

FalCon eXtra - Release Notes

22-JUL-2010

Installation Guidelines and Licensing (Hardlock/HASP)

- Please pay attention to the latest notes and documentation on our web site:
<http://www.falcon.de/falcon/eng/>
 - Download the newest license protection drivers and tools:
<http://www.falcon.de/falcon/eng/downloadrequest.htm>
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ImagerControl Camera SDKs

Note that you are recommended to ensure compatibility with the latest drivers, using the following manufacturer releases:

- NAC GXLink Version 3.36
 - IDT Motion Studio Version 2.08.03
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Release Notes Version 7.01.0009 #85

QuickView

- Picture Optimization: denoising revised: user dialogs and functions.
New: Gaussian and Median filter.
- Picture Optimization: Spotlight now also in inverse mode: gamma beyond circular area.
- Picture preparation of MCF-Files supported by GPUSpeed
- PictureView: Single step now for all selected AVIs
- PictureView: Navigation in preview pictures by cursor keys
- PictureView: Free selectable headline for print
- SyncPanel: Start and stop/pause via space bar, auto-positioning of the SyncPanel dialog into the four corners of the eXtra window via keys 1-2-3-4.
- Picture Transformation: create WMV without sporadical picture repetition (bug fixed).
- Picture window: Esc key = close window.
- New: HSV file format of Olympus cameras
- New: RAW3 file format of AOS cameras

PictureView

- Picture section and zoom-in/out using ”+“-“ keys now centered with respect to picture.

ImagerControl

- Tab Control: Replay of recorded images now also by slider.
- Support of NAC GX-8 and GX-5 HR.

MovXact

- Save spatial X-graphs as DIAdem container file: additionally the saving of a time channel is offered (functionality corrected).

Mov3D

- 3D Coordinate system acc. to 3-2-1 rule: select the direction of an axis depending on a marker also as negative axis, e.g. „-x“.

Release Notes Version 7.01.0004 #82

QuickView

- Picture Transformation: Add directories with picture files via drag&drop from the Windows Explorer. In case of sub-directories new tabs for corresponding sequences are created automatically.
- Insert Logo: **new Mode** „Adaptive“: position, rotation angle and zoom can be adjusted interactively. Application: check of target positions or confidence corridors of airbags.
- Picture Viewer: series of single frames handled as sequence: now also for file types BMP, JPG, TIF. Note the required settings of timing parameters.
- Picture Viewer: create an AVI now with optional temporal and spatial cutting.
- AVI Viewer: Pause/Start during replay using the „blank“ key.

MovXact

- MME Export: Selectively all calibrated channels are filled by NoValues within the maximum limits of the time interval: important for FcBase.
- Save angle diagrams: bug fixed.

Mov3D

- Track Markers: Select markers by subsets of control points within different coordinate systems.

Release Notes Version 7.01.0001 #80

QuickView

- Viewing of pictures: **New:** Create by two mouse clicks a Picture List (*.pli) from the picture sequence (see popup menu). Dialog of Picture List is redesigned.
- Bug in application of color matrices fixed.

ImagerControl

- **New:** Nac Memrecam GX-3 supported.
- Microtron EoSens: external timing adapted.

MovXact

- Test information: dialog bug (= abort) fixed.

Release Notes Version 7.01.0000 #79

Common

- ISO MME Version 1.5 is now supported.
- Open Files: „All Files“ preselection is last used file type or *.*.

QuickView

- Viewing of pictures: If several numbers pictures are in a directory, e.g. „test_004“, „test_005“ etc., you can run the pictures as sequence via the slider or the SyncPanel. (Currently released only for raw image file formats.)
New: Create by two mouse clicks an AVI file from the picture sequence (see popup menu).

MovXact

- Export into format eXtra ASCII: fast mode = press during the menu command „Edit/Export“ the Ctrl key in order to skip the dialog and further message boxes (all views = OK, Replace = Yes).
- Import an analysis (*.ana): Test information is now applied; reset button in dialog for easy deleting. If the import file contains several views, all views including marker defaults can be imported.
- Internally the last export and import path are remembered separately.
- Export of single ducrves in format ISO *.chn: test object no. = 1.
- Test information contains 1-character code for the ISO test object = position 1 in default channel codes.

Release Notes Version 7.00.0002

Common

- Divers small corrections/adaptions after feedback of customers.

QuickView

- Picture optimization: Subdialogs now with buttons Test / Cancel / Back

QuickView Plots

- Capture as AVI: save now full desktop as movie.
Take care to select a very high delay of the SyncPanel!

FrameMerge

- New mode „Mosaic (opaque)“: The images are set normally just side-by-side 1:1 into the output image. If one image overlaps the other, the sequence is ascending according to the inpt list: first sequence lies below, the last sequence lies topmost.
In mode „Or (transparent)“ „purely white“ (=255,255,255) pixels of an overlapping image are to be interpreted as see-through.
- During change of the tabs the selected output image size remains the values.
Bug in case of partial overlapping fixed.

