo, Calif., and Orlando, Fla.

"This deal will enable us to continue building the OLIVE platform and our related business, as well as shape the future market of

Stability is important!

- Most 3D graphics authors create lots of wonderful content, but it tends to "time out" and break after 2-3 years, simply becoming no longer usable due to software changes, company acquisitions or shutdowns, etc.
- Creating quality 3D content is expensive, both in time and software costs
- Something just as expensive: recreating that same 3D content when the underlying commercial technology no longer works

How can X3D help?

X3D Capabilities video

BitManagement Software GmbH, Germany

Web Interoperability

- XML and the Web: many ways to convert and adapt information into X3D
- X3D is the 3D publishing format for the Web
- Matches mainstream enterprise information technology: web services, chat, http, etc.
- Numerous importers and converters
- Numerous online resources at web3d.org
- HTML 5 working group collaboration
- Royalty-free standards do not "time out" ☺

X3D Specification Progress

- ISO approved Scene Access Interface (SAI) specification update, published online
- Lots of clarifications and spec improvements
- Steady support by 10-14 nations annually
- Proven process permits steady progress with no list of broken or deprecated features
- Membership fees help support specification editing, other work performed by members
- Member efforts remain critically important

X3D v3.3 specification plans

- Feature list maintained on X3D Member Wiki
- Prerequisites: need to finish X3D v3.2 examples and implementation support
  - Collecting example X3D scenes for testing, confirming multiple implementations work
- Medical group: volume visualization and annotations
- Camera nodes for photographic effects, storyboarding, offline rendering, machinima
- Update XML validation, other features

International interoperability

- Full support for various human languages, including left/right/up/down text alignment
- Supports W3C internationalization (i18n)

- Web3D international membership, expertise
- Korea Chapter proposing new technology

- Considering 2010 workshop with W3C Web Accessibility Initiative (WAI)

