



# glTF Update to ISO/TC 171/SC 2/WG 7

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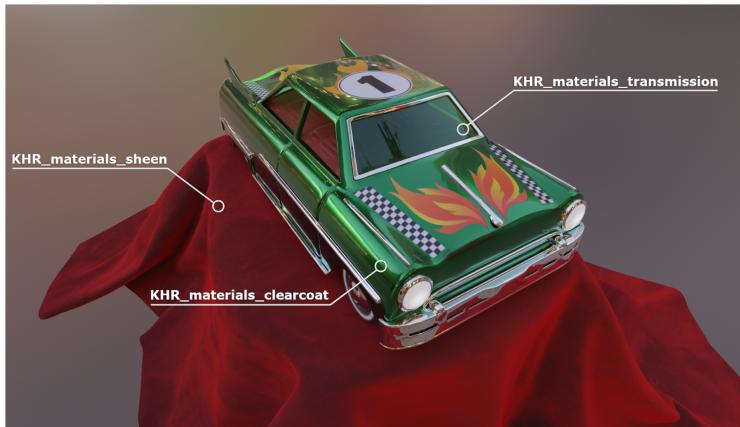




# glTF PBR Materials Roadmap



Creating a rich physically-based material framework for the glTF ecosystem  
glTF extensions add PBR material parameters that integrate with existing materials  
Building consensus on interoperable PBR deployable on diverse platforms and devices



<https://belcour.github.io/blog/research/2017/05/01/bdrf-thin-film.html>

KHRONOS®  
GROUP

June 2017  
Core glTF 2.0

Mandatory Metallic-Roughness  
Optional Specular-Glossiness

December 2020  
First Wave glTF PBR Extensions

Clear Coat  
Transmission  
Sheen

Future Waves of  
glTF PBR Extensions

Subsurface Scattering, Attenuation,  
Index of Refraction (IOR), Thickness, Specular Color,  
Anisotropy, Translucency, Thin Film (iridescence)  
and more...

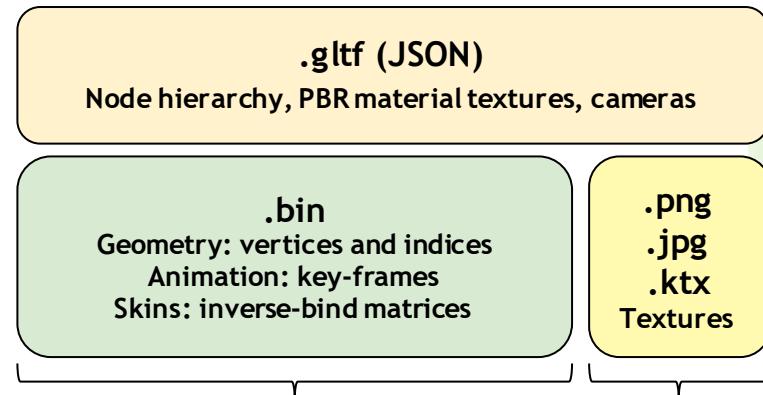
# Questions

**What image formats does glTF support  
including things like lights and background scenes)**

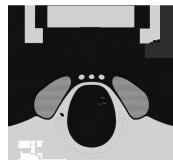
**How is the glTF ISO standardization going?**

**What glTF extensions are supported?**

# Core glTF 2.0 Asset Structure



Geometry



Texture based  
PBR materials



PBR stands for  
“Physically-Based Rendering”

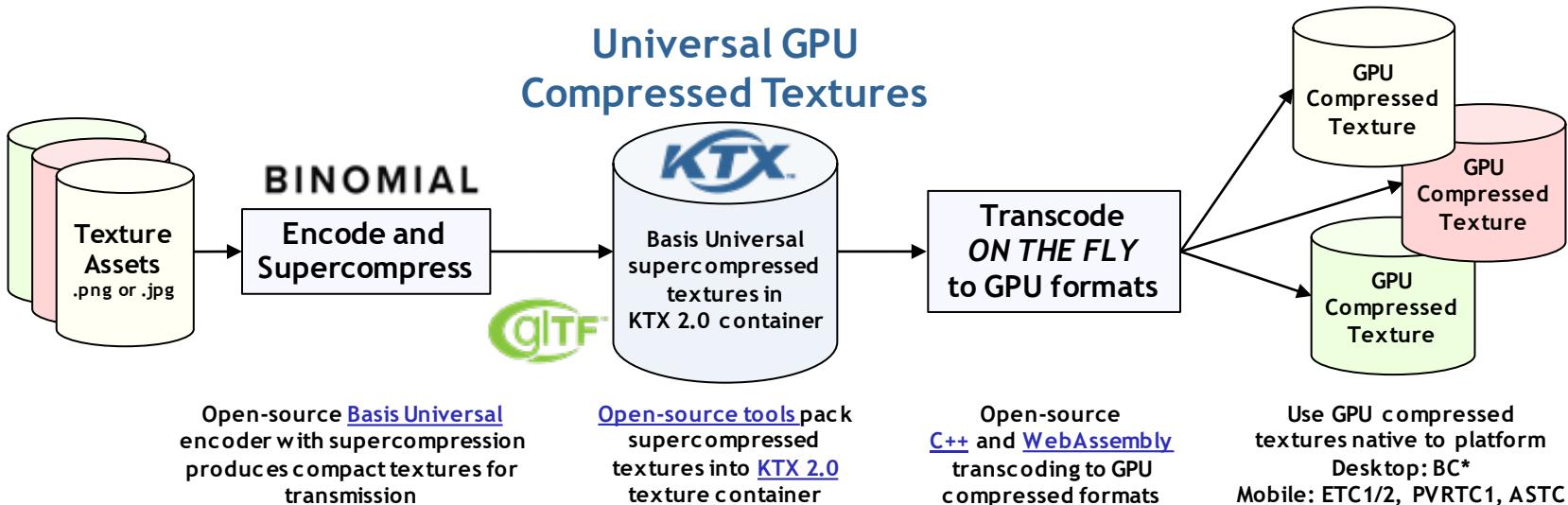
Mandatory Metallic-Roughness Materials  
Base Color (Albedo) | Metalness | Roughness  
Emission | Normal Map | Baked Ambient Occlusion