MMECreator

- Availbale as separate license.

Release Notes Version 7.00

SyncPanel

- **New:** Under the button with “window” icon a popup menu shows up which allows the selection of auto-layout functions:
“Movie+Picture+Plot“: arrange all open windows applying same width,
“Movie/Plot“: arrange movies in the upper half screen and plots in the lower half.
- **New:** You can call the auto-layout functions also from the movie, picture and plot windows: via the (context) menu or via the shortcut “L” and “Shift+L”.
- **New:** Dialog to change interactively the sort order of the windows and get an overview about all timing parameters of all windows.

GPUSpeed

- With this tool, which is applicable as add-on to all eXtra modules, AVI-creation time can be reduced by up to 77 %. The acceleration has an effect on: processing of raw images, image optimization and changes of image size as well as image processing during marker tracking.
Requirement: Nvidia graphics board. More information see data sheet.

MME Viewer/Creator

- **New:** Create new MovXact analysis directly with the MME data and movies;
default of the analysis directory = “MME path/Analysis“

QuickView

- **New:** Picture optimization now in all documents with common dialog allowing fast overview and input of all parameters. In the Settings you can adapt or check the optimization parameters for each possible imager individually (!): Actual Values, User and Basis Defaults.
- **New:** Picture optimization with normalization of contrast, histogram as well as **Smoothing** = noise suppression (Knn only with GPUSpeed) and **Spotlights**: set one or several spots with local lighting or shading.
- **New:** Reading of standard picture file formats, e.g. Jpg, Bmp, Tif, can be accelerated by selecting the Microsoft GDI+ graphics library.
- **New:** Parameters of picture optimization can be set **individually for each imager type** and are saved as individual defaults in the registry.
- **New:** Picture Transformation *.MTR: new document type replaces Multi AVI Creation und (single) Picture Transformation by common dialog and common user handling during creation of several sequences (= multi).
- Picture Transformation and FrameMerge: sections via manual cursor rectangle are now restricted to values which are divisible by 4 (position and size).
- **New:** Create new MovXact analysis directly from movie (AVI, WMV) by one mouse-click.
- AVI ReCompress and Convert: functionalities extended by temporal sub-sampling, T0, image size and section.

QuickView AntiShake

- **New:** Picture Transformation: AntiShake for “online” steadiness correction with auto-tracking during creating AVIs.
- **Auto-Tracking:**
If the number of successfully measured markers is not sufficient in an image, a transformation cannot be calculated for AntiShake. In this case the original image was inserted into the AVI in the previous software version; now the transformation parameters of the preceding image will be kept = extrapolated: thus possible short-time “jumps” can be avoided.
- **New:** Picture Transformation AntiShake: If trajectory values are available for all images, i.e. all correction values can be calculated, a new function "Auto-Section" was implemented. Hereby a window section is evaluated automatically in order to cover all individual margins by a common mask; thus the resulting sequence does not show jitters as well at the image borders. (Currently only for mode “Translation“.)

QuickView Plots

- **New:** Insert AVIs as logos: full background, rectangle within axes or zoomed window. Temporal synchronization via SyncPanel.
- **New:** Export of curve data into format eXtra ASCII *.txt.
- **New:** Function “1:1 Raster Ratio“ sets the window height to get squared meshes at axes with same units. Application: spatial curves.
(Automatically during showing a diagram in MovXact.)
- **New:** Edit graphs: offset (abscissa, ordinate, time) as well as invert, filter and time factor (only if the channel data come directly from MovXact or ASCII table files).
- **New:** Show graph values (= coordinates) as notes in the plot window, see also auto-text placeholders.
- **New:** Enter placeholders, e.g. (\$SOURCE) in legends and notes via popup menu in the edit field.
- **New:** Define physical units:
Would you like to show units of new measurement diagrams always with predefined units?
Enter your user units in the Program Settings/Plot Units:
 - a) First select the SI unit with the corresponding exponents of the seven physical basis units.
 - b) Add new user units, which might show different writings or factors and select the default box for the next diagram.
 - c) Check the inputs in the tab Preview.Note: prefixes with the common 10-power exponents will be evaluated automatically during the conversion of the input units.
During shutdown of the program the settings will be automatically saved in the local user directory.
Note:
You can change the shown units also in an open diagram under Settings / Edit.

ImagerControl

- **New** Imager types are supported:
Redlake IDT: MotionPro Y5, MotionXtra N3, N4
Weinberger: MacroVis (CiCas)
Mikrotron: EoSens (CiCas)
Olympus: i-SPEED 3
Photron: Fastcam SA3
- SnapShot executable via SW or HW trigger.
- Separators for “movie name“, also for auto-texts of AVI reductions.
- Overload of computer avoided, if too many AVIs are calculated at the same time.

