

JONATHAN STONE – LUCASFILM ADG

MATERIALX: 2024 PROJECT UPDATE

PROJECT HISTORY

MATERIALX ORIGINS

- Launched at Industrial Light & Magic in 2012
- Goal is to express materials independently of application or renderer
- First production use on *Star Wars: The Force Awakens* in 2015



PROJECT HISTORY

INDUSTRY COLLABORATIONS

- First collaboration with Autodesk in 2016
- Released as open source in 2017
- Evolved through collaborations with Pixar, Adobe, SideFX, NVIDIA, and others
- Joined the ASWF in July 2021

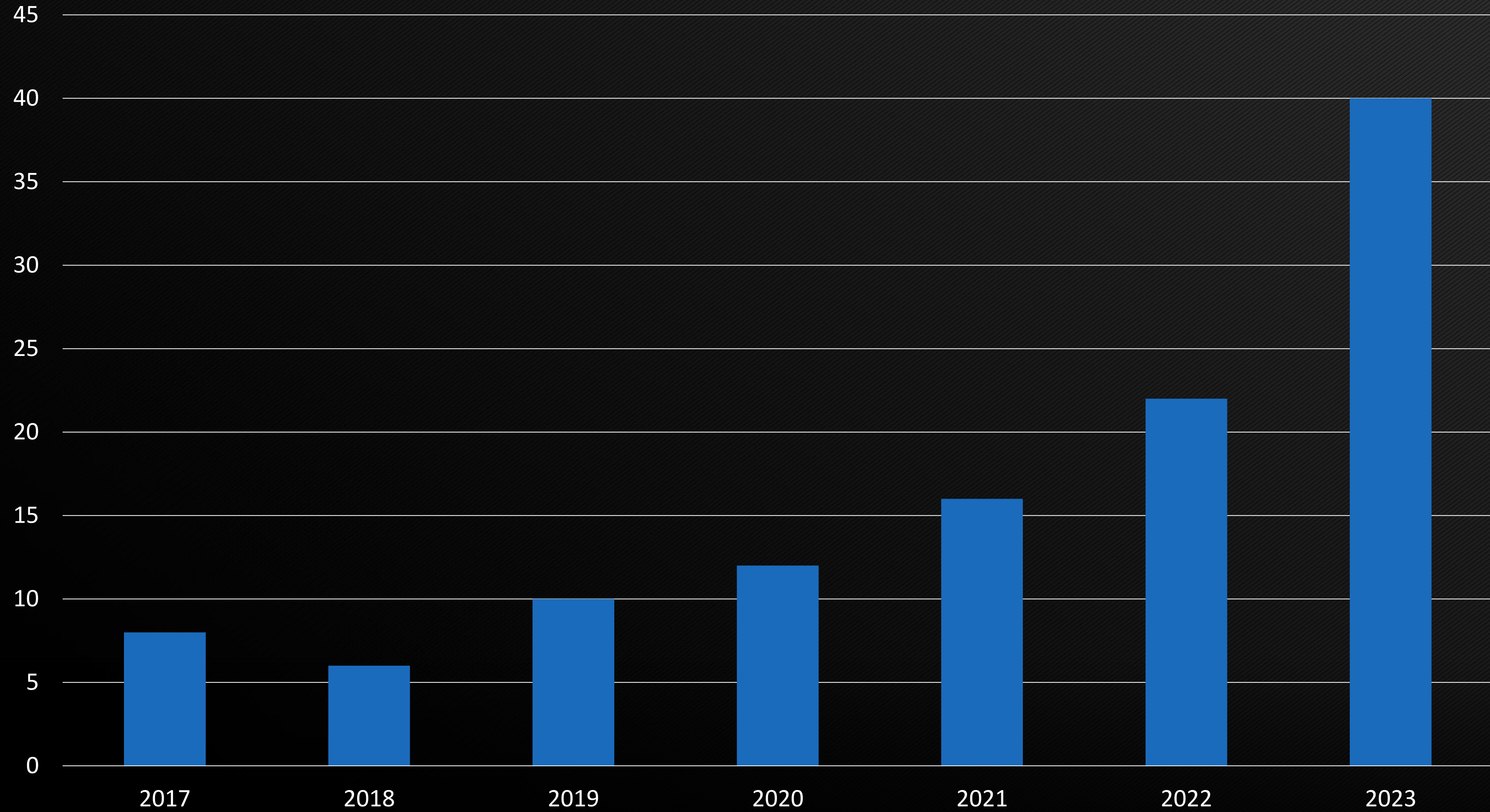


TECHNICAL STEERING COMMITTEE (2024)

- 15 members representing 11 companies:
 - Adobe, Apple, Autodesk, Epic, IKEA, ILM, Khronos, NVIDIA, Pixar, SideFX, SPI
- 5 voting members, 10 stakeholders
- 56 meetings since joining the ASWF
- All meetings are open to the community

