What's New in DI-Guy 12.5

DI-Guy

HUMAN SIMULATION SOFTWARE

- NEW "ADAPTIVE" GUIDE
- MORE VISUAL VARIATION
- DYNAMIC STANDING

DI-Guy 12.5 | Release Notes

DI-Guy SDK

Note that many features here propagate into Scenario, ECO Sim, and other DI-Guy offerings which use SDK as their foundation.

- **New "Adaptive" Guide:** Guides are used when DI-Guy characters are updated infrequently from external sources such as a DIS/HLA connection. The "Adaptive" guide eliminates dead reckoning moon walking using stepping and strafing motions. See the "guide" programming example for demonstration. DI-Guy recommends upgrading most guides to Adaptive.
- **Multi-threaded Motion Engine:** DI-Guy's underlying motion engine has been stream-lined and multi-threaded for improved performance. DI-Guy leverages multi-core/multi-processor systems to parallel process characters' motion behavior simultaneously. Related functions for controlling multi-threading have been added to the diguyApp class.
- **Modular Heads:** Latest character appearances feature make greater use of modular heads. While previous DI-Guy versions might have 10 visual appearances of a male suit character, version 12.5 now offers 10 head appearances that can be matched to 10 body appearances, resulting in 100 unique combinations.

- **Variation System:** The new GPU-based DI-Guy variation system creates low cost unique colored appearances to allow large crowds to be populated by uniquely clothed characters.

The Variation System can be sampled in DI-Guy Character Viewer as shown here

- By combining Modular Head appearances, randomizing character scaling, and the Variation System, a visually disparate and more realistic crowd results.

- **Multi-threaded Asynchronous Texture Loading:** A new asynchronous texture loader has been added to the SDK, allowing DI-Guy to load quicker at startup, during runtime, and in background.
- **Advanced Lighting Effects:** New lighting system triggered by particle effects and weapons fire.

Point Light Shader Samples

- **Expanded Shader Technique API:** Users can compile shaders on the fly with customized functionality and callbacks allowing runtime selection of shaders.
- **DI-Guy SDK Reference manual upgrade:** Doxygen for improved user experience.
- Users porting DI-Guy solutions from earlier versions are encouraged to consult the ***Transition to DI-Guy 12/12.5*** guide appendix to the DI-Guy SDK User Guide. Topics include:
    - Shader Uniform Binding
    - Shader Techniques
    - Multitexturing and texture binding
    - Multitexturing and compressed texture maps
    - Linear lighting and gamma correction
    - 4x3 Matrix Skinning
    - Informing DI-Guy of shader-supported texture maps
    - Shader LODs

- Linear Draw Pipeline is now the default
- Simplified Parented Character Drawing
- Shader GL_POSITION change
- Data driving shaders via configuration files
- How to leverage DI-Guy bump map support
- Segmented and skinned models supported with Collada – new vertex formats

- Hundreds of bug fixes and enhancements:
  See *$(DIGUY)/doc/diguy_sdk_reference/doxygen/changelog.html* for a complete list.

DI-Guy Author - beta

DI-Guy Author lets customer applications embed the popular DI-Guy Scenario user interface for scenario creation, enabling advanced human simulation authoring and AI capabilities to be directly resident in the application. Interactive waypoints, paths, PeopleBlitzing™, CrowdBlitzing™, and region editing supported. Sample implementation for OSG provided in programming examples. Talk to a DI-Guy salesman to explore if DI-Guy Author is the right solution for adding human character authoring capabilities to your 3D simulation environment.

- **Arbitrary Vertex Input into Octtree and Navmesh generators:** DI-Guy octtree and navmeshes can be created from user supplied arbitrary vertex information.

DI-Guy Networking

- DIS custom PDU support has been expanded to support scaling, gestures, and the new Variant system. See the ***DI-Guy SDK Reference Guide*** regarding diguy_dis_constants.h.

DI-Guy AI

- **Dynamic Standing:** AI Characters (Agents) that are standing with "normal" variant will cycle randomly through all standing actions labeled as such. Resulting characters have eye-pleasing rich behavior instead of static standing or single action repetition.
- **Improved Agent Turning Behavior:** Automated stepping behavior is invoked.
- **AI State Inspector Debugging Tool:** Right-clicking on Agents accesses State Inspector user interface for monitoring Lua and C++ Mind activity.
- **High Performance Crowd Collision:** Significant performance improvements verses 12.0.x.
- **Crowd Profiles leverage new Variation System:** See above for variation system description.

DI-Guy Licensing

- We have incremented the licensing version from 12 to 12.5, so existing DI-Guy 12 and earlier licenses will not work with DI-Guy 12.5. Maintenance customers will be automatically upgraded to 12.5. Contact diguy@diguy.com to obtain new licenses if you have any problems. A 30 day grace period for old licenses is built into the code.

DI-Guy Version Information

Operating System	Windows 32	Windows 64	Linux 64	Linux 32
Latest Version	12.5.0	12.5.0	12.0.2	11.0.2[2]
Compiler	MSVC10 (2010) MSVC9 (2008)	MSVC10 (2010) MSVC9 (2008)	gcc 4.4 RHE5	gcc 4.3 RHE5
Renderers	OpenGL OpenGL GAPI[1] OSG GAPI[1] DirectX9 GAPI[1]	OpenGL OpenGL GAPI[1] OSG GAPI[1]	OpenGL OpenGL GAPI[1]	OpenGL OpenGL GAPI[1]

[1]DI-Guy Graphics API Open Source Renderer Integration

[2]Final Version of Linux 32

DI-Guy 12.0 Release Notes

While a distinct new release in its own right, 12.5 builds on many of the advancements in DI-Guy 12.0. For more information detailing these advancements see DI-Guy 12.0 Release Notes.

New Content

The following pages illustrate some of the new character appearances, expressive faces, props and vehicles available in DI-Guy 12.5. In addition, the ch47 marshaller character type has had the motions talk1-5, look_at_watch, move_bag and other miscellaneous actions added to its repertoire. Users are encouraged to review all appearances and actions in the expanded DI-Guy Character Viewer, upgraded in 12.0 and 12.5 to offer both visual and detailed information (e.g. – number of polygons, source geometry paths, etc.) regarding DI-Guy content.

DI-Guy 12.5

CHARACTERS*

*Characters using Expressive Faces™

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DI-Guy 12.5

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PROPS & VEHICLES

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