Extrapolation node aligner

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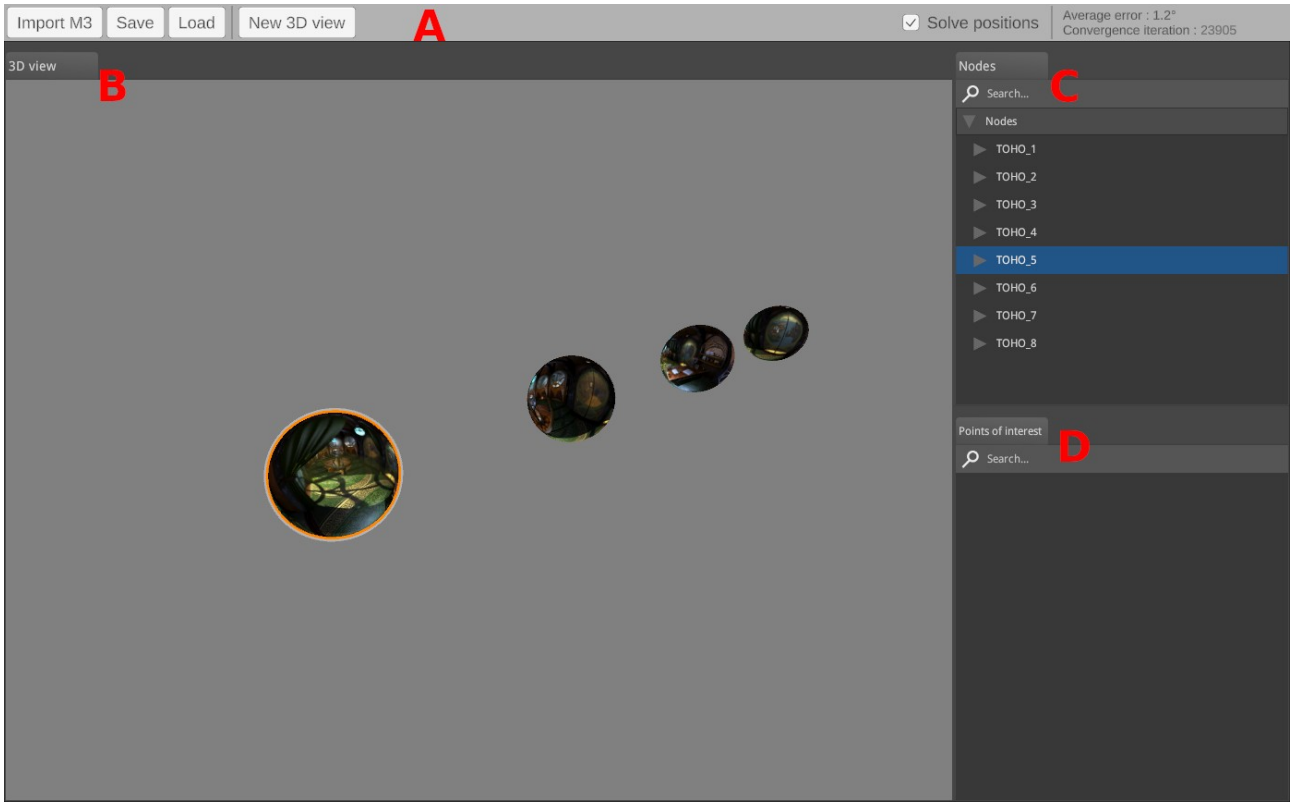
Intro

This software allows you to align Myst III – Exile cubemaps by picking points of interests (PoIs) in various cubemaps. It contains an iterative solver that will try to find the ideal position of nodes and points of interest.

The result can be saved as a “project” file, which can later be imported into Blender to manually remodel the whole Age.

Interface

The software is made of the following panels:



A	Menu bar
B	3D view
C	Node list
D	Point of interest list

- Note that aside from the menu bar, everything is a tab: you can click-and-drag to reorganize and resize the interface, put tabs together, etc.
- The 3D view can also display the inside of nodes – see the controls chapter below.
- You can also open new 3D views using the “New 3D view” button.
- You can select nodes by clicking on them in the 3D view or node list.
- 3D nodes are highlighted in orange when selected, and highlighted in grey when hovered.

Menu

Button/item	Action
Import M3	Import a Myst III – Exile Age as a new project.
Save	Save current project file.
Load	Load an existing project file.
New 3D view	Create a new 3D view tab, which can be moved/anchored anywhere. Useful to see the inside of multiple nodes at once.
Solve positions	If active, the solver algorithm will compute in the background, moving the nodes and points of interest to the ideal position.
Average error	The current average error when solving points of interest positions. The lower the better.
Convergence iteration	The current solver iteration number. As the solver works, this number will increase. It will eventually stop when the solver feels it cannot adjust positions any better.

Typical usage

Here is a short usage scenario so you can get used to the software:

1. Click “Import M3” to import an Age.
2. Select your M3 install folder (where “Data” and “M3Data” are located).
3. Click which Age you want to load.
4. Select where you would like to save the project file. This will also extract all cubemap data.
5. In the hierarchy, select a node and press F2 to give it a better name.
6. In the 3D view, click a node you want to inspect. Press F to view the inside of the node.
7. Ctrl-click to create a new point of interest.
8. Select the point of interest in the hierarchy, use F2 to rename it.
9. Select another node in the hierarchy, press F while hovering the node view to switch to the new node.

10. In the POI hierarchy, long-click the previously created point of interest to create a dragged reference.
11. Drop that reference on the node view. This will link the point of interest to that node.
12. You can click-and-drag the point of interest around if you wish.
13. Click “Save” to save the project.

Controls

Controls are usually dependent on which panel is the mouse hovering (just like in Blender).

Software-wide

Those controls work no matter which panel is focused.

Control	Result
Alt+Enter	Toggles fullscreen
Alt+F4	Exit. WARNING: make sure you save before doing so.
Ctrl-Z	Undo
Ctrl-Y/Shift-Ctrl-Z	Redo

Hierarchies (nodes & POIs)

Control	Result
F2	Renames the current item.
A	Deselects all.
Long-click	Drag the object’s reference. For points of interest, this allows dropping an existing PoI into a node view to link it there.
Delete	Delete the current object (points of interest only).

3D Viewport - normal

Control	Condition	Result
WASD-QE		Move camera forward/back/left/right/up/down.
Left click		Select node.
Right click (hold)		Rotate camera.
Scroll wheel	No other input	Move camera forward.
Scroll wheel	While moving camera	Change camera movement speed.
Left shift (hold)	While moving camera	Move camera 5x faster.
Left alt (hold)	While moving camera	Move camera 5x slower.
F	With a node selected	Switch to viewing the currently selected node.
Delete	With a point of interest selected	Unlinks the given point of interest from the active node.

3D viewport - node view

Control	Condition	Result
Ctrl-Left click		Create a new point of interest (linked to this

		node).
Drop POI reference		Link an existing point of interest to this node.
Right click (hold)		Pan camera.
Scroll wheel		Zoom.
Left shift (hold)	While moving camera	Pan camera 5x faster.
Left alt (hold)	While moving camera	Pan camera 5x slower.
F		Switch back to the normal 3D view, or to another node if selected.

Troubleshooting

If you encounter an issue, please check Unity's log file first:
https://docs.unity3d.com/Manual/LogFiles.html

If that doesn't help or you have other questions, open an issue on GitHub and post relevant sections of log file.