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ISO/IEC/Web3D Status Report

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to
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Web3D-related Standards Published

- **ISO/IEC 14772-1:1997/Amd 1:2003—VRML**
- **ISO/IEC 14772-2:2004—VRML EAI**
- **ISO/IEC 19774:2006—H-Anim**
- **ISO/IEC 19775-1:2013—X3D (vs. 3.3)**
- **ISO/IEC 19775-2:2010—X3D SAI (vs. 3.2)**
- **ISO/IEC 19776-1:2009—X3D XML Encoding (vs. 3.2)**
- **ISO/IEC 19776-2:2008—X3D Classic VRML Encoding (vs. 3.2)**
- **ISO/IEC 19776-3:2011—X3D Compressed Binary Encoding (vs. 3.2)**



Current Web3D Standards Projects

- ISO/IEC 19774-1:201x/NP—H-Anim architecture (Vs. 2.0)
- ISO/IEC 19774-2:201x/NP—H-Anim Motion Capture (Vs. 1.0)
- ISO/IEC 19775-2:2015/DIS—X3D SAI Vs. 3.3 (IS in prep.)
- ISO/IEC 19776-1:2015/DIS—X3D XML Vs. 3.3 (IS in prep.)
- ISO/IEC 19776-2:2015/DIS—X3D Classic VRML Vs. 3.3 (IS in prep.)
- ISO/IEC 19776-3:2015/DIS—X3D Compressed Binary Vs. 3.3 (in prep.)



Current Web3D Standards Projects (cont.)

- ISO/IEC 19777-1:201x/NP—ECMAScript LB Vs. 3.3
- ISO/IEC 19777-2:201x/NP—Java LB Vs. 3.3
- ISO/IEC 19776-3:201x/DIS—X3D Efficient Binary Encoding Vs. 3.3
- ISO/IEC 18039:201x/CD—MAR Reference Model
- ISO/IEC *new number*:201x/WD—MAR Physical Sensors
- ISO/IEC *new number*:201x/WD—MAR Real Character Representation



X3D Version 3.4

- **Goal: Add new functionality that does not require architectural change**
- **Provides backwards compatibility in that it supports all previous Version 3.x functionality as well**
- **Fleashes out existing functionality to better support vertical applications (e.g., Medical and CAD)**



X3D Version 3.4 Functionality

- **The following is under consideration:**
 - **Annotation component**
 - **Multi-Planar Reconstruction**
 - **Enhancements to Geospatial component**
 - **Haptics**
 - **Corrections and improvements**
 - **NetworkSensor node**
 - **3D Printing enhancements**



X3D Version 3.4 Functionality (cont.)

- Projective texture mapping
- Camera nodes
- Sensors (e.g., GPS)
- Nodes in support of augmented and mixed reality
- Two independent implementations for submission to ISO
- Encodings based on W3C EXI format and JSON



X3D Version 4.0

- **Goal: Add changes needed to better support HTML5 while remaining backwards compatible as much as possible**
- **Primary areas of investigation:**
 - Event handling and interoperability with the DOM
 - Routes
 - Compatibility with X3DOM
 - Backwards compatibility with Vs. 3.x



X3D Standardization Timeline

- X3D Version 3.3 related Encodings ISO publication Spring/Summer 2015
- X3D Version 3.3 related language bindings to ISO 3rd Qtr 2015
- X3D EXI Encoding now that EXI specification approved by W3C
- X3D JSON Encoding
- X3D Python and C# language bindings
- X3D Version 4.0 discussions underway



ISO/IEC Information

- Standards committees
- Process
- Organization
- Relationship to Liaison Organizations



- **Worldwide federation of standards bodies**
 - 1 per country
 - US = ANSI, Germany = DIN, Korea = KATS, etc.
 - www.iso.org

