Motion Studio 2.16.05
April 20th, 2022

Release Notes (changes from version 2.16.04)

Item	Comments
MS	
All cameras	Added playback bar. Playback controls are separated from camera or image controls.
RAW files	Added option to list raw files from regular images folder or Write to disk folder. Added raw file thumbnails preview.
Hub	Added support for 12-port Crash Hub.
Bookmarks	Added bookmarks support.
Histogram	Added support for display of histogram values in a tables. Added vector-scope.
Distance / Angle	Added tool to compute distance and angle.
3D LUT	Added support for 3D look up tables.
Auto download	Added configurable delay between auto-download recordings.
O/Os series mission mode	Added display of memory segments. Improved check of max fps, max exposure and record length.
O series	Added support for showing mission mode segments from a removable SSD reader.
Color balance	Added support for default color balance table.
RAW files, XSM	Improved software rendering of camera images.
Ethernet cameras	Improved parallel raw conversion.
Image Filters	Improved edit filters preview.
XSM	Improved XSM pre-trigger calculation in streaming mode.
All cameras	Improved management of multiple cameras live.
CCM-HD	Improved support of CCM-HD camera.
All cameras	Fixed mono display of color images and color to gray conversion.
Focus line	Removed distance calculation in focus line dialog.
Motorized lens	Added reset focus button to lens control.
LUT	Bug: LUT dialog open when camera live is on makes MS crash. Fixed.
Save images	Bug: images can be saved only in Bayer format. Fixed.
LUT	Bug: if LUT is enabled and ROI dialog is open, images are shown with wrong colors. Fixed.
Parallel download	Bug: parallel download when auto-download option is active,makes MS crash. Fixed.
UTC offset	Bug: if UTC offset option is automatic, wrong value of UTC offset stored with images. Fixed.

CCS	TNK is not applied in the same way on CCS live images and Raw files. Fixed.
SDK	
Image formats	Removed GRAYX formats (deprecated)
Old N4 cameras	Fixed problem with horizontal lines in live and preview.
XSM	Allow streaming on 3 disks (before it was only 1, 2 or 4).
Read from SSD/SD reader	Fixed rendering of cameras which store 10 bit images in SSD/SD card.

Motion Studio 2.16.04
October 13th, 2021

Release Notes (changes from version 2.16.03)

Item	Comments
MS	
All cameras	Fixed support for parallel download. Added configurable number of cameras that can download in parallel.
RAW files	Added support for parallel raw conversion.
RAW Files	Added options to raw converter (parallel conversion and max number of raw files converting in parallel).
RAW Files	Added support to convert RAW into DNG or WMV format.
CC-Mini	Added support for CC-Mini HD camera (1920x1080 @ 5250 fps)
Hubs	Added support to detect WiFi Signal Hub and display of battery status.
Os/CC-Mini	Fixed SSD-Backup mode in double exposure. Some cameras require firmware upgrade.
XSM	Added support for reading clips generated by XSM Motion Monitor.
XSM	Fixed support to XSM camera connected with box without onboard DDR.
SD-Card/Removable SSD	Fixed TNK and DNR on images read from SD-Cards via USB reader.
XSM	Improved calculation of disk speed for XSM “write to disk”.

Motion Studio 2.16.03
August 9rh, 2021

Release Notes (changes from version 2.16.02)

Item	Comments
MS	
All cameras	Added support for parallel download.
Stream to disk	Improved streaming to disk on XS-Mini cameras.
XS-Mini	Use XS-Mini camera as traditional camera with onboard DDR.
Camera List	Options: added item to synchronize playback between cameras.
Rack Hub	Added button to turn on and off lights in continuous mode.
Motion DAS	Added gain (1X, 2X, 4X, 8X) to DAS channels configuration.
Motion DAS	Added marker in DAS graph display. It shows the position of current image.
Save images	Added support for “WMV” file format. Before adding a file format to save list, check if it's currently supported.
White balance	Fixed white balance in CC-Stick and XSM cameras.
TC/Rack Hub	TC/Rack Hub support: disable controls when cameras are armed.
Reticle/Grid	Burn grid/reticle to saved images. Fixed crash when pixel depth is changed in output file.
Remote raw files	Added support for enumeration and display of remote raw files (XSM generated).
PIV/DIC	PIV/DIC timing: limit delays between 0 and max pulse separation. Save and reload parameters when MS is closed and open.
Tracking	Added support for CSV file format.
Raw Download	Raw download when SDI is on. Fixed to avoid camera hanging.
Master/Slave	Improved master slave detection of Os ,CC-Mini and XSM cameras.
Download	Added warning when download is automatic after recording. Make sure that trigger frame is included in download selection.
Motion Trigger	Change grid to red when trigger is detected.
WiFi Signal Hub	Added support to WiFi Signal Hub to show battery info.
SDK	
XS-Mini	Added support for Phoenix camera models
XS-Mini	Added support for reading remote RAW files.
HG cameras	Removed support for EPIX frame grabber and Redlake legacy cameras
POV	Added two digital gains to POV camera

CC-Stick	Fixed BROC
GEV	Added support for GEV images read from SD-Card
Y cameras	Restored debayer in old non pipeline cameras
LabVIEW	Added VI to erase SSD and enable/disable fast live
Matlab	Added routines to erase SSD and enable/disable fast live

Motion Studio 2.16.02
February 15th, 2021

Release Notes (changes from version 2.16.01)

Item	Comments
XSM	Added support for auto-exposure and auto-iris (see What's New document)
XSM	Added support for remote communication: connection to XSM and XSC via Ethernet (see What's New document)
XSM hardware trigger	Fixed detection of hardware trigger.
CC-Stick	Fixed support of CC-Stick operation. Implemented pulse high and pulse low sync in modes.
XSM 3520	Fixed ROI support.
XSM/XSS	Added support for Motion Trigger. Added camera power cycle option (camera/advanced menu). Enable trigger and sync out configuration. Enable read of external frame rate.
Recording options	Do not enable "Jump on next segment" option if camera is XSM.
XS-RT render	Enable XS-RT render on raw files.
Local memory allocation	Correct calculation of optimal DDR size for XSM.
PIV/DIC	Restored sync in delay configuration in PIV/DIC dialog box.
Master/Slave mode	Avoid "recording post-trigger" message appearance on master camera status, when start recording after live.
XSM	Added PIV extra gain on XSM-1540, HD and 3520 models (requires camera re-calibration).
CC-Stick and PTP	PTP data doesn't match if TNK is enabled. PTP time stamp disappears in raw files. Both fixed.
Y and N series	Restored CFA threshold and old “debayer” algorithm for Y-series and N-series cameras raw files.
Os	Added support for MFT mount on Os cameras with old firmware.
SD-Card	Fixed read of image with TNK from CC-Stick SD-Card. Fixed download of RAW file from POV SD-Card.

Motion Studio 2.16.01
December 3rd, 2020

Release Notes (changes from version 2.15.00)

Item	Comments
Camera models	Added support for Xs-Mini and CC-Stick (see What's New document)
Streaming	Added support for direct streaming to disk: XS-Mini and PCIe cameras (see What's New document)
LUT	Added new look up tables (see What's New document).
Color gain/pedestal	Added a button on image tab to activate gain/pedestal dialog box (see What's New document)
Motorized lens	Improved support for motorized lenses. Implemented incremental focus (steps). Added lens command to power off lens (see What's New document).
General	Added “switch to next segment only if it exists” option (see What's New document)
XS PCIe	Added “Fps throttle”. Automatic decrease of max speed if the computer doesn't support it.
Calibration	Added white balance option to current conditions calibration (see What's New document)
PTP	Added PTP power up delay parameter (see What's New document)
R-Series	Added option to boot with 10G Ethernet fiormware (see What's New document)
TC-Hub	Added sync in configuration, impact sensor and support for more than one hub. Added master/slave sync mode.
Trigger level	Before arming cameras, check if trigger level is correct and compatible to what has been configured.
Multi-camera	Multi-camera support is activated if camera list is off and a TC-Hub is on.
PLL mode	If camera is recording, do not read external fps, it may generate weird behavior.
Decimated display	Added decimated display for R, XS PCIe 1440p and 720p cameras
Clips	Added support for reading raw files (clips) generated by XStream Wizard and Clips Manager.
XS-PCIe	Improved support for XStream PCIe 720p and 1440p: faster raw download, correct ROI configuration, management of maximum frame rate (throttle).
IRIG-GPS/PTP	If IRIG, GPS or PTP modes are enabled and images are converted from raw or downloaded in “non-raw” format, an xml file is created. The file contains time info about each frame of the sequence.
RAW	Added support to render raw files with XS-RT hardware
SSD download	Added a way to detect if camera SSD download freezes.

Motion Studio 2.15.00
May 31st, 2019

Release Notes (changes from version 2.14.01)

Item	Comments
Color balance	Added advanced color balance for images.
Advanced trigger configuration	Advanced trigger configuration: added PTP mode (Ethernet or UDP).
Options	Options: Added battery level warning threshold.
PIV Timing	PIV timing dialog: added check box to enable PIV mode. If PIV mode is on and no channels are selected, no output on sync out and ready.
PIV/DIC mode	Added PIV/DIC mode to camera bar.
Save images	Added option to save all the segments of each camera. Hidden if cameras have only one segment.
Camera bar	Added combo for SSD mode (backup/streaming). Added load overlay button to image tab.
Camera List Bar	Improved camera list bar: added master/slave check box, moved options to tools menu, added icons for menu and exit.
Record configuration	if AVI save is off, hide controls and shift up the directory edit box, added rec mode column to acquisition selection dialog box, added SSD mode selection, since SSD is on or off. Show all the options for auto backup and triggered rec start.
TC-Hub	Improved TC-Hub timing: added battery level display and improved sync with cameras and info. TC-Hub is detected when cameras are open and the user has multiple choices.
Chapter10	Added chapter10 file format.
MS	Fixed open extra instance of MS in windows 10.
SSD Streaming	SSD streaming in circular mode: reset time counter when trigger is detected.
Master/Slave	Enable software trigger on slave cameras. Snap: improved precision by reading trigger position in CC-mini. Fixed problem when snap is done in SSD on modes.
R-Series	Added support for XStream mini and R-series cameras.
CC-Mini	Enabled Sync out modes for CC-mini.
MS	Added flags to show/hide toolbar. Save them when MS exits and restore when MS starts.
DAS	Show DAS labels in selected language. Added configurable labels color.
O10/Os10	Os10: use marker to identify Os10 frames that cannot be "ghost corrected". O10/Os10 have one SDI mode (1080p 30 Hz).
CC-Mini	Removed 720p 24 Hz SDI mode from CC-mini.
GPS sync	If sync in is GPS, local time is retrieved from GPS time stamp.

SSD upload	Disable playback buttons when data is uploaded from SSD to DDR.
Acquisition time	Save microseconds in acquisition file.
RAW file	Read correct configuration file even if raw file is open through regular image open dialog.
Normal mode	Show proper pre/post trigger timing even if rec mode is normal.
XStream camera	Memory size may change. Check if number of frames fits at startup (otherwise crash).
Issue	Fixed 150 frames (CC-mini) and 5 frames (master/slave) problem when camera is open.
PLL mode	In PLL mode, set new multiplier when external rate changes.
MA/AE	Improved MT/AE with CC-mini. Correct calculation of MT condition.
MS	Added "store configuration to flash" option to single camera menu.
MS	Save segments and configuration to flash more frequently.
SSD Backup/Streaming	After download do not reload SSD segment if it's already in DDR.
Raw Converter	Added mov and mp4 files support to 64bit version.

Motion Studio 2.14.01
November 5th, 2018

Release Notes (changes from version 2.14.00)

Item	Comments
Options	Added option to automatically detect master camera when a new camera session is started (see what's new).
Motorized lens	Improved motorized lens support, added configurable lens settings (see what's new).
Download manager	Added “task” column.
CC mini	Added support for CCM 1540 and CCM 3525.
Triggered SSD streaming	Fixed triggered SSD streaming mode in normal mode.
Raw download	Added support to save raw files from removable SSD/SD-card.
GEV Os	Added support to read SSD segments form GEV Os
Multi camera	When duration units are in seconds or milliseconds, compute time and pre-trigger in those units, then convert in frames.
Multi camera	If auto advance is on and the segments are finished, ask question and add new segments.
SSD backup	If MS opens a camera when it's downloading data to the SSD, show a warning and exit.
Attach	If MS attaches a camera that it's in post-trigger mode or downloading to SSD, wait until it's done.
SSD streaming	If there is a power loss in SSD streaming mode, do not show progress and manage the attach properly when the power comes back.
Overlay image	Fixed 36 bit overlay image crash. If ROI or pixel depth changes, remove overlay to avoid crash.
XStream PCIe	Fixed support for more than one camera.
Rack hub/TC Hub	If exposure units are angle or fractions, show TC-hub and rack hub units in the same way.
DAS	Fixed display of current DAS value in time stamp. Fixed support in Motion Studio.
AVI	If images are saved or converted into AVI and extra AVI is created, avoid the same name for both files.
Image tile utility	Only the first frame is saved in the movie. Fixed.
Y4 camera	Fixed current conditions calibration for non pipeline Y4 cameras.
Trigger Hot key	If a child dialog is present, the trigger key is not detected. Fixed.

Motion Studio 2.14.00
August 25th, 2018

Release Notes (changes from version 2.13.00)

Item	Comments
All cameras	Added automation procedure for recording, downloading and transferring images (see What's new)
All cameras	Added environment variables and variables in save options (see What's New)
Download	Added new options to save AVI files (see What's New)
Acquisition time units	Configure time in number of frames, seconds or milliseconds (see What's New)
Lens	Added lens support for Os and XStream, added zoom control (see What's New)
Time stamp	Added “Test Acquisition name” and “Logo 2” items (see What's New)
Snap sequence	Added tool to save a sequence of image snaps (see What's New)
Raw File	Added option to trim a raw file and save it somewhere else (see What's New)
Auto-Exposure	Added new AE modes (see What's New)
Administrator setup	Reworked and added new items (see What's New)
ROI	Added button to compute ROI from frame rate (see What's New)
Motion Studio	Command line support: image sequences and raw files can be open in Motion Studio as command line parameters. To activate that, right click on a sequence in Windows Explorer, select “Open with...” and then select Motion Studio.
SSD	Improved synchronization of SSD segments with segments configured in camera flash memory. Added check if removable SSD has been replaced.
External sync	If sync is eternal, show external rate value in camera list.
Timing	Added Os, CC-mini and XStream integrated timing support (Sync out and ready signals).
XStream camera	Added paint parameters and support for color tables in XStream camera.
CC-mini	Fixed Master/Slave mode for CC-mini cameras.
All cameras	Avoid infinite loop when images are loaded from camera SSD to DDR.
All SSD cameras	When an “SSD backup” session is done, do not reload images from SSD to DDR because they are already there.
All cameras	Avoid the display of a segment in camera DDR when master/slave detection is done.
SDI only mode	At startup, show warning when SDI only is selected in Os, CC and CC-mini cameras.

DDR segments	At startup, check if the DDR has been reset and set all the configured segments to “undone” (red).
Multi-camera	Save images from multi camera system: the configuration of “Reset frames numbers” and pixel depth must be the same for any camera.
Os cameras	Triggered recording mode has been added to SSD streaming.
Current calibration	Added current condition calibration for CC-mini.
GEV	Added support for reading CC-mini SD-cards with GEV recordings.
Impact sensor	Disable impact sensor if fast live is on. Accidental trigger may stop live.
Os8 raw files	Fixed rendering of raw files made with Os8 camera.
PTP	Added PTP support to CC-mini cameras.
CC-mini	Fixed top and bottom artifacts in CC-mini cameras.