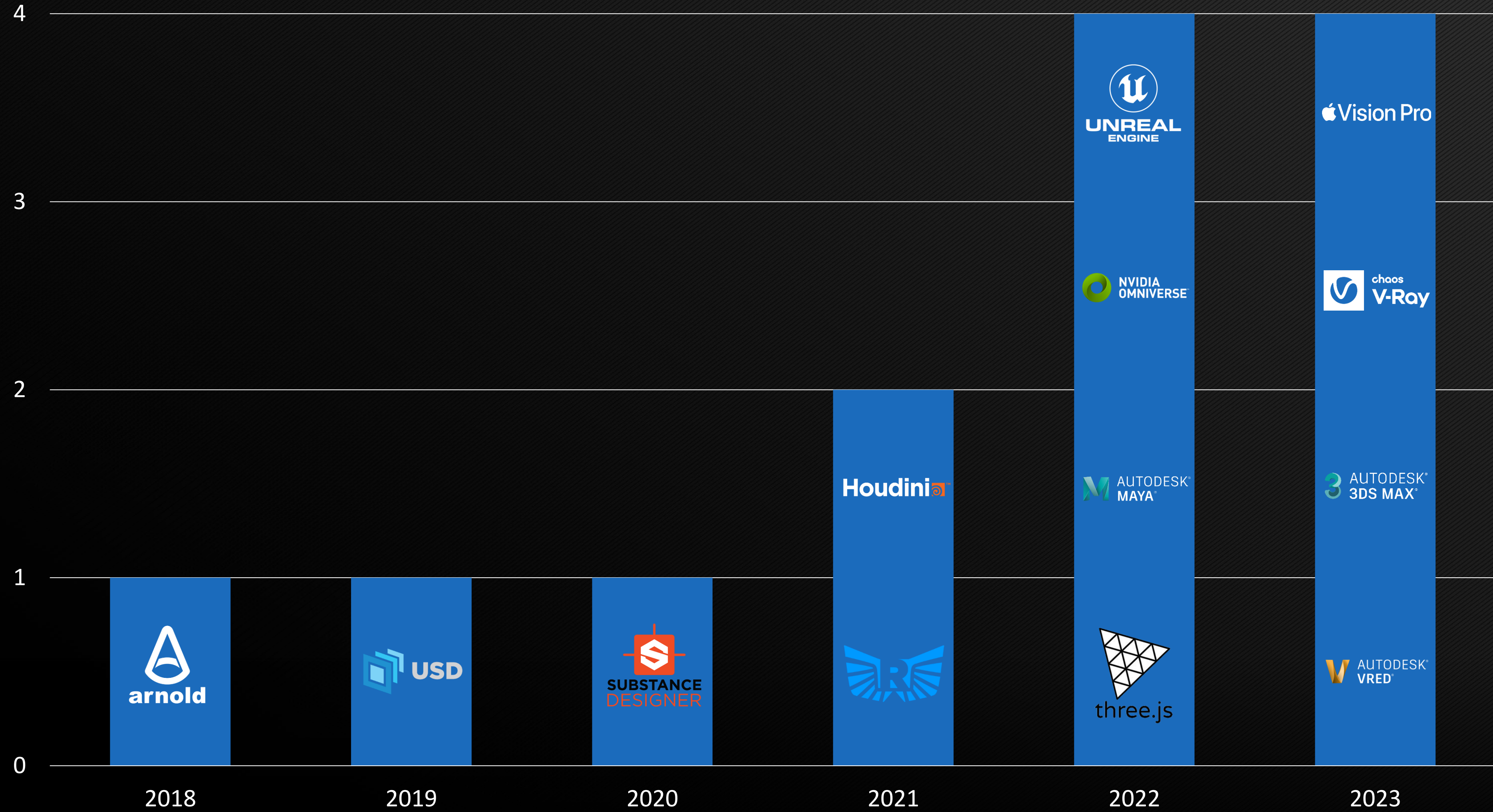
PROJECT EVOLUTION

MATERIALX CONTRIBUTORS BY YEAR



PROJECT EVOLUTION

NEW MATERIALX INTEGRATIONS BY YEAR



OPEN PBR SURFACE

- A new open surface shading model, organized as a subproject of MaterialX
- Developed in collaboration with Adobe and Autodesk
- Currently at v0.2 with a production release planned this year