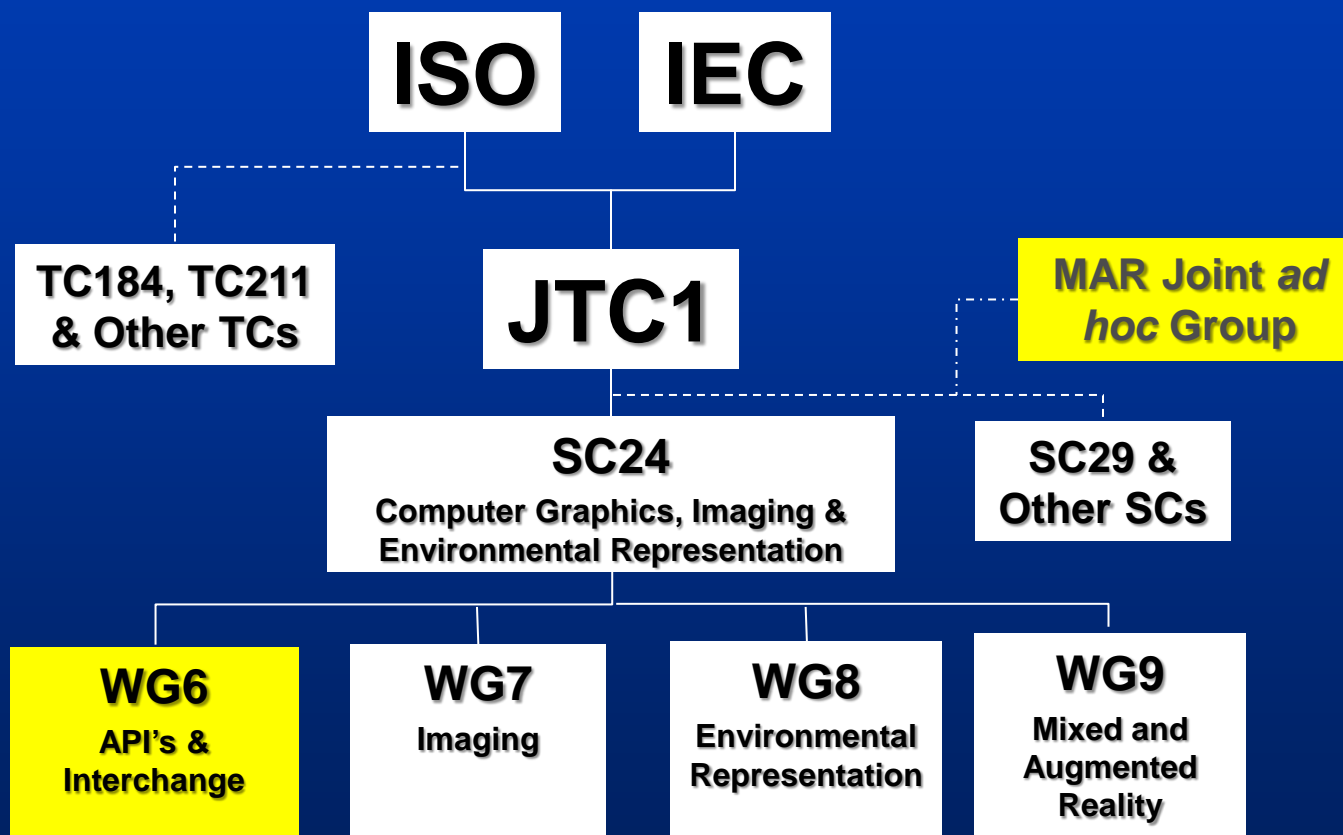


JTC1-Joint Technical Committee 1

- **Joint committee of ISO and IEC**
 - Since 1976
 - Handles ISO/IEC information technology
 - 1/3 of all ISO, IEC work



ISO/IEC JTC1/SC24





SC 24 and Web3D Consortium

- **Category C Liaison**
- **Cooperative Agreement**
 - Spells out rights and procedures
 - Web3D Standards submitted as Committee Drafts
 - Technical work done by Web3D
 - Editorial and technical review done by SC 24
 - ISO standard owned by both parties separately



Web3D Procedures

- **Technical work initiated by BOD**
- **Technical work occurs within a Web3D WG**
- **Two independent implementations required for Web3D approval and ISO submission**
- **Both BOD and Membership must approve forwarding to ISO**
- **X3D WG provides architectural control and design integrity check**



ISO Projects

- Each new standard, amendment, or revision requires a new project.
- Projects are approved by JTC1 based on New Work Item Proposal (NWIP).
- New projects require about 6 months to be approved and can be submitted at any time.
- Web3D drafts are processed as HTML documents.



ISO Procedures

- **Input text from Web3D registered as Committee Draft**
- **CD is circulated for review and ballot (4 months).**
- **Comments received are only justification for changing the text**
- **Technical changes may induce another balloting round.**
- **When ready, last CD is registered as DIS and circulated within JTC1 for vote.**
- **When ready, last DIS is registered as DIS and circulated within JTC1 for YES/NO vote.**
- **Final Text published as International Standard.**



Types of standardization

- **New standard:** New independent specification
- **New Part:** Independent portion of a standard within an overall standard. Ex.: X3D Part 2: SAI
- **Amendment:** Changes (modifications, additions, deletions) to existing standard. Ex.: Amendment 1 to X3D Part 1
- **Revision:** Makeover of existing standard and/or incorporation of amendments (considered for each standard at least every five years or required after two amendments). Ex. X3D 2008
- **Registration:** Add new optional nodes, PROTOs, or other items focused at specific targets



Possible Future Web3D Work

- **Additional functionality for X3D**
 - New nodes
 - New components
 - New profiles
- **Additional parts to X3D standards**
 - Binary Encoding based on EXI
 - JSON Encoding
 - Additional language bindings
- **Revised non-X3D Web3D standards**
 - Revision to ISO/IEC 19774—H-Anim
- **New non-X3D Web3D Standards**



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