Sample Viewer

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Agenda

- Introduction
- Motivation for the glTF Sample Viewer
- Demo session
  - New general features
  - New physically based materials
  - New optimization features
  - New features for 3D Commerce
- Outlook
- Questions & Answers
Introduction

- Managing Director at UX3D
- Computer scientist
- Working more than three years on glTF
- UX3D is contracted for implementing the glTF Sample Viewer
Motivation for the glTF Sample Viewer

• What is glTF?
  - graphics language Transmission Format

• Optimized 3D format
  - Reduced file size for transferring from server to client
    - Image data
    - Vertex data
    - ...
  - Graphics processing unit (GPU) friendly
    - Minimal or no changes to use the data
    - Ready to draw the 3D content
Motivation for the glTF Sample Viewer (cont.)

• Scope of the glTF Sample Viewer
  - How to draw this 3D content?
    - Real-time physically based rendering (PBR) on the GPU
  - Small codebase for educational purpose
    - Lean and not for every corner case
  - Synchronize visual output in 3DCommerce™

• Scope of this webinar

Generate glTF

Webinar scope

Edit glTF

glTF with other Graphics API

Raytracing glTF

glTF in XR

Compression algorithms

Digital twin for visualization

DRAKO

DRACO

KTX

3DCommerce

Generate glTF

WebGL

glTF

COLLADA™
Motivation for the glTF Sample Viewer (cont.)

- Magic of glTF
  - Next generation of product visualization
  - Computer games
  - 3D maps
  - ...

Companies Supporting 3D Commerce

Industry Support for glTF

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Demo session

- Switching between glTF Sample Viewer and presentation slides
  - glTF Sample Viewer Home
    - https://github.com/KhronosGroup/glTF-Sample-Viewer
  - glTF Sample Viewer Live Demo
    - https://github.khronos.org/glTF-Sample-Viewer-Release/

Website layout issues?
Press e.g. CTRL-F5 to reload page

Rendering issues?
Requires WebGL 2.0
https://caniuse.com/webgl2
Demo session: New general features

• New web interface
  - 3D renderer separated from web interface
    - API
      https://github.com/KhronosGroup/gltF-Sample-Viewer/blob/master/API.md
    - npm package
      https://www.npmjs.com/package/@khronosgroup/gltf-viewer

• Improved performance
  - Adding high dynamic range images
    - Prefiltered .hdr files
  - Switching between glTF assets
    - No reloading and/or loading of non-required data
Demo session: New physically based materials

- Demo materials for PBR Phase I
  - Clear coat
    - KHR_materials_clearcoat
  - Sheen
    - KHR_materials_sheen
  - Transmission
    - KHR_materials_transmission
Demo session: New optimization features

- Demo compression and quantization
  - Draco geometry compression
  - Extended mesh quantization
  - KTX v2 with BasisU compression

- KHR_draco_mesh_compression
- KHR_mesh_quantization
- KHR_texture_basisu
Demo session: New features for 3D Commerce

- Demo (not just for) 3D Commerce features
  - Multiple material variants
  - XMP Metadata for glTF

KHR_materials_variants
KHR_xmp_json_ld
Outlook

• Sneak demo (not final)
  - Index of refraction (IOR)
  - Specular glossiness parameters
  - Thick transparent materials

KHR_materials_iOR
KHR_materials_specular
KHR_materials_volume
Questions & Answers

- Session is recorded
  - Updates, content etc. will be shared here
    https://www.khronos.org/events/join-us-for-a-gltf-sample-viewer-webinar

- Questions ...
  - ... I could not answer?
  - ... I had no time?
  - ... were out of scope?

- Let’s connect!
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- Try out the latest Gestaltor - the visual glTF editor
  - https://gestaltor.io/#lastestScrollTarget