



DI-Guy 13.6 Release Notes

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Document ID: DIG-13.6-8-220408

Systems Supported

This section describes platform support and system requirements for DI-Guy. To take full advantage of DI-Guy's visualization capabilities and optimize performance, you must use a modern game computer with a high quality NVIDIA graphics card.

For the most up-to-date information about systems supported, see the Product Versions page on the MAK web site at: <https://www.mak.com/support/product-versions>. For hardware requirements, see <https://www.mak.com/support/hardware-recommendations>.

DI-Guy 13.6 is available for the platforms listed in Table 1. For toolkit users, application code must be built with the indicated compilers in order to link to DI-Guy libraries.

Table 1. Platforms supported

Operating System	Compiler
Windows 10	Microsoft Visual C++ 15.0 (64-bit)
Red Hat Enterprise Linux 8.0 (64-bit libraries)	default compiler

Renderer

DI-Guy 13.6 supports the following renderers:

- Windows 64 bit: OpenGL, OpenGL Graphics API, OSG Graphics API.

License Manager

DI-Guy 13.6 uses FLEXlm 11.17.1. You must install the license management software to run DI-Guy. If you are upgrading from a version of DI-Guy that used an older version of FLEXlm, you must upgrade your license management files. You do not need a new license. Licenses are forward compatible.

The License Manager files are not part of the DI-Guy installer. You can download them at:

- Windows: <http://ftp.mak.com/out/MAKLicenseManager-win64-setup.exe>
- Linux: <http://ftp.mak.com/out/MAKLicenseManager-linux64-setup.tar.gz>

A license manager FAQ is available at <https://www.mak.com/support/license-support>.

Network Compatibility

HLA Only

DI-Guy 13.6 was built against VR-Link 5.8 and is compliant with:

- RPR-FOM 1.0 and 2.0.
 - MAK RTI 4.1 or later.
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DIS Only

DI-Guy 13.6 supports DIS 4, 5, 6, and 7.

RTI Support

We recommend using the most recent version of the MAK RTI. However, DI-Guy should work with other RTIs that conform to the HLA 1.3 specification, the IEEE 1516 SISO DLC API or HLA Evolved, and are built with the same compiler as DI-Guy.

When using the MAK RTI, remember to make sure that DI-Guy can find your FED file, and optional *rid.mtl* file, by either putting them in the directory from which you are running, or by setting the environment variable to the directory that contains them.

FOM Support

DI-Guy 13.6 has built-in support for RPR FOM versions 0.5, 0.7, 0.8, 1.0, and 2.0. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, DI-Guy 13.6 uses RPR FOM 2.0. It is recommended that you use the DI-Guy FOM Extensions. DI-Guy includes two custom FOMs, one for HLA 1.3 and HLA 1516, and one for HLA Evolved.

New Features and Updates

DI-Guy 13.6 has the following new features and updates.

Application Changes

This section describes changes to the DI-Guy products.

- Added FBX support for models.
- Improved internal file loading after appearance change requests, which should shorten stalls when a number of characters change appearances at the same time and improve multithreaded geometry loading.

- Arm and rank patches now support multi-texturing:
 - `diguyGraphicsState::get_texture_array()` added to support access to that data.
 - Texture units enums `DIGUY_TEXTURE_MAP_TYPE_DECAL_SPECULAR` and `DIGUY_TEXTURE_MAP_TYPE_DECAL_BUMP` added as well.
 - `diguyTextureUniformPatchLocations` added for lookup accessors.
- Improvements to blend shape infrastructure. FBX can support multiple morph targets. Support for animation and api control of blend shape weights. Shaders now use an SSBO to store blend shapes, and a `vec4f` and `vec4i` to represent up to 4 active blend shapes. Most of the shaders have been upgraded to support changes. `diguyGraphicsMesh` now includes access to ssbo data `diguyGraphicsMesh::get_data_as_blend_shape_verts()` and `diguyGraphicsMesh::get_blend_shape_vertex_buffer_size()`. `DIGUY_GRAPHICS_VERTEX_FORMAT_V4_N4_T4` is the format for SSBO data.
- Added `diguyCharacter::set_blend_shape_weight()` for controlling blend shape
- The Qt message handler is no longer installed by default. If you want an applications to use it will need, you must call `diguyApp::install_qt_message_handler`.

DI-Guy Scenario:

- Safe mode for DI-Guy Scenario turns off the Movie Maker.

DI-Guy Motion Editor:

- Added the ability to remove parts of FBX import animation string names, which was needed for multi-character performance import from Autodesk Maya.
- Added visualization of rotation and translation and other data to the Motion editor's Outliner widget.
- Added FBX animation import support.
- Added a UI for editing aim motion division frames in the Action Editor Table for aim motion arcs.
- Added a UI for exporting DAE from the Project window.