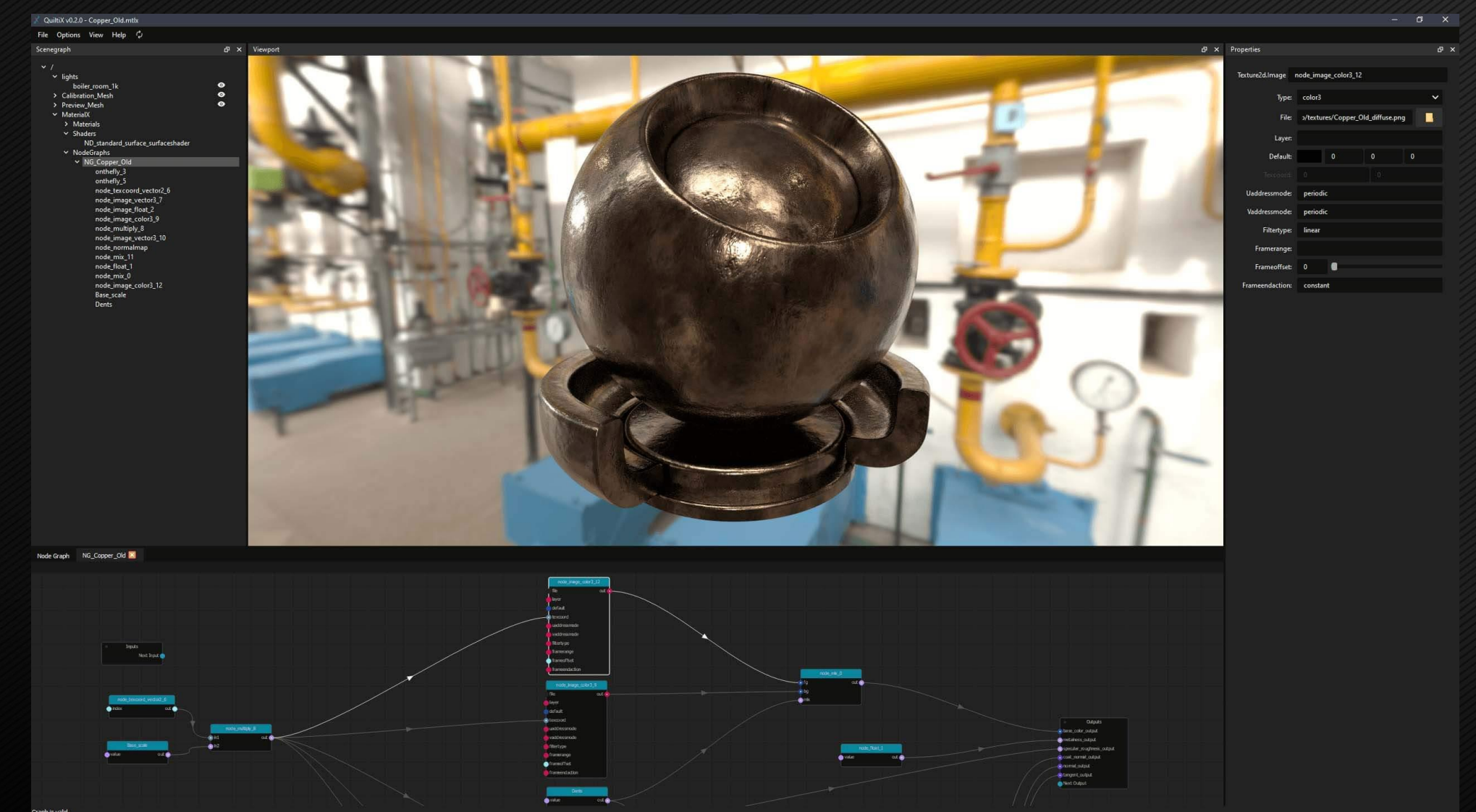
