0.18

Version 0.18.0 of MtoA is based on version 4.0.7.0 of the Arnold core.

New features include:

- **Ray traced BSSRDFs**: A new alternative to point-cloud subsurface scattering has been added. This method is brute-force ray-tracing based, but produces visually identical results to the pointcloud technique. This approach removes a number of shortcomings of the pointcloud method, trading them for unbiased noise instead. The new method consumes zero extra memory, supports motion blur, supports interactive relighting, is fully multi-threaded, starts up immediately and does not degrade in performance as the scattering radius shrinks. For backwards compatibility this is provided as an option, with point clouds being the default setting. To use ray traced subsurface scattering, check the Raytraced option from the Sampling controls dialog.

- **Mesh light**: First iteration of a new type of light which takes a polymesh as a parameter and emits light using the polymesh's surface geometry. Select a polygon mesh and access the creation of a Mesh Light from the Arnold Lights menu. This will create a live connection with the polymesh geometry so it can be modified. Mesh Light is by default visible to rays. Be aware that the original geometry will still be visible in the scene. Read the mesh light topic for more details.

- A number of other improvements in the Arnold core are of interest:

  - Improved sampling at secondary bounces: The 2D sampling patterns generated by Arnold will now be stratified even for secondary bounces instead of reverting to fully random sampling as before. This can greatly reduce the amount of noise, particularly when rendering things that are seen through near-specular effects like glossy reflections or refractions.

  - Improved sampling for SSS Point cloud: When baking diffuse lighting calculations into the SSS pointcloud, Arnold now uses MIS (multiple importance sampling) to reduce noise from large nearby area lights and the skydome. This may increase the number of rays slightly, but give higher quality sampling in those cases.

  - Improved smoothed normals: The quality of the smooth shading normals stored per-vertex in triangular tessellations has been improved by adjusting the weights used to average the triangle normals around a vertex. In addition to triangle area, the weights now factor the angle between the two triangle edges containing the shared vertex. This will be most evident for coarse meshes where the face normal and the smoothed vertex normals substantially differ.

Other new features:

- First iteration of rendering Maya curves. An Arnold tab is appended to the Maya curves, which allow to define a shader (defaults to a hair shader), curve width and sample rate to render a Maya curve in Arnold.
- Optimized MayaLayeredTexture according to the opacity of each layer (evaluating the entries only when alpha is bigger than zero and not when it is completely opaque)
- Optimized instance and polygon mesh export times.
- First iteration of Multi-channel EXR support. You can merge different AOVs into the default EXR driver.
- Improved the usability of the aiLightBlocker with a locator.
- Stanford's PLY mesh format support in standins.
- There is a now a way to set unexposed parameters in the Arnold core, using a new property, User Options. This is a general purpose property, consisting of a string which can be set to override any attribute of a core Arnold node. This can be useful for accessing new features in newer Arnold core releases even before they are fully exposed in the MtoA user interface. The property can be applied poly-meshes, hair, lights, cameras and point clouds (via the Attribute Editor), and also to the general Arnold render settings.
- Mip Map Bias control in the MayaFile Shader.

Notes:

- MtoA for Maya 2013 is now compiled with MSVC2010.

- MtoA Linux packages link against Arnold-4.0.7.0-linux64

- MtoA Mac OS X packages link against Arnold-4.0.7.0-darwin64