Welcome to the Khronos 3D Commerce Workshop

Shanghai
19th August 2020
Opening Remarks

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3D Commerce Workshop
Shanghai, August 2020
3D Commerce has not achieved deployment at industrial scale due to lack of industry cooperation in eliminating friction points through the design/distribution/deployment pipeline.
Commerce and Tech Companies Together

World-Leading 3D Technology Companies

World-Leading E Commerce Companies
XR Portability

OpenXR provides cross-platform, high-performance access directly into XR device runtimes across multiple platforms.

Conformant Devices

Virtual Reality

Augmented Reality

Virtual Reality

V

A

Augmented Reality

Oculus Rift S

Windows Mixed Reality Headsets

HoloLens 2

Oculus Quest

XR App/Experience

Game Engine

WebXR

Application Interface

And More!

OpenXR

SteamVR

Varjo

Monado

Oculus

magic leap

HoloLens 2

Windows Mixed Reality

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Bringing XR to the Web

Native XR Apps

- vuforia
- unity

Web XR Apps

- babylon.js

Native 3D Engines

- Unreal Engine

Web 3D Engines

- three.js

Khronos provides the foundation for native and Web-based 3D/XR

Lifting OpenXR functionality into the Web stack

Close cooperation between WebXR and OpenXR
3D Commerce Khronos Synergy

3D Asset Format

Interactive 3D on the Web

Portable AR and VR Apps

High-performance cross-platform 3D graphics

Khronos 3D Commerce
Introduction to 3D Commerce in Khronos

Dennis Fu
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Khronos Connects Software to Silicon

Open interoperability standards to enable software to effectively harness the power of multiprocessors and accelerator silicon

3D graphics, XR, parallel programming, vision acceleration and machine learning

Non-profit, member-driven standards-defining industry consortium

Open to any interested company

All Khronos standards are royalty-free

Well-defined IP Framework protects participant’s intellectual property

Founded in 2000

>150 Members ~ 40% US, 30% Europe, 30% Asia
### Khronos Active Initiatives

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Guidelines for creating APIs to streamline system safety certification

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3D Commerce - Four Initial Areas of Focus

- **Asset Creation Guidelines**
  For tools and product designers to create assets with consistent data to be used through the 3D Commerce pipeline

- **Product Configuration**
  Universal product configurability data and guidelines on how to drive consistent product display

- **Metadata**
  Structured metadata definitions and examples to consistently carry product information through the retail pipeline

- **Viewer Validation and Certification**
  Test models, reference viewer, display analysis tools and capability specifications to guarantee a consistent and accurate end user experience
3D Commerce and glTF Cooperation

3D Formats
1. Generates Test Samples
2. Upgrades glTF Validator and Sample Viewer

Sample assets to exercise key use cases in Validators and Viewers

glTF Sample Repo

Validation Tools

glTF KHR_XMP Extension

glTF Universal Texture Extensions

glTF Sample Viewer

Viewer Certification Harness

3D Commerce
1. Generates Test Samples
2. Upgrades Guidelines Validator and Viewer Certification Harness

Asset Creation Guidelines

glTF KHR_materials_variants Extension

Experience needed from two independent Implementations before specification ratification

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Khronos Asian Members

All members get a voice and a vote in creating Khronos international standards
Khronos is creating cutting-edge royalty-free open standards 3D Commerce

We welcome new members from China and Asia!

www.khronos.org
dennis@khronos.org
Why we are all here today for 3D Commerce

Shrenik Sadalgi
Chair, 3D Commerce WG
Director of R&D, Wayfair

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Impact of 3D in Retail

“...by 2020, 100 million consumers will shop in AR online and in-store...”

“...46 percent of retailers planned to deploy either AR or VR solutions to meet customer service experience requirements....”

“...the impact of AR or VR in retail can be transformative...”

“...retailers can use AR as an extension of the brand experience to engage customers in immersive environments and drive revenue...Additionally, AR can be used outside the store after a sale to increase customer satisfaction and improve loyalty...”

April 2019 Gartner press release
Let’s Think About “Search” as a Use Case
E.g. Google Search now enables 3D and AR experience directly from Search results
On a Different Platform
E.g. on Apple
Cross-Platform Distribution of 3D Content
Where Does Content Come From?

Content Production

- View in 3D
- View in AR
- Retailer's Content
- Retailer's Website
- Buy Now

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Content Production
One example of the content production process
Alignment Needed Across Supply Chain of 3D
Khronos 3D Commerce Initiative

The Opportunity

Retailers have been experimenting with 3D product representations on the Web, and in Virtual and Augmented Reality applications, to enable users to view and interact with products. The results have been exciting, but thus far NOT ACTIONABLE at an INDUSTRIAL SCALE.

- Products don’t come with 3D data - and I can’t physically scan them all fast enough!
- CAD tools don’t let me easily generate the data I need for E Commerce!
- The green couch looks blue on some devices - lots of product returns are expensive!
- Many models on my e-commerce web-site first appear upside down! I have to hand tune everything!
- I wish I had high quality, realistic 3D models for virtual promotional photoshoots!
- Everyone defines their product data for sizes and colors differently - nothing is consistent!
Khronos 3D Commerce Mission

Create specifications and guidelines to align the 3D asset workflow from product design through manufacturing, through each stage of retail to end-user delivery platforms
Khronos 3D Commerce Goals

Visual realism and consistency no matter where the model is displayed
Khronos 3D Commerce Goals

Product display configurability with consistency and authenticity
Khronos 3D Commerce Goals

Structured metadata for product management and configurability of viewing
Khronos 3D Commerce Goals

Guidelines for tools and product designers to create assets with consistent data to be used through the 3D Commerce pipeline

Reduce production, distribution and marketing costs
Khronos 3D Commerce Goals

- Guidelines for tools and product designers to create assets with consistent data to be used through the 3D Commerce pipeline
- Structured metadata for product management and configurability of viewing
- Visual realism and consistency no matter where the model is displayed

- Reduce production, distribution and marketing costs
- Product display configurability with consistency and authenticity
Resources

- Khronos 3D Commerce Working Group
  - https://www.khronos.org/3dcommerce/

- glTF Home Page
  - https://www.khronos.org/gltf/

- More Information
  - 3dcommerce-feedback@khronos.org

Summary of upcoming 3D Commerce Real-time Asset Creation Guidelines
We welcome your input and feedback!