

## DIAMANT-Film - Technical Features

1. Operating systems: Windows 7 (64bit) / SERVER 2008 R2 / VISTA / XP (32/64bit)
2. Supported file formats:  
*All standard single image formats (DPX, DPX-monochrome, CIN, TIFF, TGA, JPG, JPG2000; openEXR, SGI, BMP, ...) in 8/10 or 16 bit  
AVI and QuickTime as well as MXF-containers;  
any other format on request;*
3. Supported resolution  
*Any resolution up to 6k has already been proven in industrial level on projects with various customers. Support for any higher resolution on demand.*
4. integration of DIAMANT-Film into other software:  
*DVS Clipster and ASSIMILATE products are fully supported and integrated into the workflow.*
5. automatic dirt, dust and scratch removal including defect (IR) map support real-time floating point  
*The "Dust" filter of Diamant-Film can use Defect (IR) maps from various scanners and providers.  
"Dust" is a filter that can do motion compensated (optical flow) spot, dirt and scratch detection and removal in 3 modes (automatic, semi-automatic, manual).*
6. open API and SDK  
*Diamant-Film offers an open API to develop user dependent filters for many years. Indeed we have several customers that have used their in-house know-how to make specific filters. This offer includes a full API and a development license for such development purposes.*
7. paint system including clone, dust-busting and repair brushes  
*The interactive retouch tool "DustBuster+", that is part of the software supports various brushes and cloning from different sources, given the 4 dimensional clone source selection (sequence, temporal offset, spatial offset). Additionally there is a powerful semi-automatic DustBrush, that heals detects and heals spots automatically inside manually marked region. With SpliceRepair and Interpolate it is possible to recreate destroyed images or parts of it.*
8. image stabilisation including frame rebuilding  
*Diamant-Film provides various tools for image stabilization. "StabAuto" is an automatic tool for stabilization of movie sequences in terms of horizontal- and vertical offset as well as in rotation and scaling based on global camera motion detection. There is another tool "DShake" that is based on object motion detection and further stabilization. Manual stabilization by point lockers and trackers is as well possible as stabilization of the perforation or camera cache ("StabOverscan"). Frame rebuilding is integrated in the tools, frame borders can be corrected in various ways (filling the border from other images, filling it from the same image, zooming, create a well defined new camera-cache).*
9. de-flicker, Global de-noise/sharpen/blur  
*Diamant-Film´s "DFlicker" works on the basis of reference-frames and can correct brightness and color instability (=flicker) in between. Correction is motion compensated and corrects either global or local irregularities down to various object sizes. "DNoise" and "Sharpen" are 2 separate filters in Diamant-Film, that permit to correct temporal and spatial invariance as well as blur (to a certain limit).*
10. comprehensive Noise/Grain management  
*Noise/Grain management is easy and simple. There are some predefined grain-patterns and furthermore the operator can automatically extract self-defined grain-patterns from any movie and apply it to any other movie inside Diamant-Film. The tools to tackle grain and noise management are called "DGrain" and "RGrain".*
11. vertical line scratches  
*Diamant-Film includes filters to detect and correct vertical lines are called "LineScratch" and "VerticalLine".*
12. automatic removal of static dirt, dead pixels and camera hairs

Wie arbeiten aufgrund der Allgemeinen Bedingungen für den Verkauf und die Lieferung von Software - Support Leistungen, sowie für Dienstleistungen in der Informationsverarbeitung durch Rechenzentren und den Verkauf und die Lieferung von Organisations-, Programmierleistungen- und Werknutzungsbewilligungen von Softwareprodukten - empfohlen vom Fachverband Unternehmensberatung und Datenverarbeitung sowie vom Bundesministerium des Maschinenhandels, Berufsgruppe Büromaschinenhandel und bei uns zur Einsicht liegenden Fassung.

Handelsregister: FN 175664f, UID: ATU45810109

Raiffeisenbank Lieboch-Stainz BLZ: 38210, Konto: 27656, SWIFT/BIC: RZSTAT2G210, IBAN: AT553821000000027656

*Diamant-Film offers an optional tool "RegionFill" that can automatically complete and correct static regions. Another tool called "DeadPixel" is made to correct artifacts created by digital cameras and processes.*

13. tear repair, frame repair

*Completely or heavily damaged images can be repaired automatically by the "Interpolate" tool. Interactive repair is possible with the tools offered in "DustBuster+".*

14. automatic RGB channel alignment

*The Diamant-Film filter "ColorRegistration" has been made to adapt channels in either RGB or HSV (operator selection).*

15. colour correction

*Diamant-Film is a restoration tool and not a color correction tool, however there are basic tools to adapt primary colors. For high-end grading, Diamant-Film can be integrated with other tools such as ASSIMILATE SCRATCH.*

16. De-Warp

*Diamant-Film uses a "DWarp" function that supports various levels of automation. The most efficient and sophisticated mode is an automatic mode, that is based on reference images. By this tool any kind of image deformation can be efficiently treated (especially as it happens around bad splices).*

17. De-Stain

*Diamant-Film uses a "DStain" function that can handle color (e.g. yellow) stains as they are very frequent defects in due to humid climate conditions.*

18. simple filters

*Diamant-Film offers a toolset of standard filters like "Blur", "Sharpen", "Zoom", "Transform" which can be applied automatically or with animated brush strokes.*

19. auxiliary tools

*A number of auxiliary tools complete the feature set of the Diamant-Film Restoration Software. Including "Crop" a Pan&Scan tool, "Report" an automatic generated detailed restoration report and more.*

20. multi-threaded calculation

*Diamant-Film uses multi-thread motion analysis and compensation on the basis of optical flow down to the full image resolution (in the current offer we support up to 8 parallel threads. This is true for any other tool also! And only a question of license.*

21. manual, automatic and hybrid error detection and removal (dust and scratches).

*Diamant-Film is an integrated tool, where all steps can be applied in a hybrid approach. Automatic, semi-automatic and manual processes as well as combination of various tools at the same time.*

22. automatic and manual 'repair' modes.

*Any automatic repair by Diamant-Film can be overruled by manual intervention. However, Diamant-Film offers strong automatic repair in order to provide an efficient restoration workflow.*

23. DPX Timecode and Keycode film handling.

*Any DPX header information is provided with Diamant-Film. This apparently includes keycode handling. Diamant-Film keeps all keycodes. In the export function the operator can also insert a new keycode in the dpx files.*

24. optional video output

*Diamant-Film are supporting various DVS video boards like Centaurus II or AJA Kona.*

25. non-linear workflow.

*fully supported.*

26. non-destructive image editing.

*Diamant-Film is heavily used by broadcasters and film archives. All restoration functions are consequently non-destructive.*

27. 2D & 3D LUT support

*fully supported.*

28. render farm support

*Optionally Diamant-Film restoration supports additional render clients for fast rendering*