

Doomsday Engine - Feature #7

Next-gen renderer (codename "Gloom")

2013-10-11 09:46 - skyjake

Status: Progressed	Start date: 2003-07-10
Priority: Urgent	% Done: 30%
Assignee: skyjake	
Category: Redesign	
Target version: 3.0	
Description	
Doomsday's renderer in version 1.9 was fully based on OpenGL 1.4. There was no support for shaders, for instance.	
All the graphics code should be revised to use the libgui GL classes instead, which are OpenGL 3.3 (OpenGL ES 2) compatible. In practice, this means comprehensive changes to the entire stack of drawing routines:	
<ul style="list-style-type: none">• OpenGL state should be managed exclusively using GLState• Textures and other image content should be grouped in AtlasTextures• Vertex data should be stored in VBOs and kept around as static data as long as possible (across multiple frames)	
Once the entire renderer is using libgui, we can start revising certain portions like how materials are drawn (should use shaders instead of hard-coded effects).	
Subtasks:	
Feature # 6: Draw lens flares using GL2	Progressed
Feature # 1362: Smoothing of dynlights & halos	New
Feature # 1662: Refactor camera lens effects	Closed
Feature # 8: New GL2 based model renderer	Closed
Feature # 1623: Shaders	Progressed
Feature # 1624: Render particles to textures	Rejected
Feature # 1625: Per-pixel surface shading (bump/specular/reflection etc. mapping)	Progressed
Feature # 1626: Area-based fog	New
Feature # 1627: Render game view to a texture	Closed
Feature # 1628: Surface meshes	New
Feature # 1635: HDR rendering	Resolved
Feature # 1370: Halos with fading trails (to go with the slowed occlusion)	Rejected
Feature # 1699: Particle renderer 2.0	New
Feature # 1890: New sequence-based model animation mechanism	Closed
Feature # 1900: OpenGL 3.3 Core Profile	Closed
Feature # 1945: Efficient reuse of world geometry across multiple frames/passes	Resolved
Feature # 2136: Add a map rendering abstraction layer for supporting both Classic and M...	Rejected
Feature # 1233: Surface decorations using 3D models	New
Feature # 2197: Remove the 'Bias' volumetric lighting system and the Bias light source ...	Closed
Related issues:	
Related to Feature #1201: Dynamic shadows	New 2003-06-19
Related to Feature #1615: Sloped planes	Progressed 2013-10-20
Related to Feature #1254: Portal based rendering	Rejected 2003-08-01
Related to Feature #1388: 3D floors (Z-overlapped sectors)	New 2005-09-19
Related to Feature #1313: Submodel rotation angles	Rejected 2003-12-24
Related to Feature #1351: Dynamic Light polys rotated to match THING/Wall angle	Rejected 2004-07-23
Related to Feature #1357: [InFine] More blending modes (add/mul/inv etc)	New 2004-08-17
Related to Feature #1387: Use GL_POINT_SPRITE_ARB for tex particle rendering	Rejected 2005-09-03
Related to Feature #1535: Option for fullbright textures affected by colored ...	New 2011-05-05
Related to Feature #1564: Runtime option for enabling/disabling texture compr...	Rejected 2012-06-24
Related to Bug #552: Ambient occlusion on middle surfaces of 2-sided lines	New 2008-10-24

Related to Bug #882: Fullbright psprites and colored lighting	New	2010-03-31
Related to Feature #1540: Smaller near clip distance	Rejected	2011-06-23
Related to Feature #1636: Support for Oculus Rift	Closed	2013-10-23
Related to Bug #908: Detail texture maximum distance ignored	New	2010-05-11
Related to Bug #606: Shiny texture coordinate issues	Closed	2009-02-10
Related to Feature #1168: Real decals: bulletholes, blastmarks, etc.	New	2003-05-31
Related to Feature #1647: Replace FS1 with FS2-based resource management	Progressed	2013-10-31

History

#1 - 2013-10-11 09:48 - skyjake

- Tracker changed from Bug to Feature

#2 - 2013-10-11 09:56 - skyjake

- Description updated

#3 - 2015-01-13 13:53 - skyjake

- Description updated

#4 - 2015-01-13 13:53 - skyjake

- Description updated

#5 - 2015-01-13 13:54 - skyjake

- Description updated

#6 - 2015-12-22 13:14 - skyjake

- Related to deleted (Feature #1233: Surface decorations using 3D models)

#7 - 2015-12-22 13:20 - skyjake

- Related to Bug #908: Detail texture maximum distance ignored added

#8 - 2015-12-22 13:21 - skyjake

- Related to Bug #606: Shiny texture coordinate issues added

#9 - 2016-03-27 08:41 - skyjake

- Target version set to Rendering

#10 - 2016-07-06 00:02 - skyjake

- Status changed from In Progress to Progressed

#11 - 2017-01-22 08:51 - skyjake

- Related to Feature #1168: Real decals: bulletholes, blastmarks, etc. added

#12 - 2018-10-27 15:01 - skyjake

- Subject changed from Next-gen renderer to Next-gen renderer (codename "Gloom")

- Category set to Redesign

- Assignee changed from Deng Team to skyjake

- % Done changed from 24 to 30

#13 - 2018-10-27 16:10 - skyjake

- Target version changed from Rendering to 3.0

#14 - 2019-11-29 16:34 - skyjake

- Related to Feature #1647: Replace FS1 with FS2-based resource management added