Motion Studio 2.13.00
January 11th, 2018

Release Notes (changes from version 2.12.21)

Item	Comments
Acquisition time	Added option to let the user configure the acquisition time in seconds instead of number of frames. When the option is on, pre-trigger frames and BROC parameters are configured in seconds as well (see What's New document)
Overlay image	An overlay image can be displayed on top of regular camera live/playback images (see What's New document).
Local disk	Added warning if the available disk size is less than a configurable threshold (see What's New document)
Save acquisition	Added option to use the acquisition name to compose the image name prefix (see What's New document).
Shock sensor	Added support for CrashCam mini shock sensor (see What's New document).
Lens control	Added an option to configure the focus and the Iris aperture using regular sliders in a dialog box (see What's New document).
Angle calculation	Added a tracking tool to compute angles (see What's New document).
Raw file	Fixed display of DAS data when a raw file is open.
DAS	Improved the support for Excel xls files. Added support of “Comma Separated Values” CSV file.
H.264	Added support for H264 raw download in Crash cam Mini cameras. Added supp;ort to read *.264 files in Motion Studio
Camera List	Disable camera list when the cameras are downloading images
External sync in	Added a warning message when the external signal stops (asks to switch to internal).
Open Video	If any error happens after at least 50% of the video is already loaded, do not abort and open it
Raw converter	Avoid crash if a raw file has binning
Raw converter	Fixed pixel depth and pixel gain management in raw files
1 PPS	If 1PPS mode is activated and time stamp is on, the date and time values are read from the local computer.
Os cameras	Added option to manually save the images from the camera DDR to the camera SSD (requires fw version 202 and above)
SD-card images	Fixed display of images from SD-card in a card reader (not directly from camera)
Os9	Fixed second exposure calculation
Os10	Correct load of gain 1.4 register values
Old N4 cameras	Fixed gamma default and sync in inversion issues

X-Stream PCIe	Added support for double exposure mode
M3	Improved M3 calibration and ADC offsets configuration.

Motion Studio 2.12.21
September 7th, 2017

Release Notes (changes from version 2.12.20)

Item	Comments
SSD/SD-cards	Added support and menu items (Administrator privileges are required)
Image Tile Utility	Added “superposed images” option.
X-Stream PCI	Fixed support, binning TNK and 10/30 bit save.
Auto-backup	Enabled auto-backup mode for Crash-Cam Mini cameras.
SSD	Added support for new Recadata™ SSD.
Bug	Do not let trigger position be larger than the number of frames in SSD modes, otherwise it will activate an infinite loop of loading from disk.
Time stamp logo	Fixed display of logo and text on a side of the image.
Camera List	Enable “camera list” when a single camera is available.
Mission mode	Disable controls when “mission mode” is running inside Motion Studio.
Ext sync	External sync mode is reversed to internal when the ROI is changed on Nx7/Nx8 cameras. Fixed.
Advanced color	Enabled advanced color slider on N, Y and Os cameras.
IRIG	IRIG time stamp is corrupted if the live image is decimated. Fixed.
Serial number	Show serial number on window title.
Vidi-Motion	Vidi-Motion shows only the specifications of cameras that are currently on the web site.
8 bit Y4	Old Y4 8 bit cameras: fixed plus mode display and clock of S1 speed grade.

Motion Studio 2.12.20
May 25th, 2017

Release Notes (changes from version 2.12.19)

Item	Comments
CC-mini	Added support for CC-mini 1520 and 3510 camera.
Image format	Added support for DNG image format.
Motorized lens	Added motorized lens support GUI
Auto-download	Added download parameter to override start and stop indexes when auto-download is selected
Bayer	Added Bayer display mode for Bayer image formats (TP2, FBA, DNG)
Exposure format	Fixed precision issues in the display of exposure in degrees and fractions of second.
LUT in RAW files	Fixed user LUT support in RAW files to avoid black images.
Gamma in RAW files	Fixed gamma values saved with RAW files.
Battery	Show battery info in “Camera Info” dialog.
SSD download	Show SSD download percentage when the display mode is SDI only.
Statistics	Show percentage of lost Ethernet packets in image download.
AVI	Fixed potential crash when AVI files are open in MS64.
TP2	Updated camera model info in TP2 format for correct display in Falcon software.
CC mini	Added TNK support in CC-mini RAW files. Added full support of MT and AE for CC mini cameras.
O camera	Added support for reading RAW files from O camera removable SSD.
Auto-backup	Added option to restart from the first undone segment if the camera reboots.

Motion Studio 2.12.19

February 24th, 2017

Release Notes (changes from version 2.12.18)

Item	Comments
CC-mini	Added support for CC-mini 1510 camera.
Os9	Added support for 3000 fps Os9 model.
X-Stream Camera	Fixed sync in, sync out and trigger issues on X-Stream PCIe camera.
Drivers	Updated 64 bit digitally signed drivers for USB cameras.
Multi-camera support	Before arming, show a warning if not all the connected cameras have been selected. If auto-download is enabled, wait until all the cameras return to connected before starting download. If “Abort all” is pressed, do not show a message.
Disconnection	When a camera is disconnected, improve the message info. Improved the re-connection procedure.
Monochrome AVI	Fixed crash when a monochrome AVI is open in MS.
MOV, H264	Improved conversion of images in MOV and H264 formats.
RAW conversion	Added option to select pixel depth if a 10/30 or 12/36 bit raw files is converted into 8/24 bit file. Fixed conversion issues when auto download is enabled and a raw file is converted into AVI.
Gamma	Fixed gamma preset save and load from camera flash memory. Fixed settings of gamma in raw files in multiple cameras environment.
BROC	The value of BROC frames is changed when the total number of frames edit box looses focus.
Legacy cameras	If a legacy camera doesn't support jumbo packets, do not try to automatically adapt the camera's datagram size to the network card's.
IRIG/GPS	Os cameras may have both IRIG or GPS sync. Added also 1PPS mode if the camera supports it.
SDK	Added lens and IRIS control for O cameras.
SDK	Force sync in de-bounce value to zero when sync mode is IRG, GPS or 1PPS

Motion Studio 2.12.18
November 7th, 2016

Release Notes (changes from version 2.12.17)

Item	Comments
IRIG	Fixed the IRIG precision on Y5 cameras. Added an IRIG delay parameter to compensate differences between cameras. Added the “IRIG alignment” parameter in time stamp to align the IRIG time to the star, middle or end of the exposure.
O10	Added support for O cameras. Added support for reading and playing back the images from the removable SSD or O cameras.
X-Stream	Improved the support of X-Stream cameras in MS, MI and the SDK. Improved the speed of updating the images.
M	Improved the calibration and the image refresh speed. Added support for RAW files not generated by Motion Studio.
Crash Mini Hub	Added support in Motion Studio
Mission mode	The dialog is resizable. When a step is added, it receives the focus. The user cannot add more steps than the maximum that can be stored in the SSD
Master/Slave	If the cameras are in SSD backup mode, the master camera detection is fixed.
Auto-advance	If the cameras are in Master/slave mode, the auto-advance has been fixed.
Multi-camera	Improved the status update in BROC mode and during the download of images to the camera SSD.

Motion Studio 2.12.17
August 26th, 2016

Release Notes (changes from version 2.12.16)

Item	Comments
Sync In	Added new sync in modes (see the 'What's New' document for more info): Phase Lock Loop (PLL): the camera requires firmware version 212.193 or later. Dynamic Pulse mode: the camera requires firmware version 208.191 or later.
Color Balance	Four preset values of the color balance table have been added. The user may record a preset value and load it (see Whats' New document).
Advanced Trigger	The dialog box has been improved and new parameter have been added (PLL and IRIG jitter).
Multi-camera environment	Fixed live issues when the output is set to SDI/HDMI. When a recording is stopped, avoid displaying multiple messages
Binning	Enabled binning for Nx7 and Y7 cameras.
SSD recording	If a segment is recorded in the SSD, it cannot be erased. Fixed read of segments from the SSD at startup.
RAW files	Fixed conversion of RAW files when LUT is enabled. Fixed Os10 RAW files when extra regions of interest are enabled.
Calibration	Fixed current conditions calibration if the camera is set to 12bit or the decimated view is activated
IRIG	Added support to new IRIG mode. Added configurable IRIG jitter.
AVI	Fixed read issue with AVI files

Motion Studio 2.12.16
May 6th, 2016

Release Notes (changes from version 2.12.14)

Item	Comments
Cameras with SSD	Added Erase SSD option to camera open dialog box (see What's New).
RAW conversion	Added option to suspend raw conversion when the cameras are downloading (see What's New).
Grid	Added grid and tracking measure tools (see What's New).
Image format support	Added support for new image formats. Enabled MOV and MP4 support on 64 bit Motion Studio.
Multi-processor support	Added multi-processor support in the conversion of Bayer images and raw files.
Leap seconds	Added leap seconds option to GPS time stamp.
SSD backup	Added support for multi-camera and multi-segments in SSD mode. Improved segment management and selection.
Disconnection	Fixed disconnect issues when the camera is in SDI output mode.
Auto-backup	If a camera is one when auto-backup is on, abort the other segments and stop the camera. Avoid crash.
Frame sync	Allow the change of frame sync in multi-camera environment even if images are in memory.
Image	Improved enumeration of image files and read of single image file.
Auto-exposure	Disable AE slider if AE is off. Fixed artifacts on the image when AE is on.
Windows XP	Fixed Window XP issue. Wrong display of menu items.
Falcon	Fixed Falcon support on Os cameras.
Write configuration	Improved write speed of camera configuration when the number of segments is large.
BROC	Added support for reading BROC info from SSD segments.
Raw converter	Added option to Raw converter. Right click on converted sequence and select “Open AVI”.
X4 cameras	Fixed difference between live and recorded images in X4 cameras.
Gamma	Fixed gamma default issues
Rack Hub	Fixed support for lights: the lights are turned on when MS starts. When the cameras are closed the lights are turned off only if the cameras are not armed. The detection of lights has been improved and fixed.
SDI/HDMI output	In multi-camera environment, the cameras set in SDI/HDMI only mode do live continuously even if the are in background.
Os cameras	If the cameras are configured with the default configuration, the value of pixel depth is 12/36.

SDK	Added drivers and full support for PCIe cameras
SDK	Added XS_BROC structure to read BROC parameters from SSD segments (XsMemoryReadFromDisk).
SDK	Fixed PTP time errors.
SDK	The driver for Teledyne-Dalsa frame grabber is built with version 8.02 of the Sapera library.
SDK	Added multi-processor parallel processing for reconstruction of Bayer Raw files.
SDK	Fixed management of gamma defaults.
SDK	Added support for 3D RAW files (read/write).
SDK	Fixed Auto-exposure for cameras with SI option.
SDK	Enable TNK on every Y, N and Os camera.
SDK	Fixed difference between live and recorded images on X4 cameras.
SDK	Avoid shutter line artifacts when AE is on.
SDK	Configure size of DMA buffer (X-Stream PCI cameras). Improved PCI cameras support.

Motion Studio 2.12.14
January 6th, 2016

Release Notes (changes from version 2.12.12)

Item	Comments
Bug	Conversion and display of Os10-base and CC4010 raw files don't show correct color parameters (fixed)
Bug	Trigger position is wrong on Os and CC cameras if MS is closed before sending trigger (fixed)
Rack Hub	Added support for Rack-Hub. Added option to detect LED controllers and Rack-Hub when MS is started (see What's New document)
Sort	Added sort capability to camera and raw file list (see What's New document)
Tracking	Added option to burn tracking points and trajectories in the images (see What's New document)
Color Balance	Color balance: added buttons to increment or decrease the matrix values by 0.01 (see What's New document)
Decimated resolution	The list of “decimated” resolutions is shown in the main camera bar (see What's New document)
HDMI/SDI Overlay	The “overlay” option has been moved to a separate control (see What's New document)
Dynamic magnification	Added buttons for maximum resolutions in cameras with dynamic magnification (see What's New document)
Auto-Backup	Added auto-backup mode DDR support on NX cameras.
Battery	Improved battery status display.
Streaming	In streaming mode, show pre-trigger and post-trigger status.
Streaming	If SSD streaming is aborted, show only the images that have been acquired.
Gaussian/Sharpen	Fixed Gaussian and sharpening filter issues. Range is both is from 0 to 7.
DAS/RAW	If DAS data is saved with RAW file, open raw file and show data graph.
LUT	LUT “spline” parameters are saved in the raw file and loaded when the file is displayed.
Trigger	If “space” key is set as trigger it doesn’t work (fixed).
Tilt angle	Correct tilt angle value in basic tracking calibration.
PCIe cameras	Added preliminary support for X-Stream PCIe cameras.
USB	Fixed disconnect notification issues on USB cameras.

CC4010	Fixed CC-4010 mission mode.
RAW	Fixed RAW/Bayer download issues on some NX4-S3 cameras.
Exposure label	Added routine to refresh exposure label without closing the camera (us, angle, fractions).
Binning	Fixed Os7 binning (avoid crash).
Gamma	The default value of gamma is read from the camera.
AE/MT	The AE/MT frames are hidden if a raw file is open.
CFA filter	Disable CFA filter for cameras with latest debayer algorithm.
Obsolete files	Removed obsolete files from Images database. Do not create the “Calibrations” folder if tracking is not activated.
Mission mode	In mission mode, show correct frames indexes if the acquisition is divided in chunks.
GPS/PTP	Enable “GPS” or “PTP” option in “frame sync” control only if the camera supports it.
White Balance	Fixed White balance issues for Y3-Classic
UTC offset	Fixed UTC offset calculation if the offset goes to previous or next day.
FBA	Added support for version 2 and 16 bit FBA format
Smooth zoom	If the zoom is too large and the smooth routine cannot allocate enough memory, use the regular zoom.
SDK	LabView/Matlab: fixed read of raw files of Nx cameras.
SDK	Fixed grab size for non-pipeline Y4 cameras
SDK	Fixed frame size for CC cameras in BROC mode.
SDK	Added Default attribute. Read default value of a parameter from the SDK.
SDK	Range for Gaussian filter and sharpening is 0 to 7.
SDK	Improved battery management.
SDK	Save LUT spline parameters into the raw file. Do not create the LUT xml file anymore.
SDK	Fixed USB notification issues on Y and X cameras.
SDK	Fixed issues on CC1520/1540/4010 at startup.
SDK	Apply brightness, contrast and gamma even if the LUT is on (pipeline cameras).
SDK	Added support for new camera models (PCIe and Os9).

Motion Studio 2.12.12
September 10th, 2015

Release Notes (changes from version 2.12.11)

Item	Comments
SSD modes	Added support for SSD automatic backup mode (see What's New document).
RAW Files	Added option to sort Raw files in the list (see What's New document).
OpenFx	Added support for OpenFX plug-in interface (see What's New document).
Advanced image parameters	Disable CFA filter on mono cameras and use different defaults.
White Balance	Disable LUT before calculating white balance.
Os cameras	Current series is V3, not V2. Updated strings.
FBA files	Fixed Bayer pattern for Crash-Cameras and NX3-S4 in FBA files.
HG cameras	Enabled diagonal color balance configuration.
HG Cameras	If images are in memory and some parameters that cannot be changed are changed, a warning message is shown.
MT/AE	Fixed when the image is rotated.
Mission Mode	The parameters are validated to avoid recording lengths that are not supported.
Tracking	Enable Zoom + and – modes if tracking is on.
Tracking	If the calibration is turned on and off, speed and accelerations are recalculated. The positions are shown differently.
Os8	Binning is enabled in this camera.
RAW file	If zero position is changed, the new settings are saved in the file.
Attach	Improved Attach procedure if the camera is Os and SSD mode is on (backup or streaming).
LED controller	Fixed Ethernet support and added preset buttons.
DAS	The maximum sampling frequency and the number of channels are read from the device.

