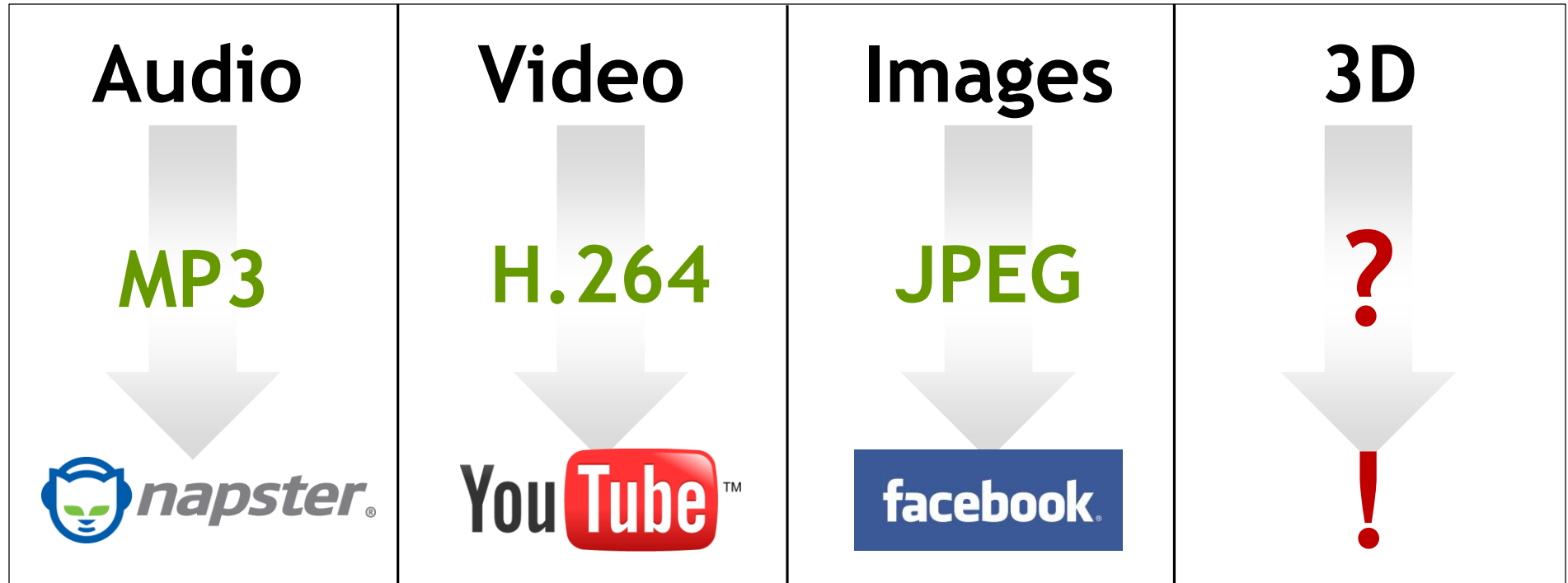




glTF - it's like JPEG - but for 3D!

Neil Trevett | Khronos President
NVIDIA Vice President Developer Ecosystem
ntrevett@nvidia.com [@neilt3d](https://twitter.com/neilt3d)

3D Needs a Transmission Format!



Efficient Format + Widespread Acceptance = Opportunity

UPL

VR INDUSTRY NEWS

EXPERIENCES

HARDWARE

REVIEWS

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CATEGORY: DEVELOPMENT / VR INDUSTRY NEWS

1.0m

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465

Oculus Executive Calls For 3D Equivalent Of JPEG To Build The Metaverse



by IAN HAMILTON • JULY 22ND, 2016

A new standard for 3D scenes is gaining momentum with support from graphics industry leaders, potentially laying the groundwork for science fiction's "metaverse" to be realized.

The GL Transmission Format (glTF) from The Khronos Group, a computer graphics industry standards body, could also put magnitudes more 3D content on the Internet. The Khronos Group is responsible for a variety of technologies critical to how computers show digital content, including Vulkan, OpenGL, WebGL, and

Publicly Stated Support for glTF

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Compact to Transmit



Efficient to Load



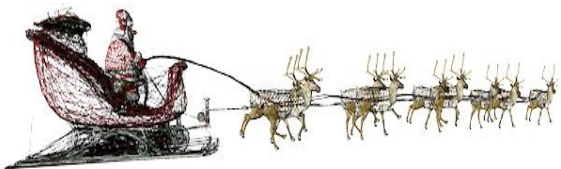
Runtime Neutral



Extensible



glTF Structure



Describes full scenes-
not just meshes

.gltf

JSON describes node hierarchy, materials, cameras

.bin

Geometry: vertices and indices
Animation: key-frames
Skins: inverse-bind matrices

