DIAMANT-FILM RESTORATION
HS-ART Digital Service GmbH

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What is new in DIAMANT-FILM Restoration V13.5?

The version V13.5 is a major service release to the V13 and V13.1 version. This release contains many small fixes and features. The details can be found in the changelog file provided in C:\Diamant\What_is_new_in_V13.X.txt or email to support@hs-art.com to request it.

However, there are some important things to mention in V13.5

- StabAuto: Improved pan detection and handling preserve first/last with zoom border handling
- Improved playback engine. Please make sure to set the pre-read frames to 24 in the I/O settings.
- Improved project file size if grain templates are used
- Added StabROITracking filter
- Improved StabBorder filter

Also check out our video tutorials: https://www.hs-art.com/index.php/tutorials/video-tutorials-overview

What is new in DIAMANT-FILM Restoration V13 & V13.1?

Highlights

- Artificial intelligence (AI), DeepDust, scaling, …
- Basic editing functionality in RestorationManager+
- User management for better collaboration
- New batch render with render queues and scheduled renderings
- Export queues, batch export for videos, folder per shot, …
- Project templates for workflow automation
- Scratch disk
- REST API for 3rd party workflow integration

Improvements

- Multi selection improved. Change params on multiple filters
- Stab graphs now for all stabilization filter
- LUTs per scene via Display Track
- StabTracking improved
- Scratch: Improvement of Inpainter
- Annotation shortcuts behave now like other tool shortcuts
- Rect ROI support for OFX Plugins
- Field aware ROIs
- History filter supports external masks
- Per user installation. Non admin mode installation.
- Cinema DNG support
- Timeline improved

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- Improved software update for render clients
- Branch project to create alternative version
- Proxy only mode for stepping and playback
- Customizable project metadata paths for DutBuster+
- Restoration report improved
- Repeat marker patterns
- And many more….

Third party Plugins

There have been updates for several third party plugins for DIAMANT-Film.

- RE:Vision Effects plug-ins now running in DIAMANT-Film V13
- Update of NeatVideo de-noise plugin
- Update of Cinnafilm Dark Energy and Tachyon plugin
- FFPicture's MultiAntilAliasing is now freely available for DIAMANT-Film V13 users. The plugin is automatically installed and offers efficient handling of aliasing effects (ff.de/anti-aliasing-plugin)

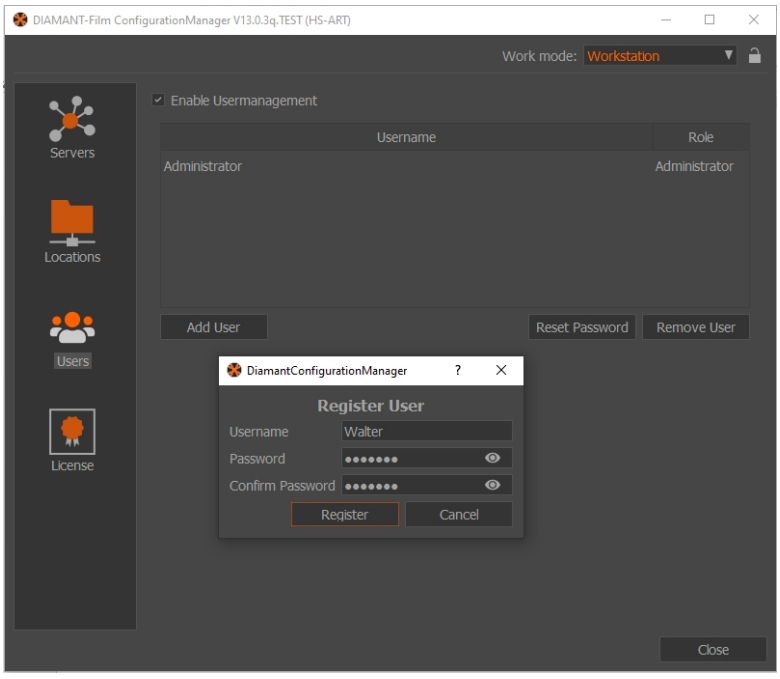
User Management

In order to work efficient in a complex environment with multiple operators a User Management is an important feature that is available since V13. As DIAMANT-Film is available on different operating systems, the user management needs to be done on top of the user management of the operating system.