Motion Studio 2.12.09
April 13th, 2015

Release Notes (changes from version 2.12.08)

Item	Comments
Image prefix name	Added option to build the image prefix with session name, camera name or both (see “What's New” document).
CAP and LED controller	Added support for CAP and LED controller (see “What's New” document).
Motion Trigger	Improved MT interface. Fixed test procedure (see “What's New” document). Added a dummy acquisition of 1 s before starting the camera recording to avoid LED transient and false trigger.
Image Tile utility	Added option to merge two files in sequence (A1, B1, A2, B2, A3, B3, ...)
Crash-Cam cameras	Added support for Crash-Cam cameras: CC1060 – 1024x1024 @ 6000 fps (12 bit) CC1520 – 1440x1024 @ 2000 fps (12 bit) CC1540 – 1440x1024 @ 4000 fps (12 bit) CC4010 – 2560x1600 @ 1000 fps (12 bit)
Open RAW in camera list	If the automatic detection of new cameras is active and some cameras are on, it adds cameras to the raw list. Fixed.
HG cameras	HG cameras cannot be armed because the status is not properly read (Fixed) Added routine to stop the recording when the stop button is pressed. If more than one HG is in the list, only one camera receives the announcements (fixed).
Camera list	Start the LWR only when the cameras are armed and the status returns “recording”. When record is started and not all the cameras are armed, do not force the abort in any camera. If only one camera is selected, operate like it's not selected. The global indicator changes color only if all the cameras in the list are in the same state (green if armed, orange if images in memory). If more than one camera is selected and the live button is pressed, put all the cameras in live mode but refresh only the camera in foreground.
Current Condition calibration	Fixed for all the camera models.
KeyPad + and -	Image is zoomed in when Keypad + is pressed and zoomed out if keypad - is pressed. The zoom is centered around the current center point in the view.
Save images	Camera list: if the first camera in the list is deselected, the images are saved anyways from that camera (fixed). Single camera: show camera name in Save images dialog title bar.
Time stamp	If “file name” item is selected and a raw file is open, display the RAW file name.

	If “Time” item is selected, display the frame time.
Compressed AVI	AVI files that are compressed with “Microsoft Video 1” Codec are not supported (each pixel is encoded into a 16 bit word: 5,5,5). Fixed.
Sequence speed and tracking	If the sequence speed is changed in the “Sequence info” dialog box, the speed used for tracking is not updated. Fixed.
Binning	Fixed for 12/36 bit images.
SDK	Added Os version 2 and Airborne capability bits.
Camera status	If the acquisition is done and the images can be played back, show "Images in memory" instead of "Idle".

Motion Studio 2.12.08
February 14th, 2015

Release Notes (changes from version 2.12.07)

Item	Comments
Abort (MS and raw converter)	Added an "Abort all" button to abort all the downloads in the queue (or conversions). Abort stops only the current download. If the download is aborted do not start the raw converter or show the statistics dialog.
Time Stamp	Added options to show resolution (W x H) and Test session name (see “What's New”).
Camera list	Added a global status indicator. When the recording is started, the software checks the camera status and makes sure that all the cameras are armed. If not, it aborts and shows an error message. When the cameras are armed, the thumbnails have a green frame. The indicator colors are: • **Grey**: cameras are in idle mode. • **Red**: cameras are going to be armed (Wait). • **Green**: the cameras are armed. Trigger can be issued. • **Orange**: the acquisition is done, the cameras have images in memory. Added an option to allow different frame rate values on each camera (see “What's New”).
Camera List	Other camera List improvements If some cameras are in record mode and the Stop button is pressed, avoid to display the question "keep the recorded frames?" as many times as the total number of cameras. When a multiple configuration is loaded, the camera list parameters are not updated (fixed). When “select all” option is executed, do not ask to synchronize the parameters, just select the cameras. If one or more parameters have been changed when the session in open, display a warning when exit MS. When the camera parameters are synchronized, the parameters are taken from the camera in foreground. When cameras have different max pixel depth, synchronize pixel depth properly (avoid crash). Low Light and Live are activated only on the current view. Before recording, verify that Live is off, Low Light is disabled and the values of exposure and rate are correct. If not, show a message and abort the recording.
Advanced image parameters	Added a button to the "Image" Tab of the camera bar (see “What's New”).
Save images	If a sequence of images is saved, the user may select the step (see “What's New”).
RAW Files	More than one RAW sequence may be open in camera List mode (see “What's New”).
AVI Codec	Added a button that opens the configuration dialog box of the compressor (some codecs do no support quality configuration in MS window). Save monochrome images in compressed AVI with color map. The G and B channels are inverted (fixed).

	Added support for saving AVI sequences larger than 2 GB in a single file.
Cameras with SSD	Added a procedure for the global SSD Erase (the SSD disk is erased by recording black images). Added procedure to dump the SSD portion that stores the acquisition information. The binary data may be saved to a file. Synchronize parameters when switching between SSD Off, Backup, streaming and mission. If the acquisition is stored in the SSD and the mode is changed into Backup, the number of frames is not changed. Sync flip/rotation status to SSD mode changes. When new segments are added in the record dialog box, select the first undone segment, not the latest one.
SSD Backup mode	If the "automatic arm and go to next segment" option is enabled, automatically create a new segment and arm the camera. If the user switches to backup mode, every segment size is limited to the DDR size.
SSD Streaming mode	If the camera has ROI and the recording is in circular mode, the number of frames must be a multiple of 512 frames, not 256. Show the elapsed streaming time when recording.
SSD Mission mode	If the mission is running: • Software trigger is enabled. • Rec and Live buttons are enabled. • Stop button is enabled and aborts the mission if pressed. If the mode is switched from mission to backup/stream, the acquisitions are erased from the disk.
SDK	Added flag in the Misc capabilities field of XS_ENUM structure. It reports if the 4-series camera supports the 1024x1024 resolution or it's an old 1016x1016 camera. Added a parameter to read IRIG/GPS data from RAW images without reading the full image (4k of data).
LUT	Pre-defined LUT have been reworked.
Images playback	The speed of loading compressed AVI and playback is improved. The size of memory buffer used to load images is increased. Fixed the refresh of the slider that did not move until the video ends or playback is stopped.
Attach	If the camera is in record mode, the recording is aborted. It avoids artifacts if the camera was attached to MI. If the frame rate is 30 and the exposure is larger than 5 ms, we assume that the camera is in Low Light mode, then the exposure and frame rate are not read from the camera, but set to the previous values. If the attach is done after a camera reboot and the camera had images in memory, the stop button and the idle state should be restored.
Decimated display	Show decimated images when the pixel depth is larger than 8/24 bit. Disabled decimated mode if the camera is a 4-series and it's forced into 1016x1016 mode. Disable YUV compression if the image is monochrome. If the YUV format is enabled on NX5, a horizontal line is visible in the image (fixed)

IRIG/GPS	Fixed display of date and time in 1 PPS mode (Y cameras). Check if GPS data is correct or it's garbage. Fixed time shift (1 s) in GPS mode (Y cameras).
Ethernet Cameras	Arm the cameras, disconnect the Ethernet cable, trigger and then reconnect the cable. Some cameras show "Idle" instead of "Images in memory" (fixed).
Gamma	If the default button in the Image tab is pressed, the gamma is restored in the image but the settings in the gamma dialog box are not changed (fixed)
Exposure	If you close Motion Studio and open it again, the exposure changes by 1 microsecond (fixed)
Sync	Added support for PTP time stamp.
Histogram	Improved display of histogram for 36 bit images.
Tools menu	The tools menu is available if the camera is in live or record mode
TP2, MRF and rotation	If image is flipped and/or rotated and the images are saved in TP2 or MRF (Bayer formats) the Bayer pattern changes and the resulting image has wrong colors. Fixed.
HG-100K	Save RAW file with color balance. If color balance is on, the raw file is saved with applied CB. In the conversion the CB is applied twice and the resulting image has wrong colors. Fixed: disable color balance before saving the RAW file. If the camera is armed and MS is closed, do not abort the recording. If the camera is open and it's in record, mode, do not abort the recording.
NX5-S1 corrupted image	If the exposure is set to the maximum value for a specified period (for ex. 4997 us at 250 fps) the images are corrupted (fixed)
RAW converter	Fixed preview of rotated files.
Type-2 Continuous	Added support for T2C image format.
M3 camera	In double exposure mode and circular record mode, the trigger position is not correctly detected (fixed).
Plus mode	The camera memory size is not correctly detected in plus mode (fixed).
X cameras	If the camera records at max speed, the LWR need to be disabled. It produces a software hang in USB and black images in GE. Fixed.
N4 with FW=127	In those cameras the sync out does not "follow" the exposure setting. Fix: every time the exposure is changed, disable/enable the sync out.

Motion Studio 2.12.07
October 8th, 2014

Release Notes (changes from version 2.12.06)

Item	Comments
SDK	Added support for Wi-Fi link (O-cameras). Fixed support for YUV format with zoomed images and binning. Fixed support for SSD operations (o and Os cameras). Fixed infinite recording bug in streaming mode.
Camera list thumbnails	Added option to show small, medium and large thumbs (see the "What's New" document).
Record configuration	Added option to add more than one acquisition and to copy current acquisition's setting to other segments (see the "What's New" document).
Download images	Show real folder name and added option to disable automatic folder name generation (see the "What's New" document).
Tracking graph	Improved display of results with colored columns (see the "What's New" document).
NX/Os cameras	Added support for improved calibration in NX and Os cameras.
Trace	each camera generates its own trace file.
AVI	If the "Create AVI" option is activated, it is possible to save regular images as AVI.
Histogram	Improved calculation and display of histogram.
Time Stamp	Fixed time stamp display if the time stamp is empty when Motion Studio starts.
Low Light	Start recording when Low Light is on: disable Low Light and wait 100 ms.
Master/Slave	Allow configuration of color parameters and white balance.
Attach/Detach	Check if parameters have changed and show a warning.
Raw file viewer	Show the correct camera name. If saving images, generate folders like with regular cameras.
ROI	Correct validation (W and H, then X and Y). Fixed display when the ROI is aligned to the left.
	Save monochrome images with color map in compressed AVI format. The color map was not saved in the images: fixed

Motion Studio 2.12.06
August 1st, 2014

Release Notes (changes from version 2.12.04)

Item	Comments
Administrator setup	Added Administrator setup tool. Disable and enable camera controls (see What's New).
Time Stamp	Improved time stamp. Added logo alpha channel and transparency (see What's New).
Save images	Save and create AVI: select different frames from regular image (see What's New).
Start/Stop	Set start/stop frames in playback. Added buttons to make the procedure simpler (see What's New).
Measure tool	Added measure tool to the image profile dialog box (see What's New).
Y-camera timing	Added Y-camera timing configuration (PIV-ready cameras and a special cable are required). (see What's New)
Color Balance	Added sensor specific color balance matrixes database (Daylight, LED-6000K, Tungsten, HMI). (see What's New)
Motion Trigger	Improved Motion Trigger.
Auto-exposure	Added configuration of Auto-Exposure speed. Improved the calculation of auto exposure reference that matches the image currently displayed. The value of auto-exposure is shown in the grayed exposure control.
DPX file format	Added support for DPX file format.
Gamma preset	Save gamma preset values by tapping and holding "Preset" buttons for more than 2 seconds.
Attach/Detach	Fixed Attach/Detach procedure on the same computer.
Set Zero	Fixed "set zero position" in multiple camera environment.
Fast Live	Added option to disable fast live on O/Os cameras.
DAS	Fixed crash when MS is operated with DAS (blue screen).
Open images	MS can open sequences that have the image name without prefix.
Bug	Fixed issue that snaps an image before starting any acquisition.
Save raw with pixel depth larger than 8/24 bit	Open a RAW sequence and save images. Fixed issue when the pixel depth is larger than 8/24. Created a subfolder in the RAW folder.
Mission mode	Mission mode: added options to save steps in local XML file and load steps from it. Show step segment list in a dialog box, not in a dropout menu. if the steps are executed from the Mission dialog box, the SSD step list is updated in real time.

Short exposure option	Short exposure camera: show the nanoseconds digits in the camera list.
Touchpad	Touchpad accepts floating points values (short exposure cameras).
External frequency	Improved precision when external rate is read from camera.
About	In about box, show the file version number.
O-series cameras	Added preliminary support for USB 3.0 and HDSDI on O cameras.
Gamma	Multi gamma is implemented in images playback.
Exposure format (fractions)	Added fractions of seconds exposure format (other than microseconds and shutter angle).
Maximum recorded frames	Added button to set maximum number of frames in the record configuration dialog box.
Session name	Remove space in session names (especially if the space is at the beginning or end of the name). Avoid problems when the images are saved.
Download	Added calculation and display of download statistics for non-RAW images download

Motion Studio 2.12.04
March 14th, 2014

Release Notes (changes from version 2.12.03)

Item	Comments
GE Monitor (new tool)	Added Ethernet cameras monitor tool. It monitors cameras and show status.
Reticule	Reticule is burned into images if it is visible.
Vidi Motion	Fixed calculation of DOF in Vidi Motion. The lens database has been removed and the lens calculations are shown in the main window. Fixed units conversion factors.
Tracking	Fixed calculation of speed and acceleration in tracking. Added a button to update those values.
RAW converter	Added image preview and display of acquisition parameters. Fixed a problem that generates black jpeg images Fixed problem in time stamp (time from trigger) when images are converted
Gamma	Added four preset buttons
BROC	Fixed software BROC. The counter that is used to advance in BROC sections was not increased.
Os-series SSD	Improved management of SSD modes to avoid disconnection. Show percentage of transferred data during SSD read/write procedures. Synchronize SSD configuration with DDR configuration when images are loaded from disk. Fixed attach procedure and management of Os-series in camera list view. Removed messages in SSD modes switch
Histogram	Improved histograms draw precision (horizontal and vertical ticks).
Pan	Improved display of pan tool. If the ROI is changed, the position of the pan tool is not reset.
Time stamp	Fixed problem in time stamp (time from trigger) when images are converted from RAW.
Camera List	Refresh items when ROI is changed.
Save images	Improved display of file type in different conditions. If jpeg download is on, display only JPEG. If raw download and "convert later" are on, display "RAW - convert later", otherwise display a list of possible file types. If "jump to next segment" and "save and restart" options are on: camera records segments, jumps to next and, when segments are finished, saves them all and restarts from the first
Images recovery	Recovery files are stored in app folder, not in database
Decimated display	Added selection of decimated resolutions (1440p, 1080p, 720p, 480p)

Os cameras	Added support to 12 bit Os cameras
Open images	Open images, raw files or DB explorer when the camera list is on: run a new instance of motion studio. It avoids problems in multi camera environment
Save jpeg and AVI	If "Save JPEG" and "Save AVI" options are on, the camera downloads a jpeg frame, saves it, decompresses it and saves the AVI frames
Plus mode	If plus mode is activated on Y4 and N4 cameras, ROI Y and Height must be multiple of 8
RAW files edit	If image parameters in RAW file are edited, the new values are stored in the file
Camera status	"Recording pre-trigger" and "Armed" are the same status, fixed
Corrupted RAW images	Fixed missed packets issue on NX7/NX8 raw download

Integrated Design Tools

Motion Studio and SDK 2.12.03
December 23rd, 2013

Release Notes (changes from version 2.12.02)

Item	Comments
Os-series	Added support for Os-series cameras. Added write to SSD options: Off, backup, Streaming and Mission (see “What’s New”)
ROI	Redesigned Region of interest dialog boxes (see “What’s New”)
Camera List options	Added option to configure different trigger (see “What’s New”)
Load and Save configurations	Added options to delete the configuration files (see “What’s New”)
Record configuration	Added a new record configuration dialog box and a new dialog box for the selection of the current acquisition (see “What’s New”)
Gamma	Added multi-gamma configuration (see “What’s New”)
Multi-file trace	Each day the trace is saved on a separate file. Files that are older than one week are automatically erased.
Raw files	Fixed display of raw files of Y8 (with dynamic magnification) and non pipeline Y6.
Attach	Fixed HG attach procedure
Download	Fixe “Abort” procedure in download batch
Camera List	if cameras have recorded different frames, show a warning message to select the number of images to be downloaded
Fast Live	Added fast live display on Os cameras
XDR/EDR	Disable XDR/EDR modes, if the camera does not support it in firmware
JPEG	Added configuration of jpeg quality
NX3-S4	Added support for NX3-S4 model
M2D	Added support for M2D in circular mode
White Balance	Enable white balance in recorded images (HG cameras)
SDK (Options)	Added PIV option and display of SSD size in enumeration structure
SDK (pixel depth)	Default pixel depth is 8 bit for mono cameras and 24 bits for color cameras

Integrated Design Tools

Motion Studio and SDK 2.12.02
June 21st, 2013

Release Notes (changes from version 2.11.00 to 2.12.00)

Item	Comments
New SDK files	Added SCICamera.h and SCICamera.cpp files. They implement the SCIcamera class that simplifies the camera management (memory, trigger position and address list).
SDK: Battery status	Added battery status for NX-Air cameras (battery firmware updated is required).
SDK: O-series and Y10 support	Added support for O-series and Y10 camera.
SDK: Camera Reboot	Added a pre-configuration option to force reboot of the camera firmware (XSPP_REBOOT_FW).
SDK: RAW files	Added support for reading raw files from cameras with address list (N3 and N4) and for non pipeline cameras with 3 points calibration.
SDK: JPEG download	Implemented fast jpeg download on HG cameras.
SDK: Hardware Information	Removed hardware information from the enumeration structure. Added CFA pattern and the build number.
SDK: Error message	If the driver cannot read the EEPROM structure, an error is returned.
SDK: HG legacy support	Fixed the support for HG legacy cameras.
Database format	Added a further level to image directories (see What's New).
Advanced Trigger Configuration	Added display of max available value for debounce and delays.
Snapshot	Added option to save a snapshot of current live image (in jpeg format).
Download Manager	Resizable and fixed for auto-download.
General Options	The first page includes Download options, other pages have been reworked.
Camera List	Resizable camera list with optimized display of thumbnails and labels. Added options to erase and restore memory on cameras. Added display of trigger mode conflict. In multi-camera environment live and playback is done only on current camera. Added an option to force storing of current configuration to camera flash memory.
Logo	Allow the use of logo images with width that is not a multiple of 4 pixels.
XS3 and old Y3	Old camera models: enabled 10 bit format on XS3, disabled 10 bit format for old Y3.
Raw File from old N cameras	The raw viewer can display files generated by old N cameras with address list.
Trigger Hotkey	Added space to trigger hot key list.