.glsl

Shaders

.png

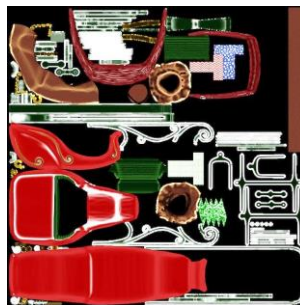
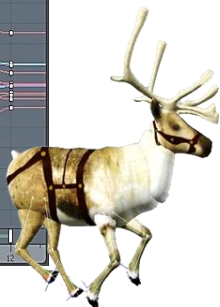
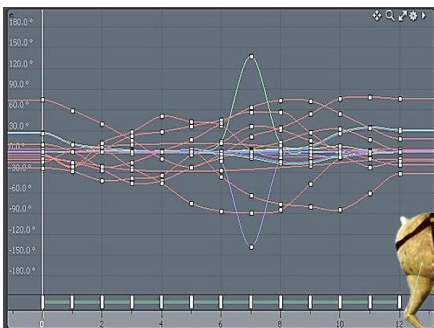
.jpg

...

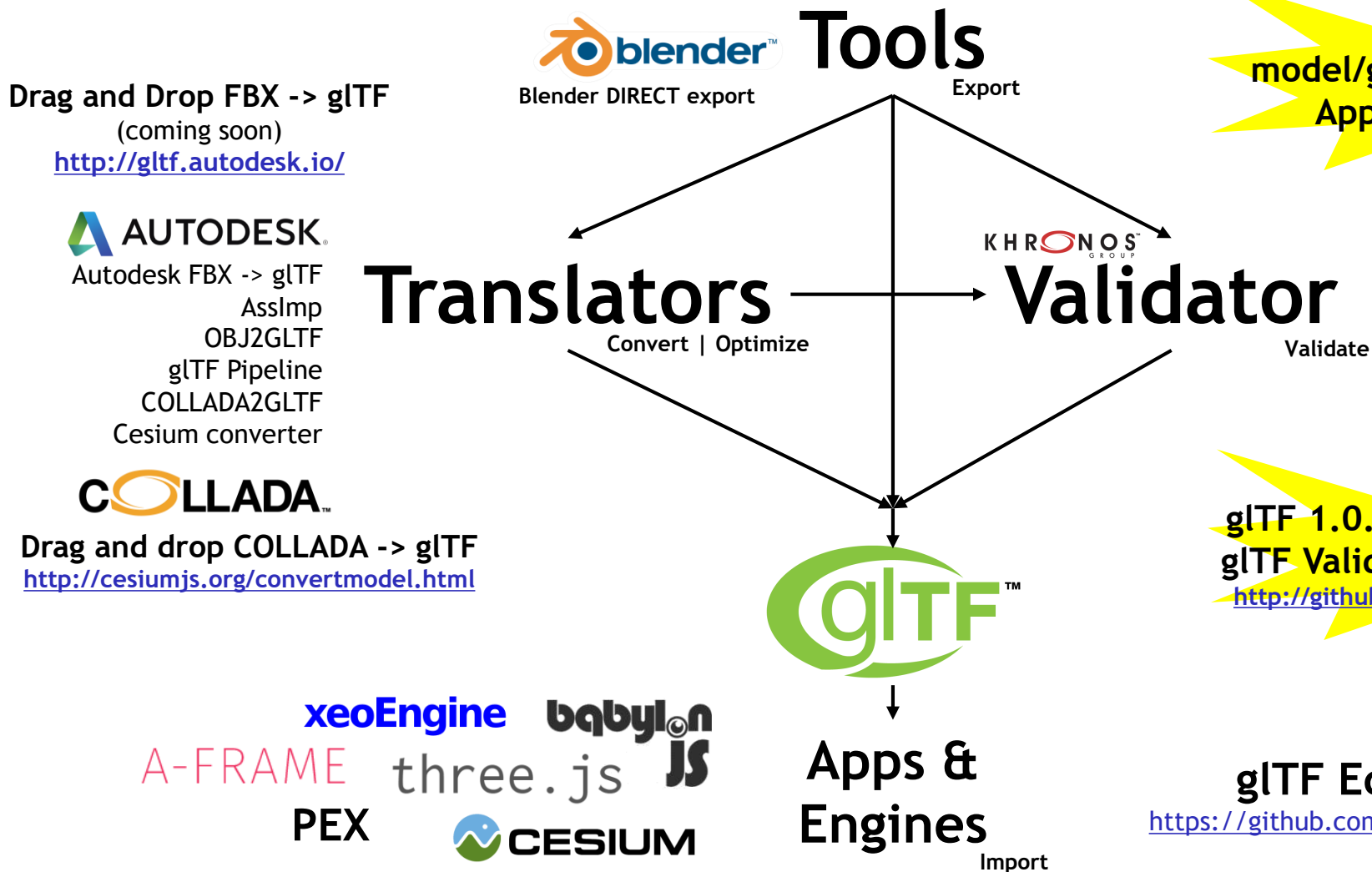
Textures



NORAD's Santa Tracker



glTF Ecosystem News!



model/gltf+json MIME type
Approved by IANA!

glTF 1.0.1 Spec Released and
glTF Validator in open source!
<http://github.khronos.org/glTF-Validator/>

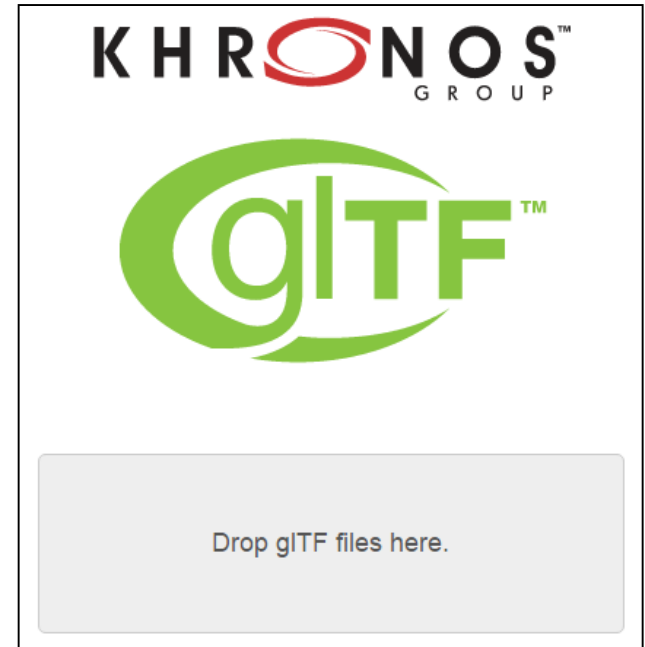
glTF Ecosystem Page

<https://github.com/KhronosGroup/glTF#gltf-tools>

glTF 1.0.1 Validator

- glTF 1.0.1 tightens specification
 - For robust validation and interoperability
- Validator in open source on GitHub
 - Khronos Validator project RFQ awarded to Alexey Knyazev - doing awesome work!
 - Rigorous checking for correctly formed glTF files
 - Checks JSON syntax, all property details, GL parameter combinations etc. etc.
 - Built using Dart (easy API level integration)
 - Shipping today as client-side drag-n-drop and command-line wrapper
 - Client-side JavaScript library coming soon
 - Extensible - validation plugins for extensions - output can be integrated into the validation report

<http://github.khronos.org/glTF-Validator/>



Please give us feedback on GitHub!