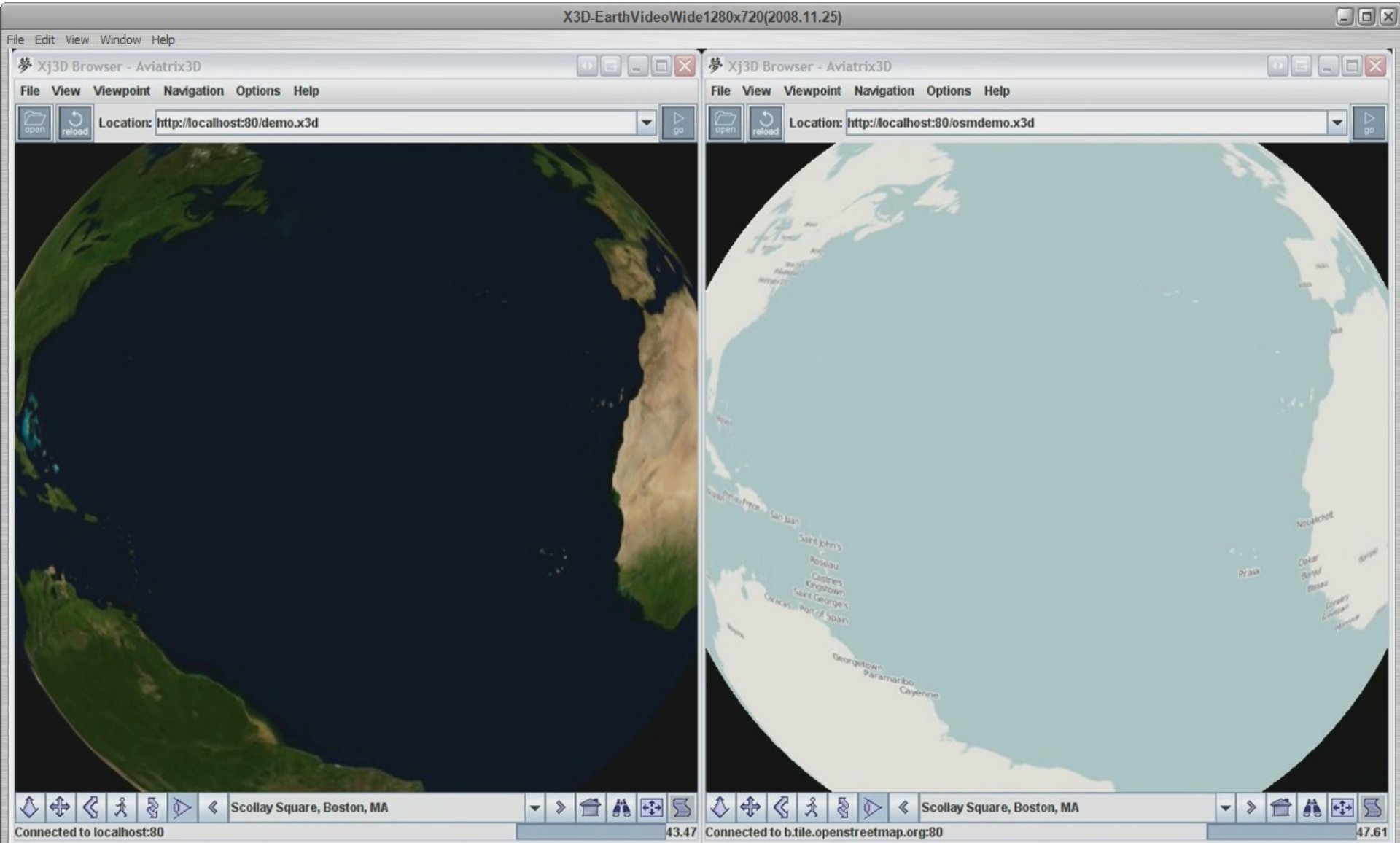
CAD Interoperability

- Boundary Representations (B-Reps) nodes
  - Draft CAD specification update held by Yumetech
- ISO TC184 technical evaluation details show X3D fully competitive with other approaches
  - (Collada, U3D, JTOpen, some dropped out)
  - Close 2nd-place finish, 82% of 360 points
- Good prospect of unlocking many thousands (millions?) of existing engineering models using Parametric History authoring log
  - Pranveer Singh KAIST to present progress