GUI resources	Optimized the GUI resources for opening a large amount of cameras.
Warnings	Added warning for wrong read of EEPROM parameters.
Low Light	Fixed and improved low light mode.
Live While Recording option	If LWR is set to “Do not preview”, the image is not updated when the camera is open and when the recording is done.
White balance	Enabled white balance procedure and image parameters edit on playback images.
ISO MME	Improved the MME and MII generation. In multiple camera environments a single MME file is generated.
AVI files folder	Added option to set a folder where the AVI files are stored. It may be different from the regular images folder.
Option	Added option to change the position of the first frame of a sequence.
Bug	Disable flip and rotation before opening the ROI dialog of HD cameras (Y7, N7, Y8, and N8).
LUT	Added user LUT with six points. Added a new fixed LUT (s-shape LUT E).
Auto-exposure	Added edit of X, Y, W and H values in Auto-exposure dialog.
Raw Converter	Improved the interface of raw converter. Added a conversion manager window.
Options	Removed the “Configure the cameras with same parameters” and the “Enable double exposure” options.
Motion Trigger	Changed Motion Trigger interface. Added a Motion Trigger dialog similar to AE. Added a test procedure to test Motion Trigger. The percentage has been converted into sensitivity (1 to 20).

Integrated Design Tools

Release Notes (changes from version 2.12.00 to 2.12.02)

Item	Comments
SDK: Add-ons	Added a library to open and read frames from raw files (Mono and Bayer format). Added XsCamera.py file (Interface wrapper for Python). Added XsOpenRawCamera routine to open a raw file without enumeration.
SDK: fix	Avoid the assignment of values 1028 and 1029 to local enumeration port. If this assignment happens, the cameras enter into an infinite loop that can be fixed only by rebooting the cameras.
SDK: flash memory support	Fixed read/write user data into flash memory for legacy cameras. Disabled on HG cameras.
SDK: raw files	Fixed problem reading PSC calibration data from non pipeline cameras (M, HS or X)
1 PPS master/slave mode	Added 1PPS master/slave mode (See What's New).
GPS/RIG UTC Time	Added GPS/IRIG time UTC offset (See What's New)
MT/AE	Fixed Motion Trigger and Auto-exposure. Improved the validation and configuration, fixed crash with old cameras, correct the configuration of Auto-exposure reaction speed.
AVI generation	Fixed AVI generation issues when the main downloaded file format is Bayer (MRF, FBA, TP2)
Download Manager	Added button to the Download Manager window to close the window when download is complete.
Battery status	Added battery status display on NX-Air cameras.
Synchronized Playback	Added option to sync the playback (and the Go To) between separate camera windows.
Misc	Refresh camera list thumbs on camera attach and disable all the image controls on camera detach
MIsc	Save correct acquisition time (milliseconds) in configuration files.

Integrated Design Tools

Motion Studio and SDK 2.12.00
May 11th, 2013

Release Notes (changes from version 2.11.00)

Item	Comments
New SDK files	Added SCICamera.h and SCICamera.cpp files. They implement the SCIcamera class that simplifies the camera management (memory, trigger position and address list).
SDK: Battery status	Added battery status for NX-Air cameras (battery firmware updated is required).
SDK: O-series and Y10 support	Added support for O-series and Y10 camera.
SDK: Camera Reboot	Added a pre-configuration option to force reboot of the camera firmware (XSPP_REBOOT_FW).
SDK: RAW files	Added support for reading raw files from cameras with address list (N3 and N4) and for non pipeline cameras with 3 points calibration.
SDK: JPEG download	Implemented fast jpeg download on HG cameras.
SDK: Hardware Information	Removed hardware information from the enumeration structure. Added CFA pattern and the build number.
SDK: Error message	If the driver cannot read the EEPROM structure, an error is returned.
SDK: HG legacy support	Fixed the support for HG legacy cameras.
Database format	Added a further level to image directories (see What's New).
Advanced Trigger Configuration	Added display of max available value for debounce and delays.
Snapshot	Added option to save a snapshot of current live image (in jpeg format).
Download Manager	Resizable and fixed for auto-download.
General Options	The first page includes Download options, other pages have been reworked.
Camera List	Resizable camera list with optimized display of thumbnails and labels. Added options to erase and restore memory on cameras. Added display of trigger mode conflict. In multi-camera environment live and playback is done only on current camera. Added an option to force storing of current configuration to camera flash memory.
Logo	Allow the use of logo images with width that is not a multiple of 4 pixels.
XS3 and old Y3	Old camera models: enabled 10 bit format on XS3, disabled 10 bit format for old Y3.
Raw File from old N cameras	The raw viewer can display files generated by old N cameras with address list.
Trigger Hotkey	Added space to trigger hot key list.

Integrated Design Tools

Motion Studio and SDK 2.11.00
January 4th, 2013

Release Notes (changes from version 2.10.05)

Cam	Item/Symptom	Comments
All	Download Manager	Added a download manager window (See “What’s New”)
All	Options	Added maximize exposure and show trace folder (See “What’s New”)
All	Auto-exposure	Added exposure minimum and maximum limits (See “What’s New”)
All	Manual Tracking	Added manual tracking option (See “What’s New”)
All	LUT configuration	Enabled in RAW viewer
XS3	Support for calibration	Fixed (added digital gain and current conditions calibration).
All	Save mono images in AVI	Fixed the support for some AVI codec’s that don’t support mono (the image is converted into color before saving it)
All	Save MPEG images	Save the frame rate value (the value is converted in one of the allowed frame rates of MPEG)
All	Advanced image configuration	Added default button to set optimal values (TNK, DNR, Gaussian).
All	Load configuration from file	Fixed (load pixel depth, rotation settings and color balance)
All	Camera Thumbnail list	Improved configuration synchronization and parameters conflict detection.
Y5/N5	Plus mode and binning	Enabled Plus mode and binning on Y5HD, NR5HD and NX5HD.
All	Large RAW files	Fixed bug when a raw file is divided into more than 100 segments.
SDK	Header files	Improved the comments in the “XStrmAPI.h” file. Added more examples for MSVC 2010. SDK built with IPP static libraries (no need to distribute IPP DLLs).
SDK	Read default settings	The default values of image parameters are optimized and read form the camera.
SDK	Trace	Improved the trace, added more information.
SDK	Validation	Improved the validation of the configuration parameters.
SDK	Camera status	Y and N cameras: detect if a camera has images in memory and set the status to XSST_REC_DONE.
SDK	Stored parameters	Y and N cameras: the configuration is saved to the flash memory before start recording and it is restored if the power goes off.
SDK	Trigger position and LWR	Enabled trigger position read and Live while Recording even if XsMemoryStarGrab has not

		been called.
SDK	Read address list from N cameras	Fixed XsReadAddressList for pipeline N/NR/NX cameras.
SDK	Internal clock	Fixed clock precision in old Y4S3 cameras (157.142857 MHz clock).

Integrated Design Tools

Motion Studio 2.10.05
October 25th, 2012

Release Notes (changes from version 2.10.04)

Cam	Item/Symptom	Comments
7/8	Free region of interest	Added support of free ROI in 7 and 8 camera models (see “What’s New” document).
All	BROC	Added option to disable hardware BROC on cameras that supports it (See “What’s New” document).
All	DAS value in time stamp	Added configurable precision in display of DAS value in time stamp (see “What’s New” document).
HG	Raw Files	Open and display HG camera raw files in RAW viewer (see “What’s New” document).
All	Arm camera after open	Added a new option to put the camera in record mode immediately after open (see “What’s New” document).
All	Camera Thumbnail List	Improved the management of multi-camera systems (see “What’s New” document).
HG	Save rotated images in raw format	Fixed
NX	NX, NXA, NXT info	Added information fields to detect NX, NX-Tra and NX-Air cameras
SDK	Second exposure calculation	Correct calculation of second exposure time
HG	Network performance	Added automatic increase of network performance when image download generates errors.
Y5	Frame rate tables	Fixed frame rate tables with correct values
Y/N	Time from recording start	Added a parameter that calculates the time between the beginning of the recording and each frame
Y/N	External sync in	If the “sync in” is configured to “external” and the sync source signal is not detected, the internal sync mode is restored.
All	Exit during download	If a camera is downloading images, Motion Studio cannot exit. A warning message is shown.
Y/N	Auto exposure	Fixed the reference values generation for some models

Integrated Design Tools

Motion Studio 2.10.04
August 3rd, 2012

Release Notes (changes from version 2.10.03)

Cam	Item/Symptom	Comments
Y8/N8	New camera models	Added support for Y8 and NX8 cameras (see “What’s New” document).
Y3-S1	Fastest speed	Y3S1 maximum speed is 3750 fps
Y	GPS support	Added new GPS support on Y cameras
M	M2D display issues	Fixed wrong display of available disk size
M	M2D improvement	Increased M2D write speed with pre-allocation of disk space.
All	Binning with jpeg	Fixed
All	RAW Files and LUT	Apply lookup tables to RAW in the correct order. Save LUT in a separate XML file.
All	DAS and MT	Fixed false triggering issue with MT and DAS
All	Live with DAS	Fixed time out issues in Live with DAS
All	ROI in non-pipeline cameras	Fixed display of color images in non-pipeline cameras with ROI
All	JPEG support	Added support for JPEG library version 8.4.
All	Acquisition date and time	The time stored in the configuration file is the time when the acquisition starts.
All	Master/Slave	Correct configuration of slave camera frame rate (avoids losing pulses from master camera)

Integrated Design Tools

Motion Studio 2.10.03
June 12th, 2012

Release Notes (changes from version 2.10.02)

Cam	Item/Symptom	Comments
All	Delete Trace files	Added option to delete local trace files (see “What’s New” document)
All	Histogram	Added (see “What’s New” document)
All	Sensor Gain	Unified notation for gain (see “What’s New” document)
HG	Download and delete log files	Added menu items to download or delete log files stored in camera flash memory (see “What’s New” document)
Y5/N5	Region of interest	Added regular regions of interest to HD models. Added extra ROI to Y5, N5S1 and N5S2 (see “What’s New” document).
All	MOV codecs	Added support for the enumeration of all the installed MOV codecs (see “What’s New” document)
Y	JPEG support	Improved general support. Added 1016x1016 resolution for Y4 cameras.
All	Color reconstruction	Improved the speed of color reconstruction in RAW files and legacy cameras.
Y4/N4	Disable 1024x1024 parameter affects N3-S3	The parameter has no effect on Y3-S1/S2 and N3-S3 cameras, to avoid problems during the download of Bayer images.
Y4/N4	Wrong display of small ROI (les than 512 pixels)	Fixed
Y5	Timeout issues when rate is changed	Fixed
All	ROI parameters when the image is flipped	Fixed
N3S3	Wrong Bayer Pattern in FBA files	Fixed
All	Vidi Motion	Correct pixel size for Y3-S1/S2 and N3-S3. Added support for extra regions of interest.
HG	Old cameras cannot be configured	Cameras with firmware version less than 04030100 need a different command for rate. Fixed.
All	RAW download issues	When the latest chunk contains one frame the file is corrupted. Fixed

Integrated Design Tools

Motion Studio 2.10.02
April 12th, 2012

Release Notes (changes from version 2.10.01)

Cam	Item/Symptom	Comments
N7	New camera model	Added N7 camera model (see “What’s New” document)
N5-HD	New camera model	Added N5-HD camera model (see “What’s New” document)
Y7/N7	Dynamic Magnification	Added new values (9X, 10X, 12X, 14X and 16X) and a parameter to disable zoom and set a regular region of interest on the camera (see “What’s New” document).
All	Sharpen threshold	Added configurable sharpen threshold to the image view. The parameter may be changed when a Bayer file format is open (TP2, MRF, FBA). See “What’s New” document.
All	Database viewer	The viewer has been improved: preview of RAW files, recursive preview of images and raw file in the DB. See “What’s New” document.
All	JPEG support	Added support for JPEG compression and download (see “What’s New” document).
DAS	Data Save and display	Added support for color data graph on mono images, print graph labels and display of data points in the graph (see “What’s New” document)
M	M camera and Bitflow Frame Grabber	The support modules for Bitflow Karbon frame grabber has been rebuilt with Bitflow SDK version 5.60
RAW	Display of raw files	The display and conversion of RAW files has been improved. Added color interpolation threshold, improved sharpening filter and anti-alias filter.
RAW	RAW download statistics	Added an option to enable and disable the display of statistics after RAW download.
All	Network adapter MTU	Added network Adapter MTU value to the camera enumeration information. Improved the detection and correction of conflicts between MTU size and jumbo packets size.
All	Folder name generation	Generate 4 digits folder names if the numbers from 000 to 999 are already used
All	Reset camera parameters	Do not reset advanced image parameters on camera when the option “Reset camera configuration” is selected
All	IRIG data display	Fixed conversion of IRIG time from image data, by taking care of jitter correction
All	Image transmission	Improved detection of connection failure while the images are transferred

N	RAW File for non pipeline N	Fixed raw download for non pipeline N cameras
All	Vidi Motion	Added new Y7 zoom values and improved calculation of memory size. Added N7 and N5-HD
All	Image Tile Utility	Added codec support and removed single file types (BMP, JPG, …)
Y7	Bayer file formats	Added support for saving Bayer formats with Y7, Y3-S1, Y3-S2 and N3-S3 cameras
N3S3	Dark columns	Added support for N3S3 camera used without dark columns
HG	Max frame rate calculation	Fixed wrong calculation of max frame rate for HG cameras
Y	Non pipeline Y cameras	Fixed BROC and raw file conversion in old non pipeline cameras

Integrated Design Tools

Motion Studio 2.10.00
September 30th, 2011

Release Notes (changes from version 2.09.08)

SDK

Cam	Item	Comments
Y/N	Current condition calibration (XSI_CUR_CAL)	Added support for “current conditions” calibration on pipeline cameras. The camera requires firmware version 158.130 (NR-series) or 147.130 (Y-series). The camera supports the calibration if the info XSI_CUR_CAL is set to 1.
All	XsMemoryDownloadFrame	Added a routine to download RAW images (fast download). The images can be read and converted later. For further info, see the SDK reference manual.

