Overview

- **X3DOM Basics**

- **Demo**

- **Hot topics (PBR, glTF & WebVR)**

- **Demo**

- **Roadmap 2018**

X3DOM // Overview

- **Integrates 3D content seamlessly into your webpage**

- **Access & manipulate Nodes per DOM-API**

- **No Plugins needed (Only WebGL)**

- **Simply include one javascript file and start**

- **Open-Source**

- **Free for non-commercial and commercial purposes**

Demo

X3DOM // Evolution of Binary Formats

Image Geometry

X3D-based Scene description + external referenced binary data images

Binary Geometry

X3D-based Scene description + external referenced binary data blobs

Shape Resource Container (SRC)

JSON-based Scene description + internal or external binary data blobs
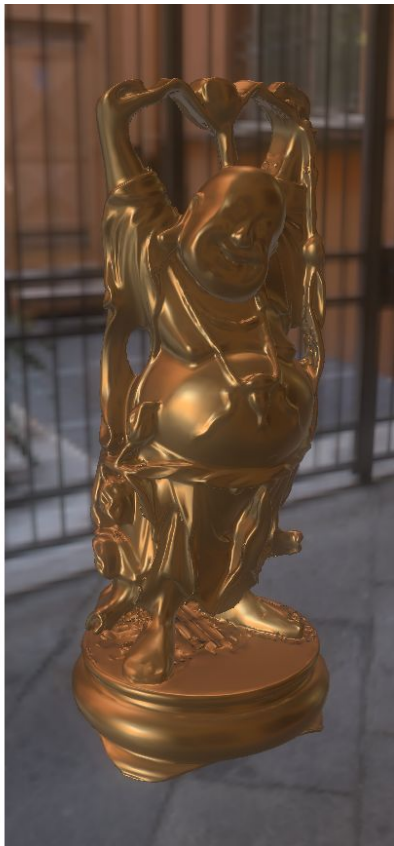
x3dom

Instant 3D the HTML way!

PBR // Overview

- **Modern physically-based Material description**

- **Minimal parameter set to describe a wide range of different Materials.**

- **Available in the big Engines: Unreal, Unity, Frostbite, etc...**

- **But not in the web.**

- **So we have proposed a web-ready PBR Material description at the**

  Web3D 2016

PBR // X3DOM

- **Integrated as PhysicalMaterial-Node like proposed in our paper.**

- **So every standard X3D Geometry-Node can rendered with this**

  Physically-based Material.

- **Direct lighting is already in.**

- **And also Image Based Lighting is integrated as**

  PhysicalEnvironmentLight-Node like proposed in our paper.

gITF // Overview

- **Modern 3D Transmission format**

- **Uses a JSON-based Scene description + internal or external referenced binary data blobs inspired by our SRC**

- **Uses our proposed PBR-Material as default material**

- **Used by Microsoft, Facebook, Sketchfab, and many many more.**

gITF // X3DOM

- **Simple loading per Inline-Node like an external X3D-File**

- **Nodes are fully integrated into the X3DOM-Scenegraph**

- **Easy access & manipulation per DOM-API**

- **Supports gITF, gITF-Embedded & gITF-Binary**

- **Integration is still experimental**

WebVR // Overview

- **Modern WebAPI to access VR Devices like HTC Vive, Oculus Rift or Google Daydream directly in the Browser.**

- **Available in Chrome, Firefox & Microsoft Edge**

- **Easy to use**

WebVR // Usage

Get the VR Display

```
navigator.getVRDisplays().then( ( displays ) => { ... } ) );
```

Enter VR Mode

```
display.requestPresent([{source:canvas}]).then(()=> { … } );
```

Get the Display data

```
display.getFrameData( vrFrameData );
```

Submit a frame

```
display.submitFrame();
```

WebVR // X3DOM

Last Years

- **No deep integration into the X3DOM-Core**
- **All examples are build around X3DOM**
- **Duplicated Scenes & RenderTextures**

Now (still experimental)

- **Deep integration into the X3DOM-Core**
- **Enter VR simply by clicking the VR-Button**
- **Single Pass Rendering with hardware Instancing**

Demo

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Instant 3D the HTML way!

Roadmap 2018

May // June

Further integration of PBR, WebVR & glTF into the X3DOM-Core

June // July

Merge of the new experimental core features (PBR, WebVR & glTF) to the official development Branch for stabilization.

July // August

Stable Release of X3DOM v1.8.0

Fraunhofer
TIMO STURM   IGD

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Instant 3D the HTML way!

Links

Official Website: **www.x3dom.org**

Github Repository: **www.github.com/x3dom/x3dom**

Stable Build: **www.x3dom.org/download/1.7.2**

Development Build: **www.x3dom.org/download/dev**

Experimental Build: **www.x3dom.org/download/exp**

glTF Example: **www.examples.x3dom.org/gltf2**

Links

SRC Paper:	**https://x3dom.org/src/**
PBR Paper:	**https://x3dom.org/pbr/pbr2016.pdf**
WebVR Website:	**https://www.webvr.info**
gITF Repository:	**https://github.com/KhronosGroup/glTF**