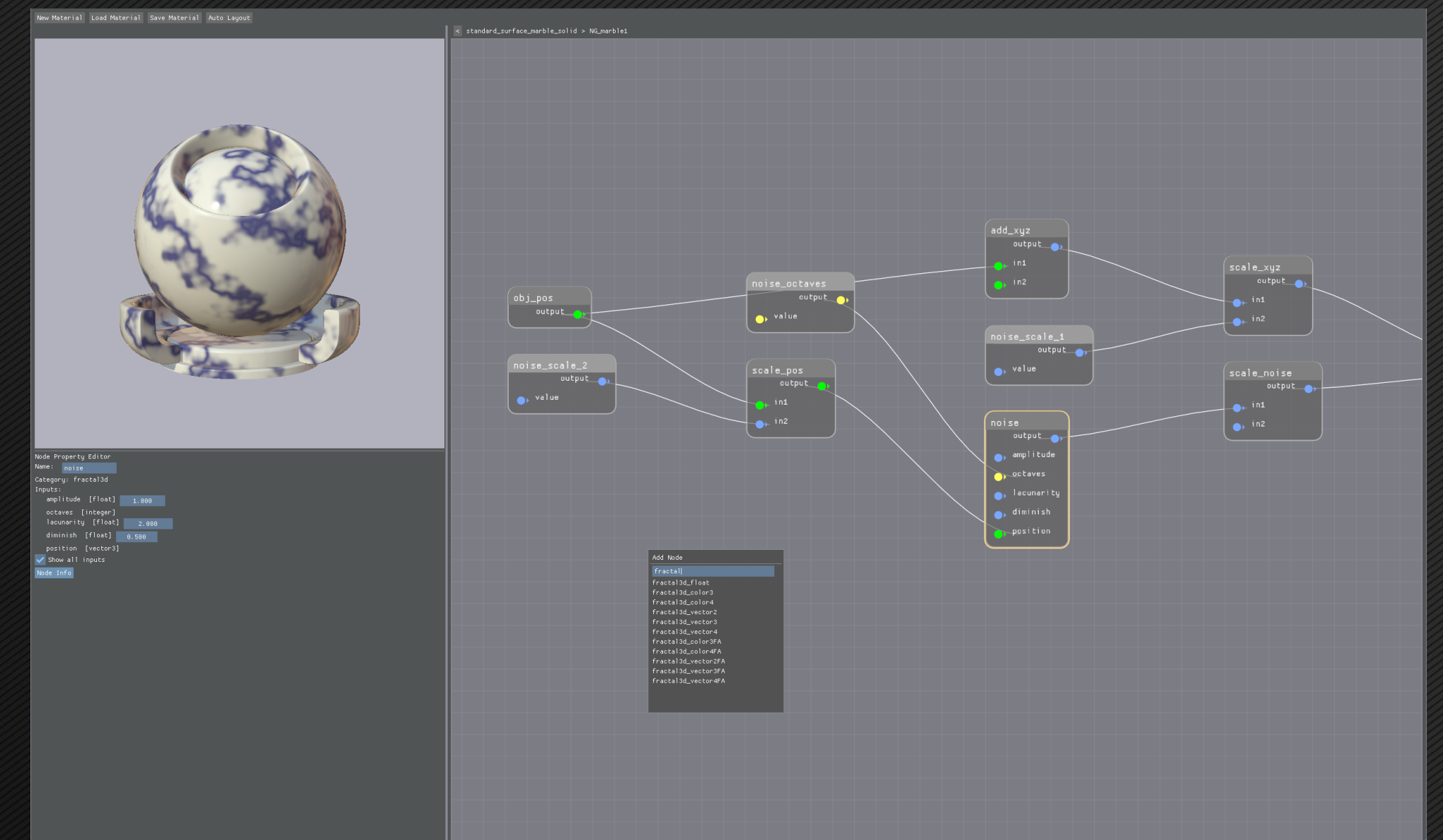
2023 DEVELOPMENTS