Optional Specular-Glossiness Materials  
Diffuse | Specular | Glossiness

# Khronos KTX 2.0 and Basis Universal

## KTX (Khronos Texture)

A lightweight container format for consistent, cross-vendor distribution of textures  
Contains all parameters needed for texture loading, including mipmap level access e.g., for LOD streaming  
Supports wide range of texture formats used in Vulkan, OpenGL and other GPU APIs  
KTX 2.0 adds support for Basis Universal supercompressed textures



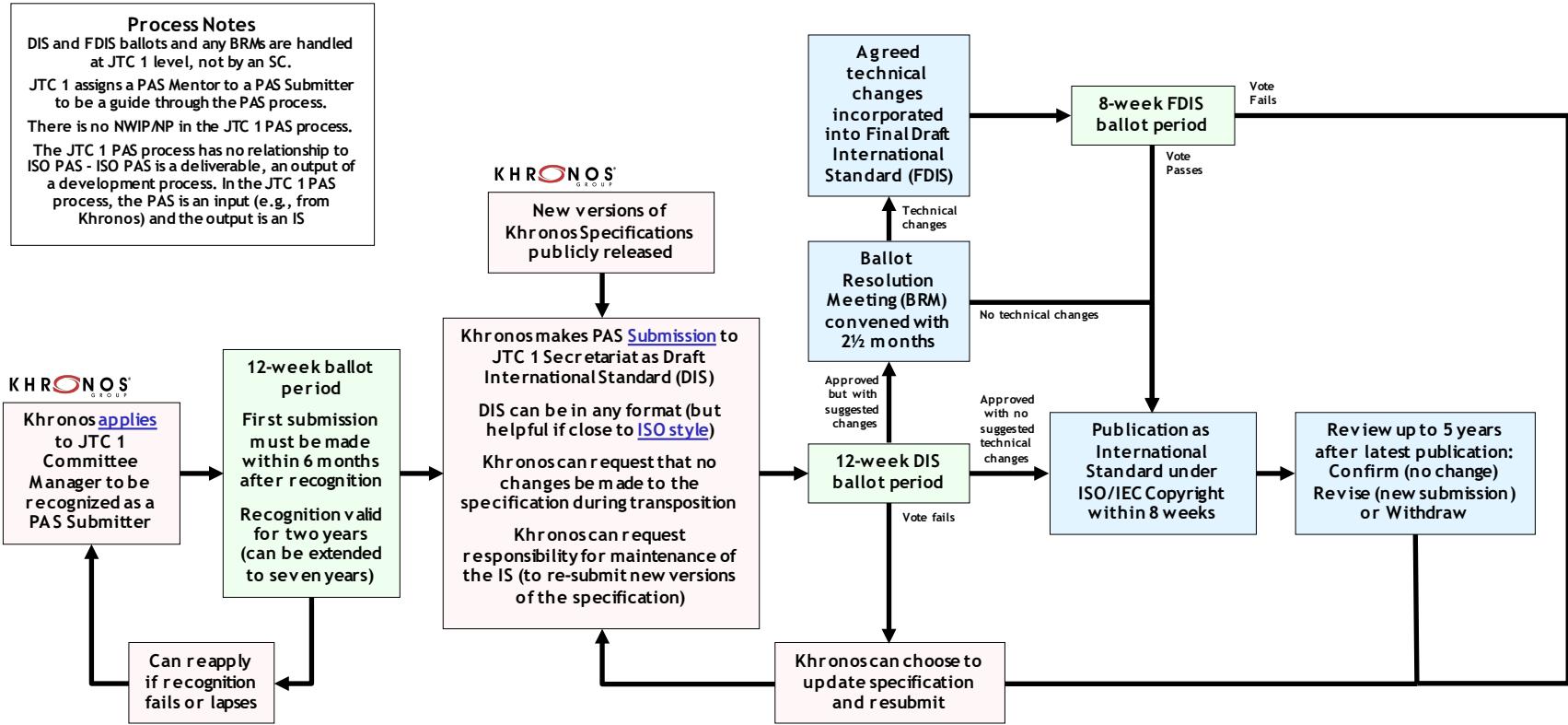
# The Results



**KTX**<sup>™</sup>

**KTX**<sup>™</sup>

# Khronos and JTC 1 PAS Process



Process summarized from [Consolidated JTC 1 Supplement](#) and JTC1 [Standing Document 9](#)

# PAS Submitter Status

- Khronos has applied to become PAS submitter
  - Ballot results around on 5<sup>th</sup> May 2021
  - Positive feedback so far
- If approved, Khronos intends to immediately submit glTF 2.0 as a PAS
  - Working to bring PAS in line with ISO drafting standards to smooth transposition to IS
- Khronos is discussing what glTF extensions to include in first submission
  - Extensions can also be added in later submissions

Khronos would welcome discussion under  
our ISO/TC 171/SC 2 Cat A liaison on  
PDF's 3D use cases and requirements