I. Configuration

As a first step, the user management needs to be activated. This and all administrative demands are controlled by the DIAMANT-Film Configuration. Starting the Configuration leads to a new entry called "Users".

Selecting this the first time forces to assign a password for an "Administrator" user. Following that, additional users can be freely registered. Having done all these settings, it is recommended to lock the Configurator. To do so, a click on the key-lock symbol (top right corner of the widget) is recommended. This avoids any unauthorised access to the DIAMANT-Film Configurator and also protects the user management.



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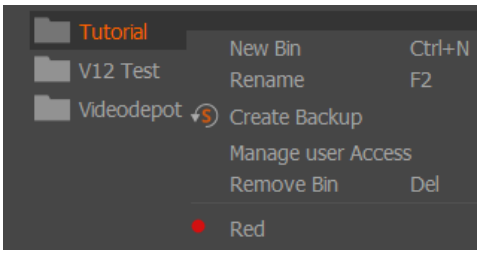
II. Locking Projects

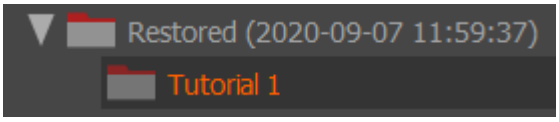


Only the Administrator can LOCK projects. To do so, the Administrator can click-right on the bin-view of the Project Manager and select "Manage user access". In the following widget, the Administrator can define, which Usernames might access the project.

Note: In a typical configuration the workgroup-leader would be the Administrator. When dividing the work and assigning them to its operators, he could also lock the project and assign only the preferred Username to the project. The Administrator itself does anyway have full access to all projects.

III. Working as a registered User

When starting the ProjectManager the operator is asked for Username and Password. If the operator does not give this information, he can only access those projects that are not locked.



If the operator is successfully logged in, she can access all unlocked projects and those projects that are protected for the given Username. Any locked projects (protected for other users) are shown with a red bar on its bin. It is recommended to LOG-OFF when leaving the workstation, avoiding any unauthorised access to the projects.

ProjectManager Queues

What was earlier BatchRender is now organised in queues. Basically ProjectManager uses 3 different queues: 1. "PreProcess", 2. "Add to Render Queue" and 3. "Add to Export Queue"

Any relevant and required operator action can be sent to a queue, where it will be automatically processed by support of the RenderManager.

Note: it is possible to select multiple projects in ProjectManager and then initiate the desired queue.

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I. PreProcess Queue

Preprocess is logically separated from the actual rendering, as it does not create any resulting images in the output. It is rather an analysis that speeds up any later restoration action. Sending a clip to preprocess means that depending on the chosen options, the clip is going to be prepared for efficient restoration. The options include:

- Shot detection
  Automatic analysis for detection of hard cuts. Excessive frame borders can be masked out by a larger value for "Border protection".
- Preview/Proxy
  Indicates if Preview proxies should be prepared. This is then useful, if the hardware environment is not sufficient performant to provide a real-time playback of the full resolution files (e.g.: 4k DPX on standard disks). The Preview proxies are usually compressed JPG-files, that can either be in the full resolution (default) or a reduced size (e.g.: 2k for 8k files).
- Transfer source images
  This option is only requested if the original files shall not be further referenced. In this case an internal copy of the original files will be created. This is useful, if the originals are on a portable device that might be later on taken away. The disadvantage of this option is, that the required disk-space increases significantly.

After verification of the PreProcess Options, the project can be added to the queue for rendering. However, there are some administrative options for this step available:

- Force ReRender
  If selected, the preprocess will be rendered, even if it was already rendered before. If de-selected, it might re-use the results from a previous rendering.
- Render on … Workstation and Clients / Workstation only / Clients only
  Defines where the preprocessing should be rendered.
- Configuration
  Defines the error-handling. "Continue on error" means, that any errors are ignored and the process is continues to its end. "ReRender per default" would result in a repeated re-rendering of failed render sections.