OPEN MATERIALX GRAPH EDITORS

- The first two open-source graph editors for MaterialX content

- *MaterialX Graph Editor*, developed by Emma Holthouser at Lucasfilm

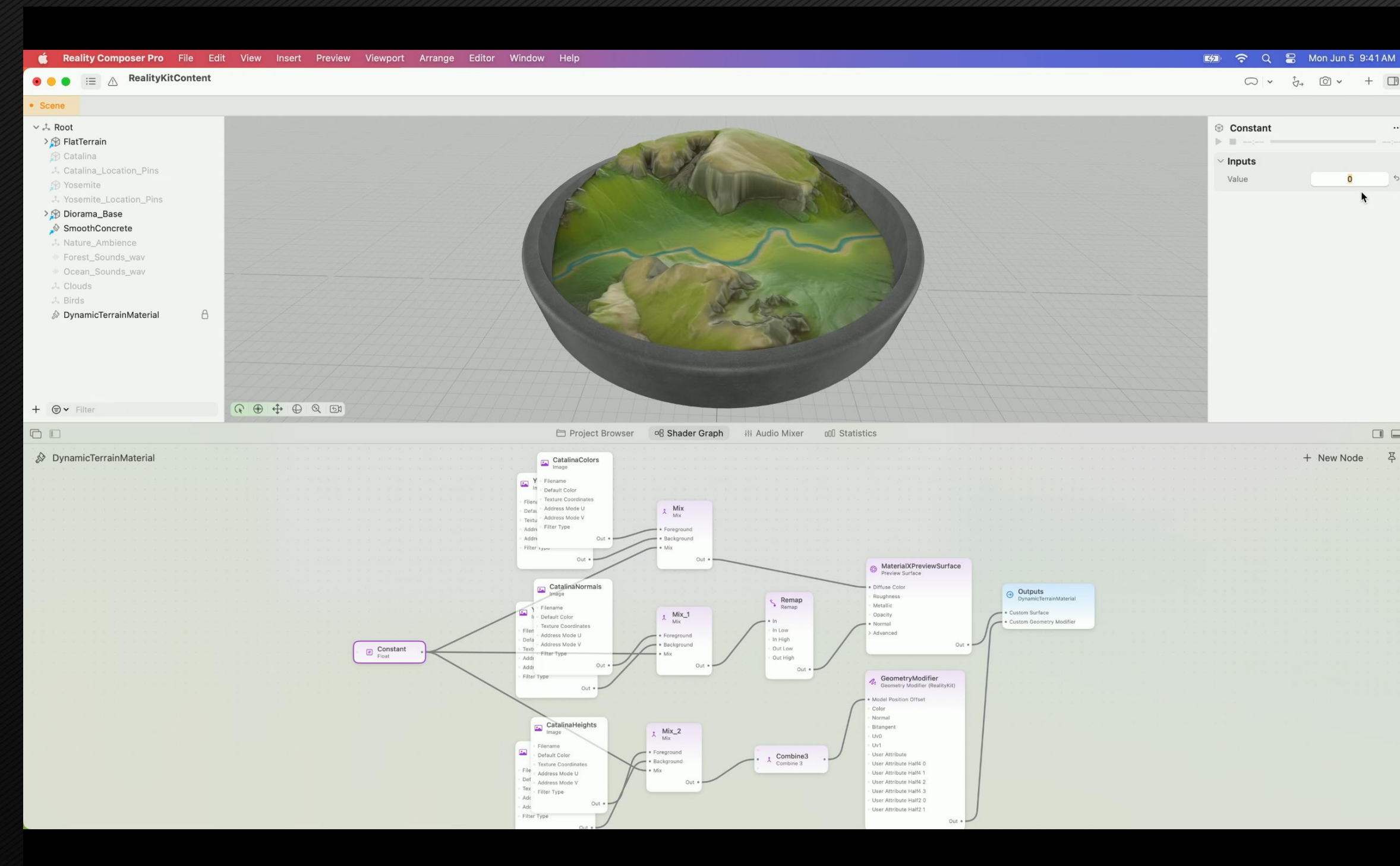
- *QuiltX Graph Editor*, developed by Prism Pipeline