Motion Studio

Cam	Item/Symptom	Comments
Y/N	Current calibration	Added support for current conditions calibration in pipeline cameras
Y4/N4	Binning 3x3 not working	Fixed
Y4/N4	1016x1016 ROI cannot be set	Added support of 1016x1016 ROI in new 1024x10124 cameras.
All	Cinema mode	Binning is disabled and the camera is forced to 30 bit pixel depth
All	Raw Batch	Removed the override of pixel depth in batch mode
All	Images folder doesn’t exist	If the configured Images folder has been removed, the program warns the user at startup
All	External sync mode in Master/Slave	Correct display of frame rate of slave camera
All	Very fast preview mode	Removed
All	Incorrect characters in file and folder names	Added a routine to removed those characters from file and folder names (\ / : * ? “ < > |)

Y5	Color of frame rates	New Y5 cameras have only 2 areas of frame rates (blue and red)
All	Cannot save H264 and MOV in x64	H264 and MOV formats are not supported in native x64 Motion Studio. The formats have been removed.
All	FBA Falcon files	Added support for 10 bit FBA files.
All	After the Attach the camera image is wrong	Fixed
HG	Color Balance not working	Fixed
Y6	Some regions of interest have vertical lines on the sides	Fixed

Integrated Design Tools

Motion Studio 2.09.08
July 11th, 2011

Release Notes (changes from version 2.09.06)

SDK

Cam	Item	Comments
Y4/NR4	1024x1024 resolution	Y4 camera with firmware version 147.129 (or later) and NR4 camera with firmware version 158.129 (or later) support 1024x1024 maximum resolution.
All	XSP_SHARPEN_THR	Added the sharpening filter threshold parameter.
All	XSP_SYNCIN_INV	Added a parameter to invert “Sync In” signal polarity.
NR	IRIG support	Fixed issues in the configuration of the IRIG registers.
HD	Second exposure (XSP_EXPOSURE_DBL)	Fixed the computation of the second exposure (in double exp mode) for HD cameras. The value is returned in the XSP_EXPOSURE_DBL parameter.

Motion Studio

Cam	Item/Symptom	Comments
All	Image folder in Open RAW dialog	The images folder is displayed and may be changed (see the “What’s New” document).
All	Support for MOV files	Apple QuickTime is required, not supported on MS x64 (see the “What’s New” document).
All	Free disk space in Save Acquisition dialog	The amount of free disk space is shown (see the “What’s New” document).
All	New options	Added AVI codec, exposure format and multiple instances of Motion Studio support (see the “What’s New” document).
All	Improved focus line	Added computation on color components or luminance (see the “What’s New” document).
All	Improved RAW converter	Added more parameters to edit (see the “What’s New” document).

All	Improved RAW batch editor	Added more parameters to edit and destination folder (see the “What’s New” document).
N/Y	“Sync In” polarity inversion	The polarity of the “Sync In” signal may be changed (see the “What’s New” document).
GE	Forbidden IP addresses	Some IP addresses ranges cannot be used for the cameras.
NR5	Extra ROI	Added three extra regions of interest for the NR5 (2560x1920, 2560x1440, 2560x1080)
All	Time stamp info	Correct refresh of time stamp info on Live and playback images
All	Launch of external tools from MS doesn’t work	Fixed
All	Save images in some format doesn’t work	Fixed
Y6	Support for non pipeline Y6	Restored the support for old non pipeline Y6 cameras

Integrated Design Tools

Motion Studio 2.09.06
April 15th, 2011

Release Notes (changes from version 2.09.04)

SDK

Cam	Item	Comments
All	Callback parameter type changed	The parameter “ULONG nParam” has been changed into “void* pParam”. In 64-bit environments the 4 bytes ULONG is not enough large to store pointers for the callback routine.
Y7	Support for Y7	Added support for the Y7 camera model. Three resolutions (1920x1080, 1280x720, 640x360) and the dynamic magnification.
Y7	Dynamic Magnification	Added the dynamic magnification parameter (XSP_HD_ZOOM). The zoom range is from 1X (no zoom) to 8X (8 times zoom)
Y4/N4	Support for EDR	Added a field to the enumeration structure that shows if EDR is supported. The EDR option is not free.
All	LabVIEW	Added the support for 64-bit LabVIEW

Motion Studio

Cam	Item/Symptom	Comments
Y7	Dynamic magnification dialog	Added the support for the Y7 camera and the dynamic magnification parameter (see the “What’s New” document).
All	Camera List interface	Modified the interface (see the “What’s New” document)
All	Vidi Motion	Added new Vidi Motion with the following new options (see the “What’s New” document): • The option to calculate the resolution from a frame rate. • The option to print a table of “resolution versus rate” • The option to export the calculated data to a text file.
All	XDR support	Improved the support of XDR (see the “What’s New” document).

		Only two values of exposures are allowed ($T_{ro}/3$ and T_{ro}, where T_{ro} is the readout time). The exposure edit box has been replaced with a combo box. Each option of the combo box contains the sum of first and second exposure.
All	Camera List reworked	The camera list bar has been modified. The original buttons have been replaced by a Tools button and an Options button (see the “What’s New” document).
All	UAC friendly	Motion Studio has been modified to store configuration data to non system folders and registry sections (see “What’s New” document).
All	Digital signature certificate	The digital signature certificate has been updated in the USB 2.0 camera driver. The certificate allows the use of the driver in 64-bit Windows Vista and 7
All	Fast download speed	The fast download speed has been improved in single-pipeline Y cameras. It requires a firmware upgrade to the latest version of firmware.
All	Master/Slave improvement	Master/Slave mode has been improved. • When the M/S mode is selected, the camera sync connection is tested with a single snap to check if the cameras are correctly configured. • When the Camera List is activated, the playback controls and some camera parameters can be edited in the windows of the slave cameras. • Added a procedure to automatically detect the master camera.
All	RAW file display	Improved the display and playback of RAW files. The controls are disabled, but the user may change color parameters and saved the data into a regular file format.
All	RAW file conversion with binning	Fixed RAW file conversion when binning is enabled
All	Network configuration improvement	The network adapter MTU is compared with the camera jumbo datagram size. If any problem is detected, a warning message is displayed.
All	Fast download and “Save AVI file” option	The “Save AVI” option was ignored when the fast download was active. Fixed.
Y4/N4	EDR support	Improved the support of EDR in mono and color.
N/Y	Hardware error 2006 (bind)	A bug that could generate hardware error no 2006 has been fixed.
Y6	Jumbo packets	Added the support for jumbo packets on Y6 camera
Y4	Skip first two frames in normal acquisition mode	When the acquisition is done in normal mode and the camera is not in Master/Slave mode, the first two frames are skipped.

Integrated Design Tools

Motion Studio 2.09.04
December 30th, 2010

Release Notes (changes from version 2.09.02)

SDK

Cam	Item	Comments
Y6	Support for Y6	Added support for the new designed Y6 camera model
Y3/SN3S	Corrupted ROI	Fixed corrupted ROI in Y3-S1, Y3-S2 and N3-S3 cameras

Motion Studio

Cam	Item/Symptom	Comments
All	HDMI controls	The HDMI controls have been moved to the top part of the camera bar (see What's New)
All	Editable pre-trigger	The pre-trigger edit box is not disabled anymore. The user may type the number of pre-trigger frames or move the slider as before (see What's New)
All	Acquisition size	The size in MB of each acquisition is shown in the Advanced Acquisitions Configuration dialog box (see What's New)
HG	Support for HG XML files	The support of HG XML configuration files has been added. The XML data is displayed in the Extra Tab of the image bar (see What's New)
All	Camera Configuration	The configuration of camera parameters has been optimized (send only the parameters that have been changed)
All	Fast Download	The fast download and the display of RAW files have been improved. The RAW files are divided into 256 MB size segments. The camera configuration controls are disabled during the download to avoid errors.
All	Tracking calibration	Fixed a problem due to centered image
All	Double exposure Live	Correct display of double exposure images in Live mode

All	Multi-camera system	Enabled the configuration of color parameters after an acquisition in HG mixed environment
All	Low Light mode and external sync	Fixed low light mode with external sync
All	BROC sequences	Added correct display of frame indexes and time in BROC sequences
All	Images saved with XVid codec	Added support for reading AVI files saved with XVID codec
N3	Wrong value of internal clock	Fixed read of clock frequency

Integrated Design Tools

Motion Studio 2.09.02
November 2nd, 2010

Release Notes (changes from version 2.09.01)

SDK

Cam	Item	Comments
Y	XSP_HDMI_OVERLAY	Added parameter to enable and disable the data overlay on the video output (Y cameras only)
Y	XSP_WBTBL_TEMP	Added a parameter to set the color temperature of the current color balance table (used for the display in the HDMI overlay)
Y/N	XSI_HW_INFO and XSI_HW_BOARDS	Added support for the display of camera components part numbers and quantities.
Y/N	XSP_PREV_MODES	Added new preview modes.
Y/N	XSP_NOISE_DKCOL	Added parameter to enable or disable the use of masked (dark) columns in the reduction of the time-dependent noise (currently enabled on N4 cameras only).

Motion Studio

Cam	Item/Symptom	Comments
N4	New calibration	Added double calibration (with and without dark columns subtraction)
N5	New calibration	Added 3 points PSC calibration for N5
Y	HDMI controls	The HDMI controls have been moved to the camera bar. The HDMI pad has been removed (see “What’s New”)
All	Save Images As	The “Save Images As…” dialog has been changed (see “What’s New”)
Y/N	Camera calibration	A parameter for the configuration of dark columns has been added (see “What’s New”)
Y/N	Live modes	The selection of “Live” modes has been moved to the camera menu. A new fast

		“Live” mode has been added (see “What’s New”)
All	Camera hardware info	Info about camera part numbers and quantities has been added (see “What’s New”)
All	ROI dialog and rotated images	Correct display of rotated images in ROI dialog.
Y3/N3	Extra ROI check box (1504x1128)	The check box has been removed and the resolution added to the resolution list.
HD	Display of current ROI	The resolution is displayed, not the origin (introduces confusion)
All	Switch between segments	When the software switches between segments, the recording start address is sent to the camera
Y4/N4	EDR	Activated EDR for Y4 and N4 mono cameras.
All	Display of rate when the sync source is external	If the sync source is external the rate is read from the camera and the edit box is grayed out.

Integrated Design Tools

Motion Studio 2.09.01
September 25th, 2010

Release Notes (changes from version 2.09.00)

SDK

Cam	Item	Comments
N/Y	New camera models	Added the support for N5-HD, Y3-HD and N3-S3.
All	XDR support	Added XS_EM_EDR and XS_EM_XDR modes
N/Y	IRIG/DTS sync mode	Added XS_SIC_IRIG_DTS_EXT (enable IRIG/DTS mode with external 1pps generation) and XS_SIC_IRIG_DTS_INT (enable IRIG/DTS mode with internal 1pps generation for N cameras only)
N/Y	Lookup Table channels mask	Added XSP_LUT_CHN_MASK parameter to enable or disable RGB channels in the Lookup Table
N/Y	XsEnableResize	Added a routine to resize the image before reading it (useful for thumbnail views)
N	Address List	Restored the address list for new design N cameras
N/Y	Fast startup	Added the support for fast camera startup (the firmware is loaded and initialized in a few seconds)

MotionStudio

Cam	Item/Symptom	Comments
N/Y	New camera models	Added the support for N5-HD, Y3-HD and N3-S3.
All	New Main Menu dialog box	Added a new dialog box with new options (see What's New)
All	New buttons in main toolbar	Added new buttons in the main toolbar (see What's New)
All	Image is centered	If the image size is smaller than the size of the window, the image is centered and not aligned to the top-left side (see What's New).
All	Switch to next segment	A new option has been added to the record configuration dialog box. The option

		is used when the camera memory is segmented. When the acquisition on a segment is done, the software automatically switches to the next segment, arms the camera and starts a new acquisition (see What's New).
Y3/N3	Extra ROI (1504x1128)	A new extra region of interest has been added to the Y3-Classic, the N3-S1 and the N3-S2 camera models. The ROI (1504x1128) is selected via a dedicated check box in the ROI dialog box (see What's New)
GE	Configurable Ethernet packet size	The size of the Ethernet packets may be configured in the "Motion Studio Network Configuration" utility. Instead of simply checking the Jumbo option, the user may select the size in bytes and configure a few values between 1500 and 9000 (see What's New).
Y	HDMI modes	Added new HDMI modes for new Y cameras: 720p, 1080p @ 60 Hz, 1080p @30 Hz
All	Firewall	Added new routines to add Motion Studio to the list of firewall's allowed programs.
All	Abort during fast download	The program restores the correct image format.
HG	Lookup Tables	Added the support for LUT in HG cameras.
HG	Crash when the camera is open	Fixed
N	BROC issue	Fixed

Integrated Design Tools

Motion Studio 2.09.00
July 31st, 2010

Release Notes (changes from version 2.08.03)

SDK

Cam	Item	Comments
All	XsLoadDriver with 1 parameter	Added a parameter to XsLoadDriver (nUSBNotify). If the parameter is 1, the driver sends a notification to the application when the USB cable is disconnected or reconnected, otherwise no notification is sent.
All	XSP_GAUSS_FILTER	Added the Gaussian filter, the range is from 0 (disabled) to 16 (maximum blur). The default value is 0.
HG	XSP_BOARD_TEMP	Implemented for HG cameras
All	XSP_FLIP, XSP_ROTATE	Added parameters to flip and rotate the image (flip horizontally or vertically, rotate 90, 180 or 270 degrees)
All	XSP_LUT and XsLoadLookupTable()	Added support for lookup tables in the driver (a set of 4 pre-defined LUT and 1 user-defined LUT).
N	N3 and N4 pipeline	Added support for N3 and N4 pipeline
All	Read exposure and period	The conversion from nanoseconds to internal camera clocks introduces a precision error, and then the read value is different from the value previously written. Fixed.
All	Added xscam_hlp.h and xscam_hlp.cpp	Added two file that contain a helper class for the dynamic load and unload of the driver. Instead of linking the project with the lib file, include those two files and use the **g_XsCamHelper** object.

MotionStudio

Cam	Item/Symptom	Comments
All	Most recently used files	A new button has been added to the Main menu dialog. If the button is clicked, a list of the most recently used files appears (See What's New)
All	Camera Wizard	Removed obsolete buttons. Added Select All, Deselect All and camera Info

		buttons. Added index to each listed camera (See What's New).
All	Profiles	Added Automotive profile. Modified "digital cinema profile with exposure in degrees (See What's New).
All	De-noise and anti-alias	Added De-noise and anti-alias in camera control bar (See What's New).
All	Lookup Table	Added cubic-spline lookup table (See What's New).
All	Save AVI option	Added "save AVI" option (See What's New).
All	Rename and Sort	Added edit camera name and sort options to Camera Thumbnails list (See What's New).
All	Folder names in multi-camera environment	In a multi-camera system the creation of acquisition folders has been improved (See What's New).
All	Advanced de-noise	Added advanced Denoise dialog (See What's New).
All	Flip and rotate interface	The flip and rotate options have been introduced in the SDK. The interface has been simplified.
All	Export data in LabVIEW lvn files	Added an additional tab to the header, correct the delta T value with multiple channels
N	Multi-camera environment with N only	Motion Studio shows the "Images in memory" state
All	Image prefix	The last character of the name cannot be a number, a space, or a hyphen
Y4	Acquisition in normal mode	The first 2 images of each acquisition are disposed.
All	Live time out in multi-camera system	The refresh rate of background cameras is computed from the total number of cameras
HG	Impossible to download images with ROI smaller than 256x256	Fixed
Y5HD	Download with GE produces images with black areas	Implemented the full support of GE for Y5-HD
N	Jumbo packets	Activated the support of Jumbo packets on new pipeline N4 and N3.
All	Jumbo packets	When jumbo packets is activated, show it in the status bar
All	When the sync is external the time stamp rate is not correct	When the sync is external, read external rate and display it in time stamp
All	"Sync Cfg" button in camera list does not check for conflicts	When the button is clicked, the software checks for conflicts and refreshes the camera list.
All	Exiting the program when the HDMI pad is active produces a crash	Fixed

All	White balance does not work when hue or saturation are active	When the “Reset” button is clicked, hue and saturation are reset
All	Additional stripe with time stamp and fast download produces shifted images	Fixed

Integrated Design Tools

Motion Studio 2.08.03
April 10th, 2010

Release Notes (changes from version 2.08.00)

SDK

Cam	Item	Comments
All	XSI_SUB_MODEL	Added information about camera sub-model. Y4 camera has submodel S1 (1), S2 (2) and S3 (3). Other cameras have value 0 (undefined)
All	XSP_CLOCK_SPEED	Y5 camera with Orion II sensor has configurable clock speed (XS_CLS_LOWER, XS_CLS_MIDDLE, XS_CLS_HIGHER)
Y5-HD	XSP_HD_ROI	Added ROI index selection for HD cameras. Instead of setting the ROI parameters, select one of the pre-defined HD ROI.

