

Call for participation

X3D Earth Working Group Meeting

Creating Solutions for navigational precision and terrain tile management

Thursday and Friday, 5 – 6 March 2009



Monterey Bay Aquarium Research Institute

7700 Sandholdt Rd

Moss Landing, California, USA

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. MBARI has graciously agreed to be our host for this meeting on Thursday and Friday, March 5th and 6th 2009.

Attendance is open to Web3D Consortium Members, and invited guests, and is subject to the pre-declaration, safe-haven requirements of the Web3D Consortium Intellectual Property Rights (IPR) Policy. Prospective members are invited to contact Anita Havele, Web3D Executive Director (anita.havele@web3d.org) for more information. Preference will be given to those who have submitted short papers offering solutions to the two nascent problems the working group has identified:

Problem #1: Requirement for a single GeoOrigin

In the original GeoVRML implementation the concept of GeoOrigin was introduced to improve spatial positioning and navigational precision within a small region on the globe. This allowed early implementations to work with the existing VRML browsers. With our working group's engagement with X3D browser developers we now have the opportunity to completely eliminate the need for GeoOrigin. The key is in letting the browser calculate its own offsets from a local viewpoint location for passing single-precision resolvable coordinates off to the graphics pipeline. This has been termed "floating origin" and has been written up in Chris Thorne's PhD dissertation. For more information please see: <http://www.floatingorigin.com/>.

Papers addressing this problem should indicate the attendee's views on the tractability of implementing a floating origin in X3D browsers.

Problem #2: Requirement for sequential chain of quad-tree terrain tiles with GeoLOD

Any realistic X3D terrain model of the Earth can have up to 20 levels of detail. To currently implement level of detail management in X3D GeoSpatial the content author uses the GeoLOD node, which has four fields for the four child tiles. In order for the browser to load higher resolution tiles it must have first loaded the parent tile. This presents a serious performance issue for the viewer who wishes to navigate from "space-to-face". The viewpoint may quickly move to a few hundred meters above city streets, but the browser is busy loading all the intervening tiles and their children before the high-resolution tiles can be presented. There are many options for short-circuiting this process and improving the viewer's experience. Potential solutions include (but are not limited to):

- Embedded metadata communicating tile resolution and bounds
- Recommended practices for creating and delivering terrain tile sets
- Definition of a client-server communications protocol
- Employ existing tiling specification

Please submit potential solutions in the form of a one or two page paper to one of the contacts listed below before 25 February 2009.

Map



Agenda

Wednesday 4th of March 2009

12.00 Member meeting at NASA Ames
18.00 Dinner

Thursday 5th of March 2009

9.00 Light breakfast at MBARI - Pacific Forum.
9.20 Welcome and introduction to facilities...Mike McCann
9.30 X3D Earth Workshop Overview...Don Brutzman or Mike McCann
The two problems we are here to address
9.45 Problem #1: GeoOrigin
10.30 -- break --
12.00 Lunch – Pacific Forum
12.30 Tour of MBARI
13.30 Problem #2: Terrain Tile management patterns
15.00 -- break --
15.15 Terrain Tile management discussions

17.00 Return to Hotel
19.30 Dinner at Montrio Bistro in Monterey

Friday 6th of March 2009

8.00 Light breakfast at MBARI Pacific Forum.
8.30 Problem #2: Terrain Tile management
10.00 -- break --
12.00 Lunch – Pacific Forum
12.30 Problem #2: Terrain Tile management
15.00 -- break --
14.00 Planning for next working group meeting in Darmstadt, Germany June 15 2009

Location Information

Monterey Bay Aquarium Research Institute
7700 Sandholdt Rd
Moss Landing, California 95039

Contact: Mike McCann (MBARI): +1-831-775-1769

Please check in at the front desk at the main Science, Engineering and Administration building.

Lodging

A block of rooms has been reserved Casa Munras Hotel in Downtown Monterey
<http://www.hotelcasamunras.com> 831-375-2411 or 800-222-2446.

Rooms will be available at a special rate until 18 February 2009; when making your reservation ask for the rate for the MBARI event scheduled in March. Parking and high-speed Internet are included in the room rate of \$109 plus tax.

Dinner

Dinner will be held at Montrio Bistro at 7.30 on Thursday night.
414 Calle Principal, Monterey, CA 93940, (831) 648-8880

Dates

20 February 2009 – position papers sent to mccann@mbari.org
4 March 2009 – Web 3D Consortium member meeting at NASA Ames
5-6 March 2009 – X3D-Earth working group meeting at MBARI

About X3D Earth

X3D Earth's vision is to make it easier to create and use 3D spatial data. Our mission is to promote spatial data use within X3D via open architectures. Web site: <http://web3d.org/x3d-earth>.

Points of Contact

Don Brutzman, NPS MOVES Institute, 831-656-2149, brutzman@nps.navy.mil
Mike McCann, MBARI, 831-775-1769, mccann@mbari.org
Anita Havele, Web3D Consortium, 248-342-7662, anita.havele@web3d.org