Doomsday Engine - Feature #1699

Feature # 7 (Progressed): Next-gen renderer (codename "Gloom")

Particle renderer 2.0

2014-01-03 12:40 - skyjake

Status:	New		**Start date:**	2014-01-03
Priority:	High		**% Done:**	0%
Assignee:				
Category:	Redesign			
Target version:	Rendering			

Description

The current particle effects system has some severe bottlenecks (it does not utilize the GPU (shaders, VBOs), instead drawing all particles in immediate mode) and some additional flexibility would be good for animating individual particles.

Also, sorting the particles is done pretty inefficiently: particles could for instance be divided into smaller buckets based on map subdivision, and faraway buckets could be sorted less accurately, if sorted/drawn at all.

See: Improvement ideas by veirdo

Related issues:

Related to Feature #1698: Editor for particle generators	**New**	**2014-01-03**
Related to Feature #1677: Square particle shape (option, as alternative to ro...	**New**	**2013-12-05**
Related to Feature #1364: More options for pt_line type particles	**New**	**2004-09-23**
Related to Feature #1745: Performance optimization	**Progressed**	**2014-04-09**
Related to Feature #1168: Real decals: bulletholes, blastmarks, etc.	**New**	**2003-05-31**
Related to Feature #1368: More Alt Start positions in Generators	**New**	**2004-12-11**
Related to Feature #1546: Option for particle generator to hide sprite	**New**	**2011-09-29**
Related to Feature #1242: Player weapon particle muzzle flashes (for external...	**New**	**2003-07-18**
Related to Feature #1289: Flat-triggered particle generators created/destroye...	**New**	**2003-09-17**
Related to Feature #1314: Particle spawn rate affected by mobj visibility	**New**	**2003-12-28**
Related to Feature #1335: Random particle types	**New**	**2004-03-15**
Related to Feature #1336: Random textured particle direction	**New**	**2004-03-24**
Related to Feature #1430: Particle generator decorations (e.g., particles fro...	**New**	**2006-10-07**
Related to Feature #1608: Integrate Doomsday Script	**Progressed**	**2013-10-22**
Related to Feature #1542: Use hit origin for Damage generator	**New**	**2011-06-30**
Related to Feature #1414: Generate particles when touching a plane	**New**	**2006-08-03**
Related to Feature #390: Alignpitch/yaw flags for model particles	**New**	**2007-01-03**

History

#1 - 2014-01-03 12:40 - skyjake

- Parent task set to #7

#2 - 2015-03-21 22:46 - skyjake

- Related to Feature #1745: Performance optimization added

#3 - 2017-01-22 08:51 - skyjake

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

#4 - 2017-04-03 18:55 - skyjake

- Target version set to Rendering

#5 - 2019-11-29 15:27 - skyjake

- Related to Feature #1368: More Alt Start positions in Generators added

#6 - 2019-11-29 15:45 - skyjake

- Related to Feature #1546: Option for particle generator to hide sprite added

#7 - 2019-11-29 16:20 - skyjake

- Related to Feature #1242: Player weapon particle muzzle flashes (for external viewers only) added

#8 - 2019-11-29 16:23 - skyjake

- Related to Feature #1289: Flat-triggered particle generators created/destroyed on material change added

#9 - 2019-11-29 16:38 - skyjake

- Related to Feature #1314: Particle spawn rate affected by mobj visibility added

#10 - 2019-11-29 16:42 - skyjake

- Related to Feature #1335: Random particle types added

#11 - 2019-11-29 16:42 - skyjake

- Related to Feature #1336: Random textured particle direction added

#12 - 2019-11-29 18:40 - skyjake

- Related to Feature #1430: Particle generator decorations (e.g., particles from a wall) added

#13 - 2019-11-29 18:42 - skyjake

- Related to Feature #1608: Integrate Doomsday Script added

#14 - 2019-11-29 19:08 - skyjake

- Related to Feature #1542: Use hit origin for Damage generator added

#15 - 2019-11-29 19:19 - skyjake

- Related to Feature #1414: Generate particles when touching a plane added

#16 - 2019-11-29 23:09 - skyjake

- Related to Feature #390: Alignpitch/yaw flags for model particles added