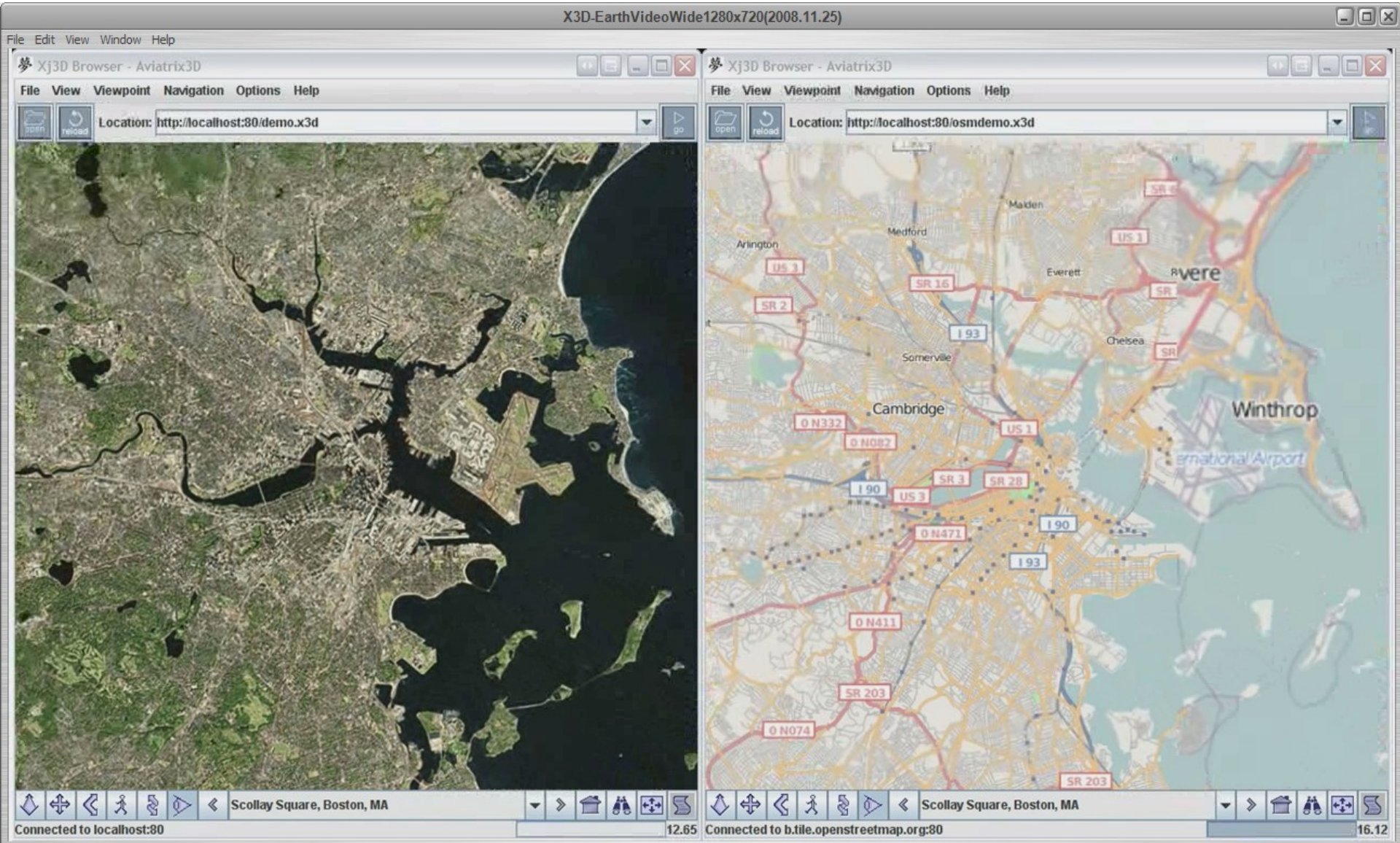
GIS Interoperability

- X3D Earth: "mash up" globe data on-the-fly from OpenStreetMap and OpenAerialMap
  - OpenAerialMap restructuring now in progress
- Converting outputs from Open Geospatial Consortium (OGC) formats and tools
  - Joint meeting with OGC in progress this week
- NPS is building full-fidelity globe for DTED datasets using a supercomputer-class cluster
  - Will repeat for other datasets, others are welcome to use our code/assets

X3D Earth OpenStreetMap exemplar



X3D Earth OpenStreetMap exemplar



Network interoperability

- X3D Anchor node functionality matches HTML anchor element: jump or bookmark
  - Planning new capability: refresh/interval, similar to HTML refresh, to improve server-side interaction
- Support slow to emerge for IEEE Distributed Interactive Simulation (DIS) protocol
  - Player/recorder in X3D-Edit
  - Open source OpenDIS codebase Java, C++, C#, and Objective C (for iPhone)
  - Integration with Sun's *Darkstar* massive multiplayer online game (MMOG) server – NPS thesis

File format interoperability

- Scene graph structures are quite common
- Many converters exist for X3D and VRML
- Converter list maintained in X3D Resources
  http://www.web3d.org/x3d/content/examples/X3dResources.html#Conversions

- Premier conversion tool Okino Polytrans spent time and effort to rearchitect their software using X3D as central basis
  - Because X3D scene graph so common, consistent, and well-defined compared to other technologies
  - http://www.okino.com/conv/imp_vrml.htm

X3D Resources - Mozilla Firefox
File Edit View History Bookmarks Split Tools Help
http://www.web3d.org/x3d/content/examples/X3dResources.html#Conversions
Wikipedia (en)

