Subject: The problem of importing from scientific imaging systems
Posted by kshort on Sun, 28 Feb 2010 08:32:10 GMT
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Hi all,

I have an interesting problem, basically revolving around non-manifold issues.

I have datasets that are from tomographic scans, which I make a solid binary .bmp stack from. I then use another piece of software to create an isosurface of that, and then I generate a VRML from that isosurface.
I can get a detailed model of 450000 faces, and it is watertight according to AccuTrans3d, and there are 7 edges (14 vertices) shared with 3 or more polygons. Not bad for a model of that complexity, I thought.

.. but blender lights the model up like a christmas tree when I do a non-manifold check (1.35 million edges selected out of 1.35 million). I figured it might be an issue with Normals, so I checked in 3DSmax, and sure enough there were normals facing in, and others outwards. I unified these (automatically) and from my quick look, it seemed to work.

Now when I upload the model, i get a manifold problem, and the same recurring issue with the manifold selection in Blender.

I can't manually generate this mesh, because it is generated from biological data, so I need to fix it. However, I don't know what the manifold issue is that Blender is detecting. It is a single object, tested as watertight.

Can anyone point me in the right direction? The Shapeways tute on Manifold problem ressureciton didn't really help because my problem is so massive.

thanks for any pointers
Kieran

Subject: Re: The problem of importing from scientific imaging systems
Posted by GHP on Sun, 28 Feb 2010 10:12:35 GMT
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Did you deselect all vertices in Blender before doing the non-manifold selection? For some reason, it doesn't clear the current selection, which certainly confused me at first.

Also, you want to make sure that you've removed all duplicate vertices before checking, with the

limit set to zero instead of the default (0.001, I think). Because the VRML uses metres as the units, your numbers will likely be quite small, and both Blender and Shapeways are imprecise when checking for duplicates, so close vertices will be merged.

Subject: Re: The problem of importing from scientific imaging systems
Posted by aoster on Sun, 28 Feb 2010 16:34:31 GMT
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Hi,
I made a quick tutorial how to create a printable file with netfabb:

http://www.shapeways.com/forum/index.php?t=msg&goto=1009 8#msg_10098

bye,
Alex

Subject: Re: The problem of importing from scientific imaging systems
Posted by kshort on Mon, 01 Mar 2010 04:25:19 GMT
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thankyou all for your help.

I think Aoster might be onto something with netfabb..

I'll keep you all updated!

Subject: Re: The problem of importing from scientific imaging systems
Posted by kshort on Mon, 01 Mar 2010 05:24:00 GMT
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Alex (aoster),

Your method worked! I think that NetFabb treatment should be mandatory for all people making models for shapeways!!

Thankyou very much Alex, and thanks everyone else for offering advice.

all the best,

Kieran