IcSlaveServer

- Information extended : corresponding control host, processed imagers
- Delete function for data “every x hours”
- Overload of computer avoided, if too many AVIs are calculated at the same time.

FrameMerge

- **New** overlap mode “Or (transparent)”: “Lower” basis = input#1. If input#2 shows a pixel value unequal white ($\neq 255,255,255$), the color value of input#1 will be set as output, i.e. input#1 will be covered opaquely, while a purely white of input#2 will be interpreted as transparent, i.e. input#1 will be set in the output. In case of several inputs each successive sequence covers the preceding ones.
- **New** overlap mode „Mosaic (opaque)“: The inputs are set into the output sequence without considering transparencies in case of overlapping. Application: fast processing during patching pictures side-by-side. In case of intersections each successive sequence covers the preceding ones.

MovXact

- **New:** marker type VIRT = (true) 2D virtual markers: set up via cursor in an image and assign it to an 2D object with several (≥ 2) reference markers. During output of a trajectory value, e.g. in a diagram, it will be calculated automatically in the background – similar to the group method.
- **New:** Basic setting of the diagram color of a graph is now “Auto-Color = f(graph index)“, see RGB icon on the color selection button. Please note to reset possible individual marker settings (see dialog MovXact Settings/Methods) once to factory settings.
- Stencils with **new** functions:
 - a) post processing with “Erase“ (cut/cover) and interactive “Extend/Add“ of areas with the help of a polygon brush.
 - b) smoothing of interactively entered line chains (preceding point wise sampling recommended)
 - c) buttons for import, export and copy into other views.
- **New:** Freeze overlay graphics:
For comparison of dynamic processes with fixed curves, e.g. airbag limit lines, an

overlay can be kept in the analysis image. During change of images or change of the display object the graphical elements are “frozen”; only explicit deleting removes the contents.

- **New:** Edit – Overview about marker measurement data with the aid of a data bar:
a) image measurement data =
point measurements as results of the tracking with the unit pixel:
green = ok, blue = special status.
b) calibrated measurement data =
results after full calibration.
- New MovXact analysis: import of ISO MME data and movies.
- Define a “similar” analysis: a) import an existing analysis in the dialog New Analysis or **New:** b) button “New Analysis“ in the main document window of the existing analysis. (Additionally to the settings will be applied: markers as defaults, contours without graphs as well as stencils.)
- Export of measurement data: optional with channel name = ISO Code (tag 200 = ISO Location, tag 201 = channel label); the time channel is inserted with the ISO Code "000000000000TI00". (see dialog MovXact Settings)

Mov3D

- **New:** marker type VIRT = 3D virtual markers:
setup “empty“, i.e. without pixel information and assign it to a 3D object with several reference markers ($\geq 4+1$). All members of the object need control point data. To output a 3D value, i.e. into a diagram, it will be calculated automatically in the background via the control point coordinates of the “rigid” object and the 3D coordinates of the “unknown” reference markers.
- **New:** Edit - Overview about marker measurement data, see MovXact, but additional:
All 3D views, which contain the current marker, are shown as bars, but only if the start time T0 and the frequency correspond to the current view!
The upper bar '3D Basis' shows the overlapping of the single bars:
orange = all views, grey = subset of the views, but at least 2 are available.
Note:
The overview refers to the sequence and timing interval of the current view. The effective 3D graphs can even exceed the shown range in case of views with different timing parameters.
- Import/Edit of camera calibration parameters, which do not allow a rectification of the 4 image corners, is now enabled. Yellow warning icons give feedback about possible “dangerous” parameters.
- Camera Positions: dialog to define the grid plane. Overview: plots of the standard deviations now no more relative to the first value, but absolute = always positive.
- 3D Transformation: The calculated transformation values are valid within a superordinated time interval. Changing the mode static/dynamic or editing the static reference image or changes of the timing parameters of single views requires always (!) to re-calculate the transformation values. (The old values will be deleted automatically before new calculation.) Messages are adapted.

MovBag

- **New:** Capture contour lines in “moving” search area: The search window is shifted dynamically acc. to the motion of reference markers. The reference image remains statically.
Note: If not at least one trajectory value of a reference marker exists, the search area will not (!) be shifted – without warning.
- **New:** Post processing with “Erase” (cut/cover) and interactive “Extend/Add” of areas with the help of a polygon brush.
- **New** Measurement values: minimum displacement and distances x/y/Res to reference marker.
- **New:** Special function to balance (= via spatial mean) between several template stencils; goal = evaluate a “scheduled” outline with +-3-sigma outlines.
- **New:** Invert analysis image = View/Brightness/Negative:
Especially to analyze contours of “dark” objects with the aid of a MovBag analysis.

ModifySampleRate V4.0

- Extended for movies of type AVI or WMV.