MotionStudio

Cam	Item/Symptom	Comments
All	Histogram window	The histogram window is resizable and the luminance histogram has been added for color cameras (see What's New).
All	Delete raw file after conversion	Added option to Motion Studio (see What's New)
All	CFA filter after interpolation	Added option to Motion Studio (see What's New)
Y5	Y5-HD (Diablo)	Added support for Y5-HD (Diablo)
Y5	Different colors of Rate control	The rate is shown in green, blue or red (see What's New)
M	Bad pixels correction	Added. Single bad pixels are removed.
All	The "Ctrl+S" key doesn't work for open files	Fixed
All	When images are saved the Abort button doesn't work	Fixed
N	Double exposure live crashes	Fixed
HG	Raw converter doesn't work	Fixed
All	Mater/Slave Live does not work	Fixed

All	Save TP2 images, wrong colors	Fixed
M	NI frame grabber on x64 OS doesn't work	Fixed
All	Save raw data with 30 bits. Before conversion change the file type to AVI	If the file format doesn't support 30 bit, the pixel depth is automatically changed to 24.

Integrated Design Tools

Motion Studio 2.08.00
March 6th, 2010

Release Notes (changes from version 2.07.22)

SDK

Cam	Item	Comments
Y/N	Marker	**XSP_MARKER_CFG**: enables marker on sync in or trigger in connectors **XSP_MARKER_VAL**: read-only parameter, it returns whether the current frame has a marker or not.
Y	Color Interpolation Threshold	**XSP_CI_THR**: in pipeline cameras the advanced interpolation algorithm is adaptive. The parameter controls a threshold. The value of the threshold is used to check the local gradient and decide if interpolate with bilinear or advanced
M5	Orion II sensor	Added the support for M5 cameras with new Orion II sensor
All	**XsMemoryPreview**: the value in pnFrameIndex is always 0	Fixed: the correct index of the previewed frame is updated in “pnFrameIndex”.

MotionStudio

Cam	Item/Symptom	Comments
All	White balance/Color balance	New procedure (see What’s New)
Y	Color Interpolation Threshold	Added for pipeline cameras (see What’s New)
Y/N	Marker	Added option to Time Stamp and to Advanced Trigger configuration (see What’s New).
All	Time from trigger time stamp	The user can select the format: seconds with 0 to 6 digits, or milliseconds with 0 to 3 digits.
M	National Instruments frame grabber	Added support for 64 bit OS (latest version of NIIMAQ is required, it may be downloaded from the NI.com web site)
All	Camera List (thumbnail list) is improved	• The automatic detection of new cameras is disabled as default. • The thumb list is shown with some parameters (exposure, rate, ROI,

		frames) • If more than one camera is selected, the parameters that are different are displayed underlined. • If more than one camera is selected and the user changes a parameter, that parameter is changed to all the selected cameras. If one of the cameras does not support the new value, an error message is displayed.
HG	Post-trigger status	When a trigger is received, the software shows the “Recording post-trigger” status immediately
N3	Lo Light mode frequency	Set to 30 fps
All	Double exposure is disabled	Fixed
M5	M5 with Orion II	Added support with max resolution of 2288x1728
All	Pre-trigger slider precision	The precision has been increased.
Y6	If a ROI is not in the list of pre-defined ROI, the image looks non-calibrated	Fixed: the software uses the calibration data that best matches the selected ROI.
Y	Non pipeline cameras do not show color images correctly	Fixed
All	Save camera configuration interface in multi-camera system	The interface has been changed: the user can select a subset of cameras to save

Integrated Design Tools

Motion Studio 2.07.22
February 2nd, 2010

Release Notes (changes from version 2.07.20)

SDK

Cam	Item	Comments
Y	Support for new cameras	Y4L (4500 fps) and Y5 with Orion II sensor (600 fps)
All	Added sensor model detection	Added a new list of sensor models for all the IDT/Redlake cameras.

MotionStudio

Cam	Item/Symptom	Comments
USB	Digital signature	The USB sys driver for the IDT cameras is digitally signed.
All	Raw Converter Options	When the RAW Converter is launched, a dialog box appears with two options: • Select the output file format. • Delete the raw file after the conversion.
All	Time stamp	Added an option to print the name of the file where the image is stored.
HG	Images download	The download issues have been fixed and the raw download implemented.
All	Synchronization Motion Studio – GE Configurator	When GE parameter are edited in the GE Configurator, the program checks if any instance of Motion Studio is running and, if yes, it sends the updated parameters to Motion Studio.
N	IRIG	Enabled IRIG for N cameras
All	Memory allocation optimization	The allocation of memory buffers in Motion Studio has been optimized.

Integrated Design Tools

Motion Studio 2.07.20
December 30th, 2009

Release Notes (changes from version 2.07.18)

SDK

Cam	Item	Comments
Y	Time limited license	Added time limited license to new designed “pipeline” Y cameras
Y	Added XSP_SYNCOUT_ALIGN	Added sync-out alignment parameter. In auto-exposure mode, the camera exposes at the end of the acquisition period. The Sync Out signal can be aligned to the exposure start or to the Sync In signal.
Y	Write/Read data from/to camera RAM	Added a parameter to XsReadUserDataFromFlash and XsWriteUserDataToFlash. The camera memory can be written.

MotionStudio

Cam	Item/Symptom	Comments
M5	Double exposure	Modified internal registers settings to let the double exposure work (firmware version 14 is required)
M	Sync Out precision	Correct timing registers to improve precision in the configuration of rate
Y	Save data to SD card	• Implemented BROC • Improved management of download and abort
Y	Temperature display	Added temperature time stamp with configurable units (Celsius or Fahrenheit)
Y	Configuration of Sync-out alignment	Added to the Advanced trigger configuration dialog box
All	Display of Time Stamp on Bayer file formats	Added: time stamp cannot be printed on Bayer file formats (TP2, FBA, MRF, MCF) but it is displayed in Motion Studio when a sequence is open and played back.
All	Display of grayscale images from color cameras	Correct

All	Camera Thumbnail list improvements	Improvements: • When switch from a camera to another, keep memory of the tabs positions. • Live button is synchronized with selected cameras. • When a camera view is open, the fit to window applies. • Added a button to copy the configuration of the foreground camera to all the selected cameras (synchronization of configurations) • Increased the size of thumbnails.
All	Tracking improvements	• Correct refresh of tracking positions • Save and display tracking data with IRIG time, if available.
All	Display download progress on status bar	Added Abort button on status bar
All	RAW files viewer	RAW files can be open and played back
All	Save extra data option	Extra data (IRIG time, temperature, time stamp) may be saved in the images. When the sequence is open and played back the data is read and can be used for tracking or display of time stamp in Bayer image formats (MRF, TP2, FBA).
All	AVI codecs	Added a check to select AVI codecs that are supported.
All	H.264 format	The format is supported only if Quick Time is installed. If not, the images cannot be saved.

Integrated Design Tools

Motion Studio 2.07.18
November 27th, 2009

Release Notes (changes from version 2.07.16)

SDK

Cam	Item	Comments
Y	Auto-exposure	Added parameters to configure auto-exposure in Y3/Y5 cameras (required firmware version is 99-124, required hardware is “new design”)
Y	Post-recording operation (download to SD card)	Added parameters to configure post-recording operation (required firmware version is 98-123, required hardware is “new design” with a specific main board modification)
All	Added parameters to “XsGetCameraStatus” routine	Added the error code and 3 variables to detect additional information. Used when the camera is downloading data to the SD card.

MotionStudio

Cam	Item/Symptom	Comments
Y	Auto-exposure implementation	Added (see “What’s New” document)
Y	Download to SD card	Added (see “What’s New” document)
All	Window 7	Added support for Windows 7
Y/N	Management of camera reboot when Motion Studio is open	Motion Studio detects that the camera has lost power and has been rebooted. It requires a firmware upgrade (99-124 for Y cameras and 99-90 for N cameras)
GE	Network adapter selection	Reintroduced the selection of network adapter. The default is “broadcast” (the driver searches through any active adapter)
All	Dynamic noise reduction configuration removed	Motion Studio automatically computes the correct value without any user’s operation
All	CFA interpolation algorithms	The selection of the algorithms has been reduced (new design cameras have

		“advanced” only, other cameras can select “Bilinear” or “Advanced”) Added a pre-filter on green channel to avoid “worm” effect on RGB images.
Y	New design cameras memory allocation	Optimized
Y4/N4	Added support for new resolution 1016x1016	Dramatic improvement of image quality (requires a firmware upgrade and recalibration)
All	Camera thumbnail list	Added scroll bar when the number of thumbnails is large.
N	Maximum number of frames that can be acquired	The number has been reduced to 16348 to avoid the overflow of the driver structures.

Integrated Design Tools

Motion Studio 2.07.16
October 16th, 2009

Release Notes (changes from version 2.07.14)

SDK

Cam	Item	Comments
N	Acquisition Address List	Acquisition address list is sorted in the driver, there is no need to read the First Frame Index anymore
All	Motion Trigger	Motion Trigger has been added to the SDK. The procedure of detection is performed by the firmware, with real time response results.
All	Datagram size (Jumbo packets)	Added a parameter to set datagram size for Ethernet cameras (Y3 and Y5 with FW version 122 – 96 and above)
All	Information	Added info for: • Motion trigger support • Write to disk support (M cameras) • Compression (N cameras) • Configurable Datagram size

MotionStudio

Cam	Item/Symptom	Comments
All	Zoom Tools	Added Zoom In, Zoom Out and Dynamic Zoom (see What's new document)
All	Reset camera configuration	Added option (see What's new document)
All	Close selected cameras	No need to close all the open cameras. The user can close only one or a subset of the open cameras and keep the others open.
M	M2D (Direct Write To Disk)	Improved in Motion Studio (see What's new document)

Y	Jumbo datagram size	Added Jumbo packets support (see What's new document)
All	Selection of network adapter	Removed. The driver is able to find the cameras without selecting the network adapter (see What's new document)
All	Download progress in status bar	The download progress can be displayed in the status bar (see What's new document)
N4	N4 @ 3000 fps	Added support for N4
N3	N3L (Light version)	Added support for N3L
All	Improved Camera List (Thumbnails) view	• The user can close a subset of cameras (not all of them). • Any camera that is connected can be automatically detected and added to the thumbnail list. • If a camera is disconnected, the thumbnail is grayed out, and the camera window cannot be open. • If a camera view is "Live" mode but it's in background, the thumbnail is refreshed every 5 seconds. If a camera view is in foreground, the refresh is "real time". • Mouse operations: a single click on the thumbnail puts the view in foreground. A double click puts the view in foreground and starts the "Live" mode.
All	Fast download	Optimized and faster
All	Button to configure JPEG compression is disabled	Fixed
X/HS/XS	Image processing does not work	Implemented the support for Image processing parameters (Dynamic NR, sharpen, gamma, etc.)
Y/N	Communication issues	Fixed
M	Allocation error with Bitflow FG	Fixed
HG	Software asks for calibration file	Fixed
All	Motion Trigger does not work with BROC	Fixed

Integrated Design Tools

Motion Studio 2.07.13
August 26th, 2009

Release Notes (changes from version 2.07.13)

SDK

Cam	Item	Comments
Y	Added XS_HDMI_INDEPENDENT mode	HDMI output is independent from the computer
Y	Added XsReadToVideo routine	The routine is active in “new Design” Y cameras. The user can send acquired images or live images to the video output, independently from the computer.
All	Added XSI_CAL_NAME info	The info returns the calibration file name (name + extension).
All	Calibration op-codes	The calibration op-code names have been reduced and changed. The user cannot overwrite the factory calibration file. The user can only make current conditions calibration.

MotionStudio

Cam	Item/Symptom	Comments
All	Redesigned calibration dialog box	See the “what’s new” document
All	Added “Raw converter batch file” editor	See the “what’s new” document
All	Bayer file formats (TP2, FBA, MRF, MCF)	See the “what’s new” document
All	Color configuration and white balance in saved images	See the “what’s new” document
Y	HDMI pad (new design cameras)	See the “what’s new” document
All	JPEG compression	See the “what’s new” document
All	Zoom	Added zoom from 500% to 1500%
N4L	Lo Light mode doesn’t work	Set Lo light freq to 20 Hz
Y	Fast download for “new design” cameras	Added
All	HG mixed environment (HG and non-HG cameras)	• Non HG cameras require that the memory is erased after each acquisition. • Non HG cameras cannot do multiple acquisitions. • If a camera is disconnected, it disappears from the thumbnail’s list. • Added routine to detect that HG cameras are disconnected.
M	Minimum value of ROI height was 32 pixels	Now the minimum value is 8 pixels

Integrated Design Tools

Motion Studio 2.07.12
July 11th, 2009

Release Notes (changes from version 2.07.10)

SDK

Cam	Item	Comments
Y	Added support for IRIG/GPS (**XS_SIC_EXT_IRIG**)	The camera can be configured to phase lock its sync frequency to the external GPS signal (1 Hz). The camera detects the signal and generates a frequency that is aligned to the GS signal. It also read the IRIG time stamp that can be read with the **XsReadIRIGBits**. The format of the IRIG bits buffer is shown in the SDK reference.
Y-new	Added support for new design cameras (**XSI_NEW_DESIGN**)	New design cameras do not require a download of the calibration file in the computer hard disk. Background and pixel sensitivity correction are done in camera firmware.
Y-new	Added read of camera sensor board temperature (**XSP_BOARD_TEMP**)	New design cameras have a temperature sensor. The temperature is read in 1/100 of degrees C.

MotionStudio

Cam	Item/Symptom	Comments
All	HDMI shows a white image	Wrong default of image processing parameters (saturation). Fixed.
Y4	GE connection, the image has some noisy or black lines at the bottom	GE communication error fixed.
Y4	Color cameras do not support XDR	XDR is disabled for Y4 color cameras.
All	Image rotation, flip does not work	Fixed
All	Histogram, cannot display all 3 color components in the same window	Fixed
M	External sync cannot be configured because an error message appears	M cameras cannot detect external sync rate and duty cycle. Ext sync is allowed anyways.
HG	Image processing parameters (Dynamic NR, gamma, hue, saturation, etc.) don't work	Implemented image processing for HG cameras
All	BROC mode and raw conversion, the images are wrong	Fixed
All	Open image sequence, if the memory cannot be allocated the program crashes	If the memory cannot be allocated, the program shows an error message and aborts the "open image" procedure.
All	Click Browse button to change database directory, the tree view is initialized with the desktop, not with the current database directory	The tree view is initialized with the current database path.
Y-new	CFA interpolation has no effect on new design cameras	CFA interpolation is disabled.
All	Added Disk cleanup tool	Added a tools to: 1. clean up the hard disk from old versions of software drivers and modules. 2. Move the calibration files from WinSys32 to the correct directory in "Common Files".
All	Profiles	Added "Digital Cinema" profile, with "Expert" and "Simplified".

