Web3DUX working group

*The Web3D User Experience (Web3DUX) Working Group's mission is to collaboratively establish best practices and standardized capabilities that support rich user experience (UX), intuitive navigation, and effective interaction techniques for a variety of 3D Web technologies.*

**Status**

* This working group is under development
* We proposed to meet Bi-weekly Working Group teleconferences or Zoom on Thursday 2:00 - 3:00 pm (Eastern time)
* Results are reported on the x3d-public mailing list for now to motivate discussions

**Overview**

Web3DUX Working Group includes diverse activity and collaboration by stakeholder professionals in Web3D, User Experience (UX), Virtual Reality (VR), Augmented Reality (AR), mixed/extended reality (XR), User Accessibility, and Data Science. Our goals include establishing standard measurements for user experience on 3D interactive applications, maximizing play-anywhere Web compatibility across platforms and devices, demonstrating best practices for conducting usability studies in 3D applications, and exploring the opportunity to generate personalized UX. End users work across a broad range of domains and have diverse skills, experience, goals and needs. User accessibility issues often include deeper variations across these same themes. Producing exemplars that provide value across this rich variety of objectives can help establish best practices and repeatable patterns of success.

**Motivations, Goals and Objectives**

See the Web3DUX Working Group Charter for our motivations, goals and objectives. (see page 3)

**Outcomes**

Many inter-related tasks are intended to achieve the following overall outcomes.

* *Establish standard procedure/measurement for user experience on Web3D applications;*
* *Provide procedures and tools for the conduct the usability studies on 3D scenes on multi-platforms, including, 3D web applications, 3D AR/VR applications*
* *Promote a responsive 3D scene over different platforms*
* *Assess the accessibility of Web3D and mobile 3D applications*
* *Feasibility study on a personalized 3D web User Experience empowered by Natural Language Processing (NLP) technology and dynamic machine learning (ML) model generated by user behavior and interaction data*

**Related Working Groups**

Web3D working groups, portals and practices that are expected to inform, adopt and demonstrate this work include

**Activities (For the coming two months)**

* Call members to join
* Collect and assemble the current work on UX for 2D/3D interface. We will focus on the four interaction areas to be evaluated are:
	+ Navigation
	+ Manipulation
	+ Selection
	+ System Control
* Identify the role of data logging for the usability study
* Assess the current accessibility status for 3D applications in multi-platforms.
* Explore the current HCI researches with machine learning and NLP

**Communication**

* Mailng lists: Results are reported on the x3d-public mailing list with members-only list Web3DUX@web3D.org **Chair(s):**

Dr. Nicholas Ploys, Virginia Tech

Dr. Amela Sadagic, Naval Postgraduate School

Dr. Feng Liu, Mercer University

**Public Working Page (Wiki):**

Web3DUX Working Group Public Assets: <https://www.web3d.org/>Web3DUX-Public

Web3DUX Working Group Member Assets: https://www.web3d.org/Web3D[UX](https://www.web3d.org/UX-Web3D-Member)-Member

**References:**

Charter

Web3DUX Working Group Charter

**Overview**

The UX on Web3D Working Group mission is to collaborate with professionals in Web3D, UX and Data Science as well as related stakeholders to establish standard measurement for user experience on 3D interactive applications on the web and mobile device; provide procedures and tools for the conduct the usability studies on 3D scenes on multi-platforms, including, 3D web applications, 3D AR/VR applications. Importantly, explore the opportunity of personalized User Experience empowered by machine learning model with dynamic user interaction and user behavior data in 3D applications

Motivations

* collaborate with professionals in Web3D, VR/AR/XR, HCI and UX to generate interest on study UX in Web3D technology
* establish standard procedure or methods for usability study on interactive 3D applications on the web or handheld device;
* Investigate the potential on Web3D with UX/HCI empowered by Machine Learning

Goals

* Study the current usability studies on the following four interaction areas and standardized them:
	+ Navigation
	+ Manipulation
	+ Selection
	+ System Control
* Identify the role of data logging for the usability study
* Review requirements for proposed X3D Annotation Component relating to information sets, 2D/3D user experience, and authoring practices.
* Exploring best practices for supporting X3D accessibility that is compatible with Web accessibility.
* Provide procedures and tools for the conduct the usability studies on 3D scenes on multi-platforms, including, 3D web applications, 3D AR/VR applications
* Define a responsive interactive 3D technology over different platforms, such as web and mobile phone
* Establish standard measurement for user experience on Web3D applications;
* provide procedures and tools for the conduct the usability studies on 3D scenes on multi-platforms, including, 3D web applications, 3D AR/VR applications
* Explore the best practices on AI-supported HCI 3D applications on the web or other platforms

Objectives

The working group will collaboratively design a general framework that supports:

* collaboration among UX designer, HCI expert, Computer scientist and Data scientists
* user research and usability study with procedures and tools and standardized measurement on 3D applications on the web, mobile and others multiplatform;
* task-oriented web3D application applies in practices and serves to the community needs.
* Web3D and mobile 3D applications with feasible and affordable accessibility and personalized interaction.

If successfully designed, such a general framework might be gradually extended with new concepts related to a variety of different semantic areas using the X3D presentation.

Practices

The Web3DUX Working Group follows [Web3D Working Group Practices](https://www.web3d.org/working-group/practices).

The role of the X3D community has been crucial throughout every stage of development for the VRML and X3D International Standards. The public community of interested Web authors has always been a principal stakeholder for success and indeed is often a primary driver of long-term progress. Open public discussion and periodic community review of key issues remain an essential activity for the Web3DUX Working Group.

Meetings

The Working Group holds twice-monthly teleconferences and face-to-face meetings annually at the Siggraph and Web3D conferences.

Participants

The Web3DUX Working Group is a Web3D Consortium members-only activity. Non-member experts may be invited to participate in topics of special interest. The leadership of the Working Group consists of 2-4 co-chairs.

Dependencies and Liaisons

The Web3DUX Working Group supports other Web3D Working Groups and [Web3D Consortium Liaisons and Partnerships](https://www.web3d.org/about/liaisons). Efforts and products are coordinated via the X3D working group to achieve planned specification milestone activities and effective external liaisons.

Confidentiality

Working group communications are published in the X3D members-only mailing list. At the discretion of the Working Group, as appropriate, information may also be released to the public.

Communication

* Mailng lists: Results are reported on the x3d-public mailing list with members-only list Web3DUX@web3D.org (subscribe)
* Web3DUX Working Group Charter (this page)

Creation and Approval Dates

This charter is pending on approval by the Web3D Consortium Board of Directors