Conversion and Translation Tools

- Okino Polytrans is the premier industry translation tool that can convert many many different file formats (including Collada) to and from X3D, VRML97 and VRML 1.0.
- Xj3D Open Source for X3D/VRML97 includes a command-line X3D translator between XML encoding (.x3d), Classic VRML encoding (.x3dv) and VRML97 encoding (.wrl). These capabilities are also embedded under *Import* and *Export* menus in X3D-Edit. Xj3D can also import Collada files.
- X3D-Edit exposes all Xj3D capabilities. It can also import, edit and validate Collada files.
- InstantReality X3D encoding converter is an online translator between ClassicVrml encoding (.x3dv) or VRML97 encoding (.wrl) to XML encoding (.x3d).
- XSLT stylesheets convert .x3d scenes into alternate formats and encodings. These stylesheets (and corresponding batch files) are bundled in X3D-Edit.
  - Conversion to ClassicVRML (`.x3dv` encoding): X3dToX3dvClassicVrmlEncoding.xslt, X3dToVrml97.xslt -fileEncoding=ClassicVRML and X3dToX3dvClassicVrmlEncoding.bat
  - Backwards compatibility with VRML 97 (`.wrl` encoding): X3dToVrml97.xslt and X3dToVrml97.bat
  - Tagset pretty-printing in XHTML (`.html` encoding), includes cross linking of DEF/USE/ROUTE/etc.: X3dToXhtml.xslt and X3dToXhtml.bat
  - The X3D stylesheets are checked into version control at http://x3d.svn.sourceforge.net/viewvc/x3d/www.web3d.org/x3d/stylesheets
- BitManagement capabilities include BS Converter for 3ds max and BS Converter for Blender.
- NIST VRML to X3D Translator is written by Qiming Wang. The X3D-Edit 3.1 distribution includes an updated version of the Translator (also .zip and Javadoc) as a bundled source/jar.
- Blender Model Export To X3D using X3D-Edit
- Chisel VRML Optimisation Tool with new version autoinstaller and documentation provided by Halden Virtual Reality Centre. Originally built by Trapezium and maintained by NIST.
- The SwirlX3D Translator is an enhanced version of the Viewer that permits Collada and 3DS files to be imported into VRML or X3D.
- Vivaty has excellent utilities and converters for Google Earth KML/Sketchup, Autodesk 3DS Max, Autodesk Maya, and Unreal. Vivaty Studio also includes Collada import.
- Accutrans 3D by MicroMouse Productions provides accurate translation of 3D geometry between the file formats used by many popular modeling programs.
- Project Rawkee: Open-Source X3D Plugin for Maya by the Archaeology Technologies Laboratory (ATL) of North Dakota State University (NDSU).
- Unreal Realm of Concepts: Unreal to X3D Exporter by Dave Arendash
- VRML 1.0 to VRML97 Converter by Octaga
- Anark is able to export product data into high-precision B-rep and lightweight mesh formats including SolidWorks, Inventor, ACIS, CATIA V4/V5, Parasolid, STEP, NX (formerly Unigraphics), IGES, COLLADA, DWF, X3D, and VRML.
- MeshLab is an open source, portable, and extensible system for the processing and editing of unstructured 3D triangular meshes.
- view3dscene supports VRML/X3D, Collada, OpenInventor 1.0, 3d Studio Max 3DS, Quake 3 MD3, Wavefront OBJ and Videoscape GEO.

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Future interoperability

Liaisons with partner standards organizations

- International Standards Organizations (ISO)
- World Wide Web Consortium (W3C)
- Open Geospatial Consortium (OGC)
- DICOM medical standards for visualization
- The Khronos Group (Collada, WebGl)

- Archival use over long term: maintain backwards compatibility with existing X3D

X3D Mobile Progress

- Multiple different implementations
  - BitManagement, Fraunhofer, Planet9, others
- Consider a new X3D Mobile Profile, perhaps matching X3D Interactive Profile + scripting
- Korea Chapter announced ISO study group
  - Busan Korea, 28-30 June 2010
  - Present results at SIGGRAPH BOF meeting, July LA
- Needed: one or more champions to move these possibilities forward as working group

Web3D Conference locations

- Cosponsored with SIGGRAPH, Eurographics
- 2009: Darmstadt Germany, 70 attendees, hosted by Fraunhofer
- 2010: Los Angeles, colocate with SIGGRAPH
  - 24-25 August 2010
  - Marcello Zuffo chair, University of Sao Paolo
  - Review of paper submissions in progress
- 2011: Paris France, hosted by EDF (Electricite de France)
- 2012: Back in U.S., location TBD

Event calendar 2010

- Open Geospatial Consortium technical meeting, San Francisco January
- Web3D Conference Los Angeles CA, 24-25 July
- SIGGRAPH 2010 Los Angeles California, 25-29 July
- SIGGRAPH ASIA 2010 Seoul Korea, 15-18 December

The Web3D 2010 Conference | Web3D 2010 - Mozilla Firefox
File Edit View History Bookmarks Split Tools Help
http://conferences.web3d.org/web3d2010/
Wikipedia (en)