2023 DEVELOPMENTS

METAL SHADING LANGUAGE

- Apple contributed support for Metal Shading Language (MSL)
- A key component of the MaterialX integration for VisionOS
- Early days of Apple/MaterialX collaboration, some great new ideas



2023 DEVELOPMENTS

NEW PATTERN NODES

- Autodesk and SideFX contributed a new set of pattern nodes
- Defined as graphs of existing primitives, so no new client code is required
- Now integrated into Houdini 20



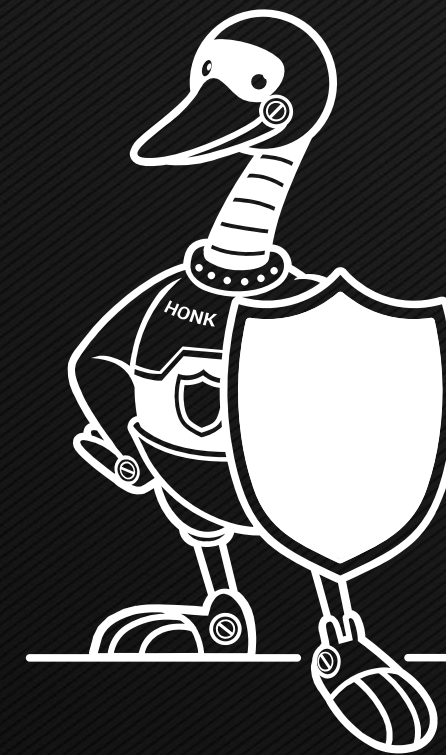
AREAS OF FOCUS FOR 2024

- Improvements to MaterialX for OpenPBR (BSDF nodes, layering rules)
- Improvements to USD/MaterialX integration (color spaces, versioning)
- Initial non-photorealistic rendering library
- New USD Materials Working Group within the AOUSD



PROGRESS ON OPENSSEF BADGE

- Silver Badge: 96%
- Gold Badge: 65%
- Raised C++ coverage to 88%, though rendering modules are not yet included
- Two security requirements remain for Silver Badge



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Thank You!

Questions?