Integrated Design Tools

Motion Studio 2.07.08
March 12th, 2009

Release Notes (changes from version 2.07.05)

Bug Fixes

Cam	Issue	Comments
Y	BROC mode on a camera with more than 4 GB on memory fails	Fixed
Y5	With certain ROI, the max speed cannot be reached	The max speed has been slightly reduced
M	64-bit OS and Coreco frame grabber: a time out does not allow allocating more than 16 GB of memory for the acquisition	Increased the operation time out
All	On Windows Vista saved images cannot be open	Fixed
All	If a color JPEG file is open, colors are wrongly displayed	Fixed
All	Motion Studio 64-bit: tools like Raw converter and GE configuration cannot be activated from the tools menu	Fixed
All	Master/Slave: if the database folder is changed in the Master camera window, the slave cameras are not aware of the change	Fixed
All	Color images cannot be saved as TP2 or FBA	If the image is RGB (for ex. TIFF), the Bayer information cannot be retrieved from the RGB data, then the images cannot be saved as TP2 or FBA
USB	Windows Vista 64 bit does not load drivers if they are not digitally signed	Our USB 2.0 drivers are not yet digitally signed. Temporary solution: • Turn on the computer. • Press the F8 Key to activate the Startup menu. • Select the “Disable Driver Signature Enforcement” option.

Implementations

Cam	Implementation	Comments
Y4L	Full support	Added full support to MotionPro Y4L (4000 fps) digital camera
All	Plus Mode	Plus mode can be independently activated on each camera in Motion Studio.
All	Image Tile Utility	Added a command line option: the utility can be activated from a shell window with command line parameters (see the manual)
All	30 bit images “Save As”	The user can save 30 bit images as 30, 27 or 24 bit (if the file format supports the bit depth)
All	FBA color support	Added support for color FBA (Bayer)
Y	Factory and current calibration	Factory calibration parameters (BKG and PSC) can be used with current condition parameters (BKG and PSC) in the following ways: • Factory BKG + Factory PSC • Current BKG + Current PSC • Current BKG + Factory PSC • Factory BKG + Current PSC
All	ActiveX serial number property	Added serial number property to instance more than one ActiveX control and work with more than one camera

Integrated Design Tools

Motion Studio 2.07.05
January 12th, 2009

Release Notes (changes from version 2.07.03)

Bug Fixes

Cam	Issue	Comments
X4	Mono camera dead pixels	Added automatic filtering to remove dead pixels (if the camera is color the filter is not implemented because it introduces artifacts)
X	Incorrect Frame capacity computation	Fixed
HG	Decimated preview on mono cameras is not correct	Correct the interpolation for mono images
HG	Erase memory command	Correct management of erase memory (messages and controls disabling). Added the Status message “Images in Memory” when the memory is full.
N3,Y3	If the ROI width is not a multiple of 32 pixels, some lines appear on left side of the image	ROI width is limited to multiple of 32 pixels
DAS	Channels 9 to 116 do not work	After the reset of the DAS, all the channels are forced to single ended. This fixes the problem.
DAS	Filtered data are shifted by half the filter windowing size	Fixed
DAS	The software crashes if some filter is applied to multi-channel data	Correct computation of filters, crash eliminated.
DAS	Signals are switched if the number of channels is odd	Fixed
N	In master/slave mode the preview is not refreshing	Fixed
All	In master/slave mode the parameters are not updated in slave cameras	Fixed
All	In Master/slave mode the “Go To…” button is enabled on slave cameras’ bar.	The button is disabled. It’s enabled on master camera’s bar only
All	If a GE camera is connected to the computer after the program start, the program detects 0.0.0.0 as adapter’s IP address.	Correct. Before starting the camera wizard, the program refreshes the network adapter’s IP address value.
All	Error messages	Improved error messages
SDK	XsGetVersion reads the version of the driver stored in the Windows/system32 folder	The routine reads the value of the currently loaded module, regardless of where the module is located
Y5	Minimum rate is 10 Hz	Minimum rate for Low Light Mode has been set to 20 Hz.

Implementations

Cam	Implementation	Comments
M	Frame grabber support	Added support for Bitflow Karbon frame grabber
M	Load Sapera configuration files	The driver checks the Sapera configuration directory and then the Windows/system32
M	Dalsa multi-camera	Added support for multi-frame grabber and camera. Two M cameras work with two frame grabbers in Motion Studio (simultaneous live included)
M	Memory Setup	Added a message to display when the frame grabber is allocating and setting memory up.
All	JPEG	Introduced JPEG support
All	AVI Codec	Added configurable AVI codec (default: INDEO 5.11)
All	Read/Write Camera Configuration	The procedure has been improved, the program stores in the file a list of all the cameras included in the file and displays it when the configuration is listed. The user cam also save a single camera configuration in a multi-camera environment
All	Galileo support	Added the support to the illumination sensor Added more colored icons for different devices Added a button to add newly detected devices without erasing the current list
All	Falcon FBA support	The camera model and serial number are saved in the FBA files.
SDK	Information parameters	Added XSI_CAL_PATH to read the path to the camera calibration directory
SDK	Examples	Updated
DAS	Tile images and data	The height of the data pane is configurable
HG	Trigger delay	Added the trigger delay parameter in Motion Studio
Y4	Calibration	Optimized for 3000 fps and 8 bit data

Integrated Design Tools

Motion Studio 2.07.03
November 5th, 2008

Release Notes (changes from version 2.07.02)

Bug Fixes

Cam	Issue	Comments
All	Images and Data from DAS are not synchronized, correct trigger position is not detected	Fixed: X4 camera requires a firmware upgrade.
Y5	Horizontal shutter line in Plus mode	Fixed
N	Pixel Sensitivity Correction calibration	Correct the procedure for the computation of the PSC coefficients
All	Create New Database: if the current database does not have system files, the creation fails.	If the program does not find system files in the current database path, it copies them from the original Images directory (C:\Program Files\IDT\MotionProX\Images).
All	Start and Stop Images: if the user saves the images the “Start” and “Stop” indexes do not correspond to the selected ones	Fixed.
Y/N	If the user starts an acquisition and closes Motion Studio, the acquisition is aborted	If the user closes Motion Studio, the camera continues the acquisition until the trigger is issued
N	If the acquisition is finished when Motion Studio is off, the images are lost	The user can start an acquisition, exit Motion Studio, issue the trigger, restart Motion Studio and playback and save the acquired images.
Y5/N5	Wrong limit of maximum exposure in double exp mode	The value of maximum exposure has been set to 1/F – 6 µs
All	During download the errors are not detected	If the download of an image fails, the download process is stopped and a message is shown
HG	Image Transfer Error when the ROI is small	Fixed
HG	If the camera is connected to the slow interface, the “Edit IP Address” dialog box shows the wrong value	The “Edit IP Address” dialog shows always the internal IP address
HG	When Motion Studio starts, it checks for calibration file	HG cameras do not have calibration file, the control is not done

Implementations

Cam	Implementation	Comments
SDK	C# interface	The “XsCamera.cs” file has been improved
All	Galileo Wireless System	The integration between Galileo and the camera has been improved
Y	PLL values	Added new default for HDMI configuration
All	Camera List Interface	Added a “Camera List” vertical bar that can be activated in a multi camera system. The bar shows thumbnails of the cameras and allows the control of a subset of the cameras, like in Motion Central.

Integrated Design Tools

Motion Studio 2.07.02
October 8th, 2008

Release Notes (changes from version 2.07.01)

Bug Fixes

Cam	Issue	Comments
N	Double exposure and XDR not active	Restored
All	Tracking: Basic calibration not working	Fixed management of the distance object
Y/N	Flash memory with bad blocks	Added formatting of flash memory to avoid bad blocks

Implementations

Cam	Implementation	Comments
All	Plus mode improvement	Improved plus mode for color cameras.
N5	Support fro N5	Added support for this camera model.
All	Camera interface	Added configurable camera interface in software (camera vertical bar): Standard: simplified interface with a few controls. Expert: complete interface with all the controls.
All	Japanese	Added Japanese language support.
All	Wireless sync	Improved support for Galileo Wireless sync system
All	Vidi Motion	Added support to all the new camera models

Integrated Design Tools

Motion Studio 2.07.01
September 16th, 2008

Release Notes (changes from version 2.07.00)

Bug Fixes

Cam	Issue	Comments
M	Coreco drivers do not support multi cameras	Added support for multi cameras in the same computer with Dalsa-Coreco frame grabbers
M	Incorrect ROI in Plus Mode	Correct selection of position and size
HG	Wrong typing of exposure values	Any value can be typed in the exposure edit box
HG	Memory erase error	When Memory erase is not successful an error message shows up

Implementations

Cam	Implementation	Comments
N	Compression ratio	Added configurable compression ratio to N camera frame size (the frame size can be configured from uncompressed to a size of about 40% of the original size)
HG	Trigger debounce	Added configurable trigger debounce in Motion Studio
N	Frame addresses	Improved the speed of load/save frames addresses for long acquisitions
Y	HDMI output configuration	The Video output mode display has been converted into: PC-only (when HDMI output is disabled), PC+HDMI (when HDMI output is on), HDMI-only (when the display is directed only to the HDMI output)
SDK	XsPreConfigCamera	“Unsigned long” parameters have been changed into “void*”. In 32 bit environment the size does not change (4 bytes). In future 64 bit version, the size will be 8 bytes and will allow using the parameters as addresses.

Integrated Design Tools

Motion Studio 2.07.00
August 10th, 2008

Release Notes (changes from version 2.06.05)

Bug Fixes

Cam	Issue	Comments
HG	Matlab/LabVIEW network adapter configuration	The network adapter IP address was not configured. It was unable to communicate. Fixed.
Y	Y3 Sync out signal when the external sync is Pulse high or low was wrong	Fixed in firmware
All	Recover images on multi-camera system	The recover file name is generated with the serial number of each camera to avoid overwriting of the recover parameters
All	Firewall settings may stop Motion Studio to detect GE cameras	When Motion Studio starts it is added to the firewall safe list
All	Tracking graph shows non computed points	Non computed points are not displayed in graph
All	Binning	Binning is correctly computed in all the image formats (27 and 30 bit included)
Y	HDMI live	New Hardware revision (07 = H) allow live HDMI. If the Video option is set to “Transfer”, the live is not displayed in the computer window.
Y5	Horizontal line in images when the ROI is active	The row has been removed
M3	Problem when more than one acquisition is done with the same settings (Coreco FG)	The settings are initialized before each acquisition

Implementations

Cam	Implementation	Comments
All	LabVIEW/Matlab	Added VI and routine to erase HG memory. Added VI to preview during recording.
Y	Configurable command UDP port	The default value of the command UDP port is 1028/ it may be changed. However I don't recommend to do it, if it's not necessary
All	Look Up Tables	Added new Look Up Tables to convert 10 bit data into 8 bit data. Available in all the camera models that support 10 bit storage.
N	Support for N camera	Added support for N3 camera model
All	MPEG H.264 (AVC)	Added support for MPEG H.264 (Advanced Video Coding) file format. The file extension is MP4
Y	Trigger position in the period	Added a parameter to read the position of the trigger in the Period (Trigger time). The value is used to add precision to the timing of the images
Y	External rate and pulse width	Added parameters to read external signals (Period and Pulse Width). The values are used to: • Warn the user if he configures the sync source to external, but the signal is not present. • Find the correct calibration parameters (background and PSC) when the sync source is external.

Integrated Design Tools

Motion Studio 2.06.04
June 9th, 2008

Release Notes (changes from version 2.06.03)

Bug Fixes

Cam	Issue	Comments
HG	Buffer overflow error when try to open HG cameras	The trace buffer has been increased
Y5	If the camera is started from an external application the image is bad (SDK)	Correct initialization of camera registers at startup
Y5	Plus mode generates bad image	Correct offsets
Y	In Plus mode, the size of memory is not updated	Correct memory size in Plus mode

Implementations

Cam	Implementation	Comments
Y	HDMI playback (transfer)	If the HDMI output “Transfer” option is enabled in the “Video Options”, Y cameras play back images to the HDMI output only. The transfer rate can be increased up to 30 fps.
All	Trace messages	Improved the trace messages
N	Support	Added support for N cameras (preliminary)
All	SDK Examples	Added a Simple and an Advanced examples section

Integrated Design Tools

Motion Studio 2.06.03
May 30th, 2008

Release Notes (changes from version 2.06.01)

Bug Fixes

Cam	Issue	Comments
DAS	Data and Images are not synchronized	Added a variable delay after the acquisition. Added an Option to connect Trigger In to Channel 1 (see implementations)
All	Annotations do not load values that have been saved before	Fixed
X	Error in fast download with Plus	The images are correctly downloaded and converted
Y5	Wrong display of images in Plus mode	The images are now correctly displayed
TH	Camera synchronized with the Timing Hub and Sync Configuration set to Pulse High or Low	The value of the exposure is set correctly and it's synchronized to the value set in the TH panel.

Implementations

Cam	Implementation	Comments
X/Y	Announcements	Added announcements messages for Detach, Disconnection and reconnection: "DETACHED": the camera control has been taken by another computer "DISCONNE": the camera has been disconnected (USB or GE) "RESTORED": the camera connection has been restored.
DAS	"Trigger In" Option	Added a check box to enable the connection of the "Trigger In" signal to the "Channel 1" Input. The sampling of the trigger signal helps synchronizing the images and the acquired data.
M5	Full support	Added full support to M5 camera
M	Support of EPIX FG	Added support to EPIX PIXCI E4 frame grabber

Integrated Design Tools

Motion Studio 2.06.01 (included 2.06.00)
May 13th, 2008

Release Notes (changes from version 2.05.04)

Bug Fixes

Cam	Issue	Comments
X/Y	When the cameras are synchronized the position of the trigger may be different	The cameras are synchronized. If the sync source is internal there can be a difference of 1 frame.
HG	HG camera and DAS non synchronized	Fixed
All	Errors in routines that convert 8,9,10 bit data into 8,9,10 bit data	It is used to save 10 bit data into 9 or 8 bit data, or to convert 9 bit data into 8 bit data.
All	Matlab driver not updated	Drivers and documentation are up to date.
All	LabView VIs not updated	Drivers and documentation are up to date.
All	The ActiveX control could not save AVI sequences and record with pre-trigger frames	Fixed
All	Raw converter does not report error and deletes the raw file	If an image cannot be saved the raw converter displays an error and exits without deleting the raw file.
All	Multi camera Live Record triggering problems	If the number of cameras is larger than two, the LWR mode is automatically set to “Preview camera with focus” to reduce the amount of data transferred through the network during an acquisition.
Y	Addressing problems in BROC and with ROI	The addressing is correct and ROI and BROC issues are fixed

Implementations

Cam	Implementation	Comments
All	New terminology	From version 2.06.00, “**MotionPro X Studio**” has been renamed into “**Motion Studio**”
X/Y	Management of USB disconnection	If the USB cable is disconnected by the camera, the user can connect it back and the software works
Y	27/30-bit color images	Motion Studio supports 48-bit color image formats (TIFF and PNG) to save 27 and 30 bit images grabbed from the Y cameras.
Y	Autonomous camera operations	The user can: 1. Run the acquisition, exit the program, disconnect the camera, and trigger the camera. Restart the program and download the acquired images. 2. Start an acquisition from one computer and trigger from another. 3. Exit the program when the camera is acquiring, enter and trigger the camera
Y	Multi-user management	If multiple instances of the program are active from different computers, the program that attaches the camera keeps the control and temporary freezes other instances. Example: the software runs in the control room and the operator locally connects each camera for focusing. The software in the control room is aware of each change that the operator has done.
All	ISO MME	With the acquisition, a MII file and a MME file are saved. The user can enter the information in a dialog box.
All	Reticle	Added the reticle tool (Motion Central like). The reticle is a pair of crossed lines drawn over the image. It may be used to vertically or horizontally align the camera. The color of the cross may be edited in the general options.
All	New notation for sensor gains	MotionPro X4: -6 dB, -3 dB, 0 dB, +3 dB Other cameras: -3 dB, 0 dB, +3 dB, +6 dB
All	Calibration in current conditions	The user may acquire images for background and pixel sensitivity correction in current conditions. The images/coefficients are stored in a local file and loaded when the program is restarted.
SDK	Added info on calibration files	Added info to check if the “current conditions” calibration file is on the hard disk and to check if the factory calibration file is stored in the camera flash memory.
Y5	New sensor gains	Y5 has only 3 sensor gains (-3 dB, 0 dB, +3 dB)

Integrated Design Tools

MotionPro 2.05.03
February 7th, 2008

Release Notes (changes from version 2.05.00)

Bug Fixes

Cam	Issue	Comments
CR	Activate and deactivate Live output does not work	The live output can be activated and deactivated inside MotionPro Studio
All	Multiple cameras: if one of the camera fails to record, all other cameras continue	If one camera fails recording, the record process of other cameras is aborted.
USB	If one camera disconnects and reconnects on USB it is enumerated twice	Now the camera is enumerated only once. Further investigations to improve disconnection issues are required.
Y	If the Y cameras are left without activity for a few minutes they disconnect	Added a timer to keep the connection active between the computer and Y cameras.
Y	Live time-out and system busy on 100 Mbps Ethernet connection	The communication in 100 Mbps Ethernet environment is improved.
Y	Image quality issues	Improved the image quality of Y3 cameras
M5	Wrong display of double exposure images with Coreco frame grabber	Correct display of double exposure images.