WEB3D 2010

24 - 25 JULY 2010
15TH INTERNATIONAL CONFERENCE ON 3D WEB TECHNOLOGY

- Call for Papers
- Organizing Committee
- Venue
- Conference Program
- Author's Information
- Registration
- Sponsorship Opportunities
- Web3D ART 2010

Latest News

Registration Fees

Check Registration Fees here

posted on: Apr 26 - 2010

Extended Deadline

Extended Paper Submission Deadline: May 3rd, 2010

posted on: Apr 23 - 2010

The Web3D 2010 Conference

The Web3D Consortium is a member-funded industry consortium committed to the creation and deployment of open, royalty-free standards that enable the communication of real-time 3D across applications, networks, and XML web services. The Consortium works closely with the ISO, MPEG and W3C standardization bodies to maximize market opportunities for its membership.

The annual ACM Web3D Conference is a major event which unites researchers, developers, entrepreneurs, experimenters, artists and content creators in a dynamic learning environment. Attendees share and explore methods of using, enhancing and creating new 3D Web and Multimedia technologies such as X3D, VRML, Collada, MPEG family, U3D, Java3D and other technologies. The conference also focuses on recent trends in interactive 3D graphics, information integration and usability in the wide range of Web3D applications from mobile devices to high-end immersive environments.

Fifteenth in the series, the 2010 ACM International Web3D Conference will address a wide range of topics about 3D on the World Wide Web and on Multimedia Devices. Topics include: tools, object retrieval, rendering, modeling, distributed virtual environments, exposing large-scale databases, Web-wide human-computer interaction, and innovative applications.

The Web3D 2010 Conference will present the Web3D ART Exhibition. The Web3D ART spins the boundary between art and science. The Web3D ART group will present the Web3D ART retrospective as well as the exhibition of new Virtual Storied Worlds and Poetic Spaces creations. Students, recent graduates, or those preparing to enter college are encouraged to submit work themed on poetry using interactive 3D technology.

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Teleconferences every week

X3D group alternates with X3D-Earth group

- Wednesday mornings
- 08-0900 pacific, 16/17/1800 European time
- Also Monday afternoon U.S., Tuesday morning Korea

Progress reports by various implementers, also discuss technical issues of common interest

These provide tremendous value to everyone

Conclusions

Web-based X3D interoperability suitable for collaborative, complementary work

Meaningful production and distribution of high-end X3D graphics can become commonplace

Royalty-free Web standards protect investments

Interoperability efforts (hard work!) provides progress for members + everyone using Web

Other Moving Targets

Collada comparison

Collada focused on model asset portability among authoring tools

- Not a scene graph
- Not a run-time definition for user interaction
- Not focused on Web-compatible delivery

Khronos.org produces royalty-free standards but membership is only for industry companies

- Not government, academia, individuals
- Some cooperation with Web3D but limited

Importers and converters available for X3D

WebGL comparison

- WebGL is OpenGL rendering layer, written in Javascript for use by Web browsers
- High-performance browser Javascript will be commonplace over next year (hooray!), but
- How many folks are graphics programmers?
- Not clear whether WebGL programs will be runnable natively in Internet Explorer, since Microsoft products are based on DirectX

- X3D players ride on top of these solutions

Google O3D

O3D is a GPU shader language by Google, providing an application programming interface (API) for advanced programming.

- http://code.google.com/apis/o3d
- http://code.google.com/p/o3d

"The Chromium Blog has announced that O3D, formerly a plugin-based system for rendering 3d in a browser, is instead becoming an engine for WebGL, using Javascript. And the bits that can't be done in Javascript? Well, they will just move into the browser.

The JavaScript implementation of O3D is still in its infancy, [...]" – Chromium blog, 7 May 2010

O3D Plug-in API - Google Code - Mozilla Firefox

File Edit View History Bookmarks Split Tools Help

http://code.google.com/apis/o3d/

My favorites ▾ | English ▾ | Sign in

Google code

Search

e.g. "ajax apis" or "open source"

O3D Plug-in API (Deprecated)

Home Docs FAQ Blog Forum Terms

What is O3D?

