Web3D Standardization Meeting Minutes

Korea Chapter

July 25, 2016

Date and Location

July 25, 2016 2pm to 5 pm (at SIGGRAPH 2016)

Hilton Anaheim Hotel, Anaheim, California, USA

Attendees

Myeong Won Lee (The University of Suwon, Korea)
Don Brutzman (Naval Postgraduate School, USA)
Nicholas Polys (Virginia Tech, USA)
Richard F. Puk (Intelligraphics Inc., USA)
Anita Havele (Web3D Consortium, USA)
Roy Walmsley (Web3D Consortium, UK)
Christophe MOUTON (EDF, FR)
Jean Brange (Boost, FR)
Clipton Dawson (GreenLight VR, USA)
John Richardson (GFC, USA)
Soonhung Han (KAIST, Korea)
Kwan-Hee Yoo (Chungbuk National University, Korea)
Imgyu Kim (KAIST, Korea)
Woontaek Woo (KAIST, Korea)
Sangkwon Jeong (Joyfun, Korea)
Hyeon-Woo Nam (Dongduk Women's University, Korea)
Jinho Jeong (Greencloud, Korea)
Daeil Seo (KIST, Korea)
Byounghyun Yoo (KIST, Korea)

Agenda

- Korea chapter activities (Myeong Won Lee and Kwan-Hee Yoo)

- Humanoid animation (Myeong Won Lee)

- H-Anim facial modeling (Jung-Ju Choi and Myeong Won Lee)

- C++/C# language bindings (Roy Walmsley and Myeong Won Lee)

- X3D physical sensors (Myeong Won Lee and Kwan-Hee Yoo)

- Projective texture mapping (Kwan-Hee Yoo)

- Data-driven visualization (Kwan-Hee Yoo and Byounghyun Yoo)

- Webizing 3D contents and autostereoscopic displays (Byounghyun Yoo and Daeil Seo)

- Status of ISO/TC184/SC4 standards related to X3D-CAD (Soonhung Han)

- Web-based exchange of procedural 3D CAD models between TransCAD of KAIST and X3DOM (Imgyu Kim and Soonhung Han)

- Extended material node for representing haptic properties in virtual/augmented reality (Gerard J. Kim)

- Representation for image based environment rendering (Gerard J. Kim)

- HMD based VR Service Framework (Kwan-Hee Yoo)

- Mobile VR (Myeong Won Lee)

Minutes

- Myeong Won Lee called the meeting to order at 2:00 pm, July 25, 2016

- Myeong Won Lee introduced the history of the Web3D Korea Chapter and standardization topics that are in progress. Kwan-Hee Yoo introduced SC24 Korea and its working groups for ISO standardization and talked about the relationship between SC24 Korea and Web3D Korea.

- Myeong Won Lee presented an overview and updates on H-Anim humanoid animation standardization. ISO/IEC 19774-1 H-Anim Architecture, and 19774-2 H-Anim Motion Capture were briefly introduced, focusing on updates in H-Anim Version 2.0, which is being progressed.

- Myeong Won Lee presented the progress of H-Anim facial animation co-authored with Jung-Ju Choi. This is in the process of being submitted to SC24 as a new work item proposal for H-Anim standards. The concepts of levels of expression and facial landmarks for facial animation were discussed.

- Roy Walmsley introduced new work and the progress of X3D C++ / C# language binding. Type and function definitions for language binding have been progressed. Myeong Won Lee showed an example of an implementation of a C++ language binding viewer. C++ coding using X3D is easily accomplished with this viewer because it provides read X3D functionality. Authors can expand their own C++ coding in the viewer.

- Myeong Won Lee presented work on X3D physical sensors. This is an X3D version of the new work item, "Sensor Representation in MAR", which is being progressed in SC24 WG9. Not all sensors defined in the SC24 WG9 work are considered here. This work item is intended for using sensor devices within X3D scenes.

- Kwan-Hee Yoo presented updates on projective texture mapping which was adopted as a new work item in SC 24 a few years ago. It is scheduled to be included in X3D 4.0. It should be progressed to the next stage of standardization.

- Kwan-Hee Yoo presented an overview of big data visualization, co-authored with Byounghyun Yoo. In addition, the necessity of standardizing big data visualization was discussed. Several examples of data visualization were demonstrated. It was emphasized that HTML5 and X3D can be used to implement big data visualization.

- Byounghyun Yoo presented a webizing method for the content and display of super multi-view autostereoscopic systems, co-authored with Daeil Seo. It provides an efficient content production pipeline for autostereoscopic content and an implementation method for a user's interaction with the content.

- Soonhung Han presented ISO TC 184/SC 4 standards and their relation to X3D CAD. IGES and ISO 10303 STEP were introduced. Several formats, including X3D, were listed and discussed for accomplishing 3D visualization in SC 4. In addition, the smart factory of the future with 15 components was discussed.

- Imgyu Kim introduced a macro-parametric approach, an X3D translator, and a Web-TransCAD system diagram and test case, co-authored with Soonjo Kwon, Youngki Kim, Inwhan Lee, Hyungki Kim, and Soonhung Han. With this system, CAD models can be converted to X3D. It was discussed that CAD can be translated to X3D with history information if X3D can contain modeling history.

- Gerard J. Kim presented two topics: "Haptic simulation" and "Image based rendering". Three physical properties were considered for haptic simulation: stiffness, friction, and surface texture. A HapticIndexedSurface node was introduced for implementing haptic properties in X3D. Image based rendering for X3D was proposed, and IBR texture for texture properties in X3D was discussed.

- Kwan-Hee Yoo introduced HMD technology and gave various demonstrations of HMD. WebVR functions were summarized. HMD VR service framework based on X3D was proposed with several components such as head tracking, positional tracking, stereoscopic 3D, spatial 3D sound, wide FOV, and orientation tracking. WebVR usage for implementing X3D HMD was discussed.

- Myeong Won Lee presented mobile 3D topics, including polygon reduction, GPS synchronization with 3D scenes, and mobile device sensors. This work item is intended to accomplish X3D based mobile 3D data representation and exchange and to obtain representation of copied real worlds with mobile sensors.

- The meeting adjourned at 5pm as scheduled.

Myeong Won Lee

Web3D Korea Chapter Co-Chair