Character Viewer:

- Added Save and Load buttons to the Character Viewer's Script Editor.
- When working with unencrypted data, right-clicking on DAE/FBX and textures in the geometry viewer now shows an option to Open the file in Editor. This opens the file in the default program for that file type.
- Appearance editor improvements, more features for editing hand items and heads, weapon data.
- UI improvements:
 - Left-click joint focus.
 - Right-click context menus.
- The Appearance Editor can now edit weapon data and munition data.
- The Visualization menu now centralizes view options.
- Added a filter for most of the list boxes.
- Show/hide shape controls.
- Added Action Info display
- Character Viewer now has dark mode.

New Content

This section illustrates some of the new content in DI-Guy.

New Character Appearances

The characters represent:

- Belgian soldier
- Canadian sailors
- Colombian Air Force, Army, and police
- Dutch soldier
- Additional US Swat appearances



The segmented felin soldier and various felin character types have been removed. The new skinned model still provides the removed older content.

New Hand Items

- HK MP5 (submachine gun)
- Baton
- Baton and shield
- Riot shield
- Binoculars
- Bernelli shotgun

- Galil Córdoba rifle
- L85A2 rifle with Underslung Grenade Launcher

API Changes

- Added methods for querying the rank and arm patches for appearance: `diguyScenario::get_appearance_default_patch_index()` and `diguyScenario::get_appearance_default_patch_id()` for getting the index or ID of the default patch for a given appearance. (VR-Forces 5.0 supports setting and displaying rank and arm patches, and also name patches.)
- The OSG demo code now builds against a more recent version of OSG (3.5.6).
- Added type map field values to make the type map logic usable:
 - Added `diguyCharacterTypeMapFieldValues` class for specifying type maps for querying for type maps matching a given set of values.
 - Added accessors returning `diguyCharacterTypeMapFieldValues` to `diguyCharacterTypeMap`.
 - Added `diguyScenario::get_num_matching_type_maps()` and `diguyScenario::get_matching_type_map_at_index()`
 - Added `diguyCharacterTypeMap::match_level` function to allow for manually performing checks against other type maps.
 - Moved `diguyCharacterTypeMapField` enumeration to `diguy_constants.h`
- Added new `diguyActionParameters` struct for actions. Added overrides for `force_action` and `set_desired_action` to take the new `diguyActionParameters` struct.
- Added `diguyCharacter::set_ik_target_character()` allows targeting another object and having IK system look it up every frame. IK works better in high precision far from origin databases.
- Improved variation system to use seed values. Added `diguyCharacter::set_texture_variation_seed()` to allow multiple runs and channels to have identical visuals.
- `diguyGraphicsLink::fill_out_tbo_position_matrix()` SIGNATURE has changed to take an LOD parameter. This was needed for more complex model support.
- Added `diguyCharacter::get_connection_point_info_at_index()` and `diguyCharacter::find_connection_point()` query functions for getting connection point information.
- Improved background loading in `diguyScenario::async_load_appearance()` and `diguyScenario::async_load_hand_item()`.
- Added display name configuration for actions and `diguyScenario::get_character_type_action_display_name()` for querying.
- Added an override for `set_desired_action` and `force_action` that uses new `diguyActionParameters` struct for options. Added an option to set separate action and transition speed (or speed scale) when using `set_desired_action` and `force_action`.

Documentation

The Documentation Center and Master Index has been replaced with HTML5 help. It has a modern look and includes a comprehensive search utility. The help is included with DI-Guy and does not require an internet connection.

Documentation has been updated for this release. The guides are provided as PDF files in the `./doc` directory. You can also find the most current PDFs at <https://www.mak.com/support/product-user-guides>. (You must be able to log in to the web site.)

Fixed Bugs

This release fixes the following problems:

- DIG-481. Parenting works better in high precision far from origin databases.
 - Fixed a bug where appearance changes to a parented character could double up their offset.
 - Setting the character's position should update the position of child characters as well, fixing a 1-frame shudder identified in a test case.
 - Fixes to calculation of `diguyCharacter::global_to_character_local()` when character is parented.
 - Fixes to getting the link position when the character is parented, should no longer return parent link position.
 - The link index that a character is parented to is now sent on the network as the station number.
- DIG-489. Fixed some regressions with FaceFX demo and optional miscellaneous blood and grime texture maps.

The `diguyGraphicsShape::set_material_parameter_4f()` no longer requires preset uniform names.

- DIG-490. Fixed an issue where the Appearance Effect box in the Character Viewer was unreadable.
- DIG-491. Fixed left/right export bug in the Motion Editor.

Fixed a number of Motion Editor UI regressions in the animation blend tree tester.

Fixed a number of Motion editor bugs with creating and editing gestures.

Known Problems

For information about resolving issues with running DI-Guy applications, see "[Troubleshooting Display Issues](#)" in the *DI-Guy Getting Started Users Guide*.