O3D is an open-source web API for creating rich, interactive 3D applications in the browser. This API was originally shared at an early stage as a browser plug-in but has evolved into a JavaScript library on WebGL. Most of the information in this site pertains to the plug-in version of O3D. You can find more information on the WebGL implementation in the open-source project hosting site.

Note: **A JavaScript implementation of the O3D API using WebGL replaces the original O3D plug-in. Read more about this new open-source library.**

Get involved

- Read the Technical Overview and Developer's Guide to learn the basics.
- View the Samples.
- Join the O3D developer groups to provide feedback.

Submit your O3D application for inclusion in the Community Gallery.

Featured video

"Grand cycle of reincarnation"

There have been many years (three decades actually) of application programming interface (API) evolution in 3D graphics.

Find: Next Previous Highlight all Match case

Questions and Discussion

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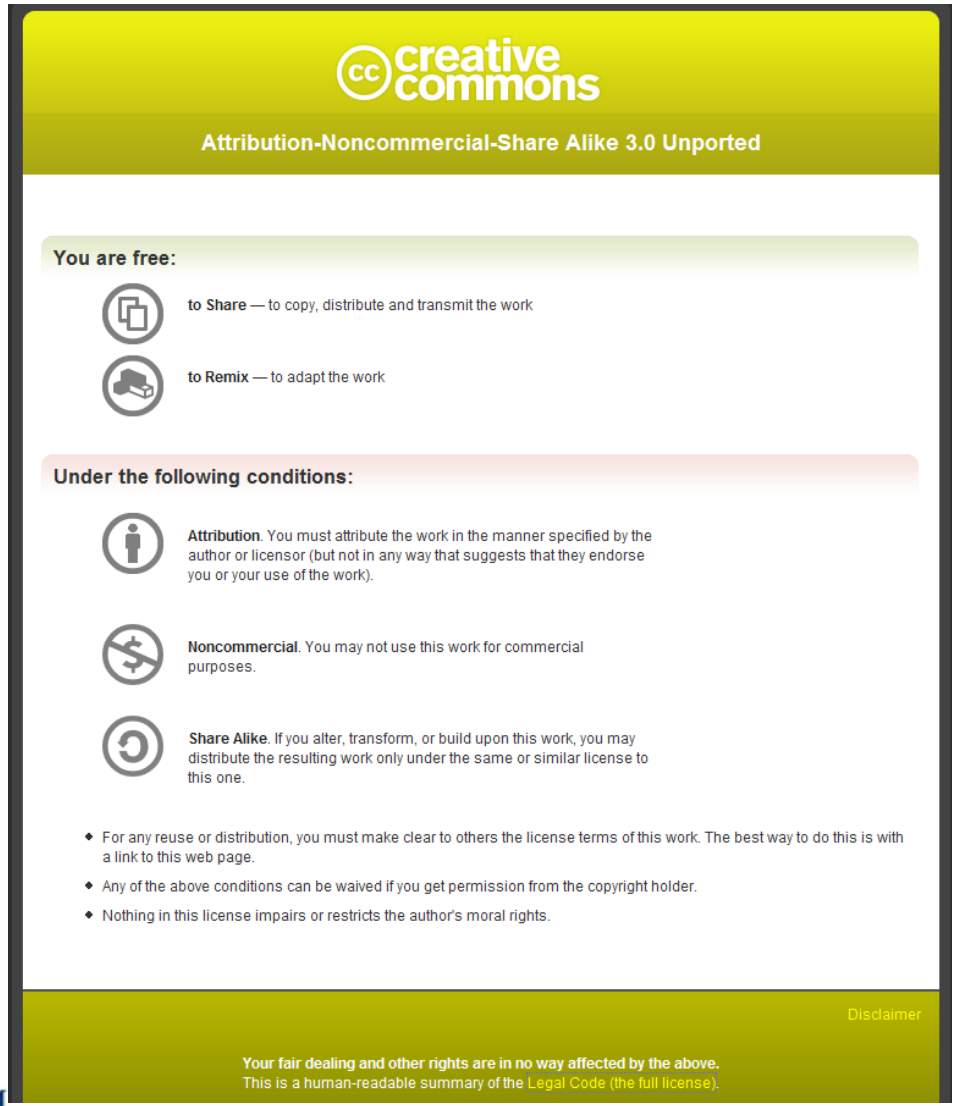

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