Khronos and Web3D Cooperation



Layered Web, Application Domain
and Technology Expertise



x3dom

SRC

EBE



Focused on
Core Platform Capabilities



Khronos standards are freely available and royalty-free
Formal liaisons between Web3D and Khronos are always welcome!

Roadmap Discussion Topics

Physically Based Rendering

Modern, compact, scalable
Fraunhofer, NVIDIA MDL

Streaming and Mesh Compression

MPEG 3DGC (royalty-free), Fraunhofer SRC

Enhanced API Support

Make efficient use of
WebGL 2.0 and Vulkan



Enhanced Animation

Morph Targets

Advanced Surfaces

Pixar's OpenSubdiv?

Increased Efficiency

Improved parsing, arrays, bounding boxes

Must avoid the complexity trap!

Core glTF must remain efficient and straightforward to use

Extensions for domain specific functionality

Come to the glTF Community on GitHub

<https://github.com/KhronosGroup/glTF>

Or join Khronos to get directly involved!

T-Shirts!

Still some at the front desk!

Or get yours at the

WebGL and glTF BOF

Ballroom A, Hilton Anaheim

Wednesday 1-2:30

Blend4Web

Fraunhofer: PBR in glTF

SketchFab

Mr.doob: Three.js

BioDigital Human

Floored

AGI: Cesium and 3D Tiles

Tony Parisi: glTF call for roadmap proposals

Oculus: Oculus and glTF