After final confirmation, the project is added as a job to the preprocess queue and sent to the RenderManager. The render progress itself is also indicated in the ProjectManager.

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II. Render Queue

All predefined projects that are accessible from ProjectManager can be submitted for rendering. Any project sent to rendering will be added to the so called Render Queue. This includes not only optional PreProcessing, but also Export. Related parameter descriptions are provided in the description of the PreProcess resp. Export Queue.

A project containing several generations will be sent to the rendering including all generations that are based on the selected one. For example: If “Add to Render Queue” is started on Generation 2 in a project having 4 generations, Generation 2 -4 will be rendered. The earlier Generation 1 is considered as basis and should be already quality controlled, before the rendering is initiated by the operator.

III. Export Queue

The Export Queue is made to administrate exports of full projects that might require a certain time to be completed. The options of the export include:

- Export Format
  All supported formats can be selected.
- Export Directory
  Location of the exported clip in the file system.
- Create subdirectories / Single directory
  If multiple projects are selected for export, the hierarchy and structured can be defined here.
- Create subdirectory per shot
  Defines if the shot- resp. cut information should be used to structure the export.

Project Templates

Project templates are generalised workflow descriptions, that can be applied on other projects. For instance, it is possible to define a templated containing a Dust-Filter and a Noise-Filter with specific parameters. This template can then be applied on a larger number of imported clips.

I. Template definition

There are a few ways to define a template. The most simple method is in the RestorationManager, starting from a timeline with a reasonable list of filters.

If “->Export ->Export Metadata ->Export Project Template (*.djx)” is evoked, then the workflow (list of filters and tools with generalized parameters) are exported as template in a file with extension *.djx. This template is then ready for use.

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Note: It is important to consider the current position within the film, because the template is generated exactly from the current active position within the clip. It is also important to use only filters and tools that can be principally well generalised. Content specific filters such as TrackPoints should not be used in templates, as the result will not be correct!!!

II. Use of templates

A template can be activated for any clip in the ProjectManager. To do so, the context menu provides an entry "Apply Template", that can be chosen on any generation.

- Select Template
  Location of the template file with extension *.djx.
- Apply Template only to empty/new projects
  By default, the template file will only be used in projects where there are no other definitions done yet. If this is de-selected, the template information will be added on top of the pre-existing timeline.

Machine Learning & Artificial Intelligence (AI)

I. ReFrame

ReFrame is a complete re-design of the Crop supports optimized ways to crop, pan & scan, add blanking and upscale to deliver the desired final product. The new Artificial Intelligence (AI) based upscaling ensures the best possible results for finishing your project.

Due to its groundbase, this function is limited to workstation equipped with *NVIDIA RTX graphic cards*, but there is a fall-back to traditional upscaling, in case of other graphic cards.

II. DeepDust

Based on the traditional and well known Dust-Filter, a new filter DeepDust is available. The filter combines different machine-learning methods to detect and follow the moving objects through the scene. Based on this AI motion-model the efficiency of detection and classification of Dust and Dirt spots is significantly increased.

The filter requires a proper RTX graphic card and an AI-package to be installed in addition to the Diamant-Film software. Due to the size of the file (~1 GB), it needs to be separately downloaded from our install-website.

The link is: https://cloud.hs-art.com/aimodules

Tracks in RM+

There are new track types available for the timeline of RM+.