Implementations

Cam	Implementation	Comments
Y	Added white balance correction to HDMI images	The white balance table applied to regular images is applied to HDMI output as well
All	Configurable Trigger Hot Key	The user can issue a software trigger to the cameras by pressing a key on the keyboard. The key is configurable.
All	Cameras Enumeration dialog box	A parameter in the options has been added (Misc Tab). If the option is selected the enumeration dialog box appears, otherwise not.
All	Acquisition names policy	If the user adds acquisitions in the camera memory the names are changed like this: Acq_A, Acq_B, Acq_C. When the acquisitions are stored in the database the folder names are created like this: Acq_A_001, Acq_A_002 …

Integrated Design Tools

MotionPro X 2.05.00
December 15th, 2007

Release Notes (changes from version 2.04.03)

Bug Fixes

Cam	Issue	Comments
Y	ROI parameters	ROI Yo must be a multiple of 16 (Y cameras).
DAS	Sync Issues	The data and the images are synchronized.
X/Y	Some parameters were not saved in the flash memory	Fixed.
All	When the acquisitions are saved all the memory segments are displayed	Display only the acquisitions that have been done and do not show empty acquisitions.
All	Open general options when a camera is open	Some of the parameters cannot be changed when cameras are open, then display a warning message
X	Read from flash memory error	Added redundant read of data blocks
All	Log was enabled during camera open	Log is enabled before camera open, and the enumeration process can be traced
M	Live While Preview is not working with some models	LWR is enabled and working with M cameras
M	If the camera is unable to allocate memory for the acquisition no error message is displayed	An error message is displayed
All	If the tracking is enabled when a window is already open, the program crashes	Tracking can be enabled only if the cameras are closed
X/Y	If the number of BROC segments is more than the maximum (256) the program crashes	The max limit can be overridden only if the BROC length is 1. In all the other cases the max limit is 256

Implementations

Cam	Implementation	Comments
HG	Added support for MotionXtra legacy cameras	HG-2000, CR-2000 and TX-2000
M	Added support for MotionScope M5	Added Sapera files and NI files
All	Background, PSC and post-filtering	The parameters have been moved from the general options to the calibration dialog
All	Video Parameters (PAL, NTSC, HDMI)	The parameters have been moved from the general options to a private camera dialog
DAS	Auto scroll of data	During the images playback, the data window scrolls automatically
All	Network performance parameter	The parameter can be edited in MotionPro Studio and in GE Configurator as well
All	Save acquisitions	Display the acquisition name, the images indexes and the acquisition index (acq 1 of N)
All	Pan Tool	The pan tool state (show/hide) is saved and restored when the program is restarted

Integrated Design Tools

MotionPro X 2.04.03
October 17th, 2007

Release Notes (changes from version 2.04.02)

Bug Fixes

Cam	Issue	Comments
All	If two or more cameras have the same IP address, the cameras cannot work together.	A warning message is displayed before opening the cameras.
All	The frame zero position can be changed in a sequence without any warning message.	A warning message has been added each time the user clicks the “Zero” button.
All	When the user clicks the F1 key in the keyboard the English manual opens, regardless of the selected language.	If the selected language is German, the German manual opens, otherwise the English manual opens.
All	FBA file format. The file header has a wrong size.	The error has been corrected. Now the file header has a correct size.
All	RAW Converter: the logo is not printed.	The logo image configured in the time stamp options is printed in the converted images.
M	The control of M camera ROI resolution was wrong.	M camera horizontal resolution has a step of 4 pixels; the vertical resolution has a step of 8 pixels. If the user types wrong values the software corrects them.
HG	The camera memory can be erased without any warning message.	A warning message has been added each time the user clicks the erase button.

Implementations

Cam	Implementation	Comments
Y	SDK: added the preview mode parameter.	The Y camera can preview images at full resolution (default), or at low resolution (1/4th of the full resolution).

Y	SDK: Sync out configuration values have been updated.	The values “Inverted Default” and “Inverted Configurable Width” have been added.
Y	Preview modes.	The preview mode configuration has been a added to the Options dialog.
Y	Sync Out Configuration.	The new values have been added to the “Advanced Trigger / Sync Configuration” dialog box.
All	Added a new option to Motion Trigger.	The new option activates the trigger when the average changes by a certain value (increases or decreases). It’s a combination of the first two options.
All	Added the “Zero” button to the camera view.	When the user clicks the “Zero” button, the frame 0 position (trigger position) is updated. A warning message is displayed.
All	Change in the “Options” dialog.	The “Enable remote server” and “Check for calibration file at start-up” options have been moved from the “Cameras” to the “Miscellaneous” group.
All	The “status” window has been moved from the bottom to the top of the vertical bar.	If more than two cameras are open the “status” window is visible anyway.

Integrated Design Tools

MotionPro X 2.04.02
September 18th, 2007

Release Notes (changes from version 2.04.01)

Bug Fixes

Cam	Issue	Fixed	Comments
X	IRIG error on cameras	Yes	Correct an error in the IRIG data at high speed. The offset is fixed in the IRIG calibration.
M	Fast download error in circular mode	Yes	The software can download and convert the images from M cameras
All	Error on annotations when a sequence is open, closed and open again	Yes	The annotation files is now correctly read and written. It can be open and closed any time.
All	When the software is installed on a new computer the default value of Gamma is 0.00 instead of 1.00.	Yes	The software reads the correct default value of Gamma (1.00).

Implementations

Cam	Implementation	Comments
Y	Added HDMI mode in the Options	The parameter sets the HDMI output mode to OFF or ON. It's valid for Y cameras only.
Y	Support for 8, 9 and 10 bits	The support for 9 and 10 bits is valid for Y cameras only.
All	Added a parameter to the acq settings: "Overwrite existing folders"	If this option is unchecked, any time an acquisition is done, the program checks if the folder is already present and, if yes, it generates a new folder names with decimal digits. Example: if the folder name is A, the program checks if A is present. If yes, it generates A_000, then A_001 and so on. If the parameter is checked we have two options: 1. The "Download images after acquisition and restart" option is unchecked. In this case the program saves the images in the same folder all the time. Example: the folder name is A. then the program creates the folder A the first time and saves the images. If subsequent acquisitions are done, the program saves the images in the same A folder and overwrites them. 2. The "Download images after acquisition and restart" option is checked. In this case the program creates folder names from the acquisition name with 7 digits. Example: the acquisition name is A, then the program creates A_0000000, then A_0000001, then A_0000002 and so on.

All	Camera memory is displayed in GB with 2 digits	The display is in the “Advanced Record Configuration” dialog box
DA	Display of the value of more than one channel	If more than one channel is configured in the Data Acquisition, the Data pane shows all the values corresponding to the cursor position.

Integrated Design Tools

MotionPro X 2.04.01
August 17th, 2007

Version 2.04.01 – Release Notes (changes from version 2.04.00)

Bug Fixes

Cam	Issue	Fixed	Comments
X	IRIG error on cameras	Yes	Correct a 500 ms delay on IRIG data. The offset is fixed in the IRIG calibration
M	In previous version M camera drivers were not installed	Yes	The setup program installs the M camera drivers for Coreco and National Instruments Frame Grabber
All	Wrong value of default gamma value	Yes	A new item has been added to the database. The new default value is correct
SDK	Wrong value of XS_EF_ALL mask	Yes	The new value of the XS_EF_MASK is correct (0x0000003F)

Implementations

Cam	Implementation	Comments
All	Added the support for FBA files	The Falcon eXtra raw file format is fully supported on MotionPro X Studio. Sequences of FBA files can be saved and open.
All	Time stamp font size	Font size is configurable (Font Height)
All	Bitmap on time stamp	A bitmap can be printed on the image files and displayed on the live image

Integrated Design Tools

MotionPro X 2.04.00
June 4th, 2007

Version 2.04.00 – Release Notes (changes from version 2.03.00)

Bug Fixes

Cam	Issue	Fixed	Comments
All	F-stop exposure buttons are active when the camera is recording	Yes	The buttons have been disabled during recording
X5	Image quality	Yes	Image quality has been improved
X	If the program cannot read from the flash memory, it sets the default values.	Yes	If the program cannot read from the flash memory, it reads the configuration from the local database
X	Change of mode from normal to circular sometimes does not work	Yes	The mode change is now correct

Implementations

Cam	Implementation	Comments
M	**M cameras**	**Added the full support to M-Series cameras (SDK + software + drivers)**
All	Unified gamma	The gamma correction parameter has been unified. A slider has been added to the camera bar. The gamma parameter is enabled on monochrome cameras. Color cameras have it on the Color tab. The range is 0.0 to 4.0. The default is 1.0.
X	Windows x64 support	The USB 2.0 64-bit driver for X cameras has been implemented. The driver is automatically installed by the setup.
X	IRIG Calibration	Current IRIG time precision is 1 s. The IRIG calibration procedure checks the images and locates a 1 second transition in the IRIG data. The transition image is used to increase the time precision according to the acquisition rate.
X	Subnet mask	Added the configuration of GE cameras subnet mask.
X5	Optimal conditions	Acquisition optimal conditions are signaled by the exposure color. If the exposure to rate ratio is not optimal, the exposure is shown in red, otherwise in black.
HG	HG SDK support	Added the support of HG cameras in the SDK. Some specific routines has been added for HG cameras.
DA	Data Acquisition Output	The Data Acquisition module may playback waveform files. Waveform files are generated by the “Waveform Editor” introduced in the Version 1.02.00 of the DA software

Integrated Design Tools

MotionPro X 2.03.00
April 4th, 2007

Version 2.03.00 – Release Notes (changes from version 2.02.01)

Bug Fixes

Cam	Issue	Fixed	Comments
All	Windows Vista support	Yes	The setup program has been changed to allow the install on Windows Vista OS
All	Raw Conversion of images with ROI and post-filter	Yes	The combination of ROI and post-filter caused a crash. Fixed.
All	Camera status in DB Viewer	Yes	The camera status is correctly refreshed (On/Off)
All	Crash if the program tries to allocate more than 1 GB of memory when a sequence is open	Yes	The program correctly allocates the memory.
X	Images have flashing intensity when a sequence is recorded with external sync and maximum exposure (Master/Slave also)	Yes	The camera exposure was not set correctly. Now the flashing issue is not present anymore
DA	Simultaneous start of Analog output and analog input acquisition	Yes	Both the subsystems are simultaneously started when at least one channel (of both) is configured.
DA	Sampling rate read from a data file is wrong if the channels are 2 or more	Yes	The bug was only with Tecplot, LabVIEW and Excel formats.
TH	Minimum period in Timing Hub window is 100 us	Yes	The max frequency is 100 KHz, so the minimum period is 10 us

Implementations

Cam	Implementation	Comments
All	Added a new “Open Camera Wizard”	The wizard has a single window with the list of active cameras and the buttons for the configurations and refresh. The change is for a correct display of the wizard itself in Windows Vista
All	Image Tile Utility	Added the utility that tiles two images sequences and converts into a single file. This is a request from a customer.
All	Save images in a new acquisition folder	Added a new option to create a new acquisition folder when a sequence of images is opened and saved.
All	Multilanguage option	The German version of the program has been added. The user may select the language (English or German).
All	Data Acquisition FFT	Added a dialog box that shows the channels FFT and Power Spectrum
All	Data Acquisition filters	Filters and mathematical operations can be applied to

		the current signal view. An Undo/Redo list has been added to the data view pane. A reset button erases all the operations.
All	Sharpening tool	Added a “Sharpen Image” menu item for image sharpening. A slider controls the sharpening factor
All	Database Viewer	Folders containing RAW images (not yet converted) are displayed in red. The user may right click and start the conversion process from the database viewer.
All	Tracking calibration folders	The calibration folders are stored in a single directory: the _Calibrations directory at the same level as the acquisitions.
All	Open / Import tracking calibration	Improved the procedure: the user can import from the database and from an external folder.
X	Check calibration file at start up	When a camera is open the program checks if the calibration file is available. If the option is unchecked, the program does not display a warning if the calibration file is not installed.
X	Raw Converter	When the raw converter is run as standalone program (from the Programs menu), a progress dialog box is displayed.
Manual	Error codes	Added a list of MotionPro X Error codes with a short description.
TH	Delay precision in Timing Hub	Added a digit to the delay option (hundreds of nanoseconds)

Integrated Design Tools

MotionPro X 2.01.02
January 29th, 2007

Version 2.02.01 – Release Notes (changes from version 2.02.00)

Bug Fixes

Cam	Issue	Fixed	Comments
All	Save and overwrite an AVI file: part of the file is missing	Yes	The sequence is saved to a temporary file, then the original file is deleted and the temporary file renamed
X	Live While Preview at max speed freezes the program	Yes	At maximum speed the LWR is disabled
All	Camera + Data Acquisition: the time is wrongly displayed if the number of pre-trigger frames is more than ~2000	Yes	Now the time is correctly displayed
All	Normal mode: the Trigger In configuration is enabled	Yes	Ehen the mode is normal the Trigger In configuration is disabled.
All	BROC mode: the playback time is wrongly displayed	Yes	During playback the time is correct
All	Data Acquisition: the resulting camera rate can be larger than the maximum	Yes	A warning message is shown and the rate is displayed in red

Implementations

Cam	Implementation	Comments
All	Output rate	When a sequence is saved the output rate is set to 5 Hz
All	Regional options	The program automatically detects the regional options and displays date, time and numbers digit with the correct notation
All	Data Acquisition binary file format	The binary format has been removed because cannot be read by any external program (useless).
All	Data Acquisition signals average and standard deviation	Average and Standard deviation are displayed in the Data window
All	Data Acquisition signals average	Each signal can be displayed without its average
All	New GE drivers	New modules for Giga-Ethernet link

Integrated Design Tools

MotionPro X 2.01.01
November 10th, 2006

Version 2.01.01 – Release Notes (changes from version 2.01.00)

Bug Fixes

Cam	Issue	Fixed	Comments
All	Data Acquisition: if the user clicks the Live button after an acquisition, any previous acquired data is lost	Yes	The data is saved to a backup buffer and restored when the user clicks one of the playback buttons.
X	Plus mode: the memory configuration bar does not show correctly the acquisition size if the memory size is more than 4 GB	Yes	The correct acquisition size is displayed.
	Global configuration: the playback is not synchronized	Yes	The playback is synchronized.
		Yes	

Implementations

Cam	Implementation	Comments
All	The default acquisition size is set to the full memory	-
X	“Find camera”	If a camera is not enumerated and the user knows its MAC address, the camera can be reached and configured. The user enters the camera MAC address and the desired IP address and the driver configures the camera IP address.
All	“Zero” button	The position of the frame 0 (trigger position in the sequence) can be set.
X	BROC cquisition	During a BROC acquisition, the status message shows the segment index and the total number of segments.
All	Images slider	The marker of the “zero” frame has been moved to the low part of the slider. If the acquisition is BROC, the low part of the slider is divided by tick marks.

MotionPro X 2.00.03
September 18th, 2006

Version 2.00.04 – Release Notes (changes from version 2.00.03)

Cam	Issue/Implementation	Fixed	Comments
X	Load/save camera cfg for color camera did not save color parameters	Yes	Color parameters are saved and loaded.
X	If Record mode is circular and it's changed during preview, the camera does not get the change	Yes	The camera is configured with the correct record mode.
X	GE cameras do not have the pixel gain capability, the "Upper" word generates confusion	Yes	The "