

January 13, 2022

Agenda

- Kick-off with introductions
- Set the context/purpose of this group
- Agree on communication channels
- Discuss goals and identify first steps

Zoom [link](#)

Attendees

- ✓ Alexander Schwank - Apple
- ✓ Arash Keissami - Nira.app
- ✓ Ashwin Bhat - Autodesk
- ✓ Ben Chung-Hoon - Google
- ✓ Bernard Kwok - Autodesk
- ✓ Chris Rydalch - SideFX
- ✓ Henrik Edstrom - Autodesk
- ✓ Jeremy Cowles - Unity
- ✓ Jerry Gamache - Autodesk
- ✓ Jonathan Stone - Lucasfilm
- ✓ Julien Dubuisson - Unity
- ✓ Krishnan Ramachandran - Autodesk
- ✓ Mark Elendt - SideFX
- ✓ Mark Visser - Unity
- ✓ Orn Gunnarsson - Autodesk
- ✓ Prapanch Swami - Disney
- ✓ Rafal Jaraszkiewicz - SideFX

Notes

Material Assignments in MaterialX

Clarify and define separation of concerns. MaterialX 1.39 will clarify that if you are in a USD pipeline the geometric bindings can be handled by USD (Jonathan)

Communicating Ideas to Pixar

Pixar is intentionally taking a step back to allow the community to discuss. But if we have a very focused discussion on a topic then we could include the main developers for Pixar (Alexander)

The best way now to put forward a proposal is to post it on the USD interest group and link to a PR (Alexander)

- ☐ Make Karen and Nick Porcino a part of this meeting (Jonathan)

USD/MaterialX White Paper

- ☐ Write a white paper which focuses on where MaterialX enters USD and highlight current technical limitations, and post to the USD interest group (Ashwin)

USD/MaterialX Test Assets and Framework

Employ versioned test assets in a test suite to visually validate MaterialX materials and color spaces (with USD schemas) (Jonathan, Jeremy)

This would also help others validate that they are getting the correct results.

We can come up with community assets which are complex enough and publicly available, which can be compared against reference images. Preferably small assets that exercise as many features as possible. Jeremy notes e.g. a space helmet that would work well with gltf).

- ☐ There is an asset group kicking off soon, post a link on slack (Alexander)

NVIDIA Participation

- ☐ It's important to get participation from NVIDIA, ping relevant people (Jonathan)

NVIDIA's broad goal is to use MaterialX with Omniverse, where they generate MDL which they can consume.

There are no known examples of areas where MaterialX cannot represent MDL concepts, but the reverse is not true (Jonathan, Arash)

- ☐ Validate?

Reference Renderers

The aim is to have a reference renderer for each shading language and get them to produce results that are as close as possible. The current thinking is that we'll have:

- MaterialXView for GLSL
- TestRender or Appleseed for OSL (something open source)
- NVIDIA to provide one for MDL

How many render delegates support rendering USD shading encoded in MaterialX? (Chris Rydalch)

USDView will be another reference renderer for MaterialX. Looking for alignment and overcoming current multi-translation issues going from MaterialX to USDShade (Jonathan)

Great to then use USDView to test render delegates that you're building (Ben)

Interest in MaterialX USD preview surface to be the reference implementation, to be decided but excitement behind the idea (Chris, Jonathan)

MaterialX String Inputs

MaterialX uses string inputs in nodes which is sometimes used to e.g. geometrically drive a texture map by a UDIM.

It's important to have everything connectable when promoting things to a public interface, and using artist driven connections (Chris Rydalch, Mark Elendt)

- ☐ Bring Mark and Chris into the 1.39 discussion to see if the token mechanism satisfies their need (Jonathan)
- ☐ Does MaterialX need to be more flexible and handle this using inputs instead of a separate mechanism?