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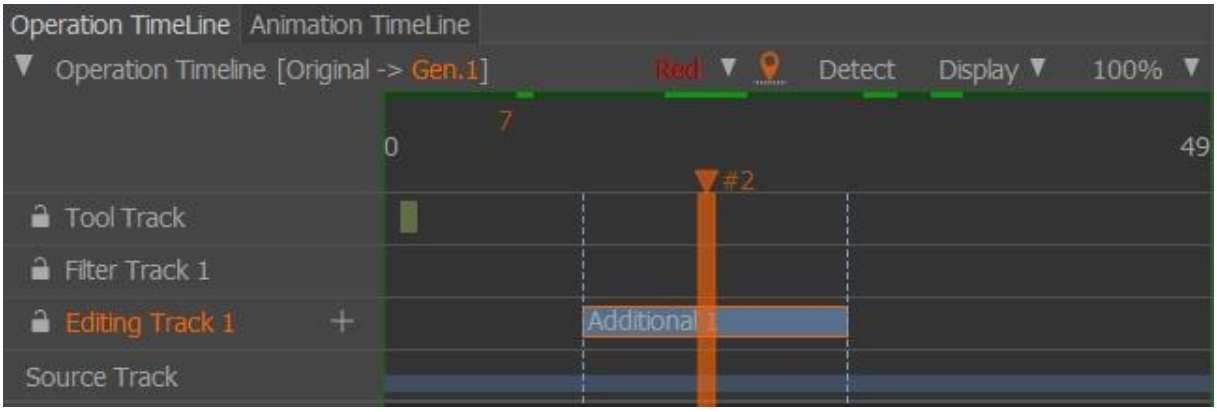
I. Display Track

This track allows to select LUTs on the time-line as if it would be filters. Consequently different ranges and parts of the film can be used with different assigned LUTs.

II. Editing Track

This track provides an environment for a basic editing and is only available in the first generation. To use it, at least one "Additional Source" needs to be loaded. The timeline in the Editing Track is then used to indicate where the clip is coming from. This is specified in a filter called "Additional input" that is available for selection on the Editing track.
Parameters of this Additional Input are:
Additional source: Any "Additional Source" (see menu ->Open Additional Source)
First frame in filter: Defines the positioning of the start point of the additional input.



Note: There is no rendering needed for the Editing Track and its filters. The result is immediately available.

Scratch Disk

DIAMANT-Film now supports a so called "scratch disk". This is a local storage room that is used to store intermediate files in order to reduce unnecessary re-renderings.

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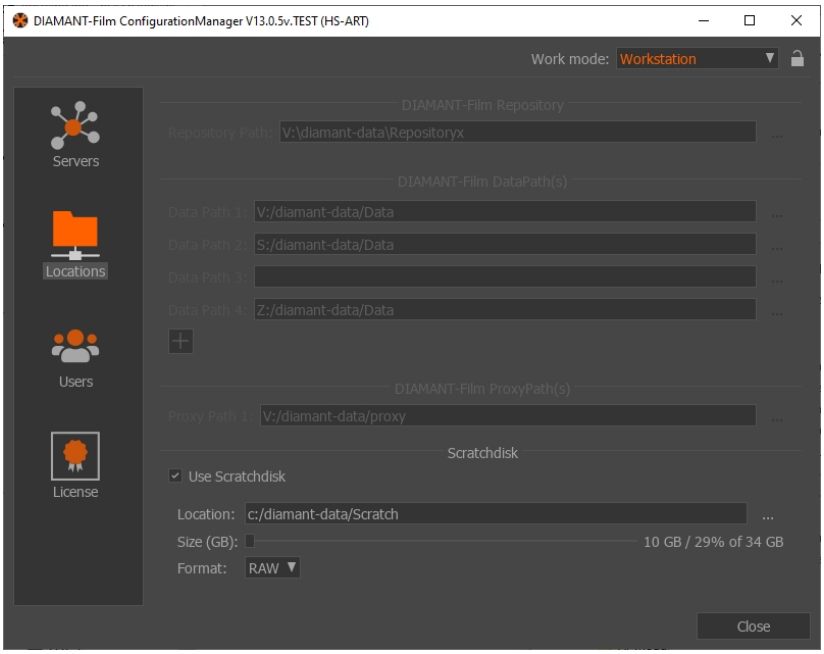
For example, if there are several filters in one scene and the parameters of an intermediate filter are changed after rendering, all underlying filters do not need to be re-rendered if the scratch disk is used. Without scratch disk, all filters in the scene would have to be re-rendered.

The scratch disk can be configured and defined from the DIAMANT-Film Configuration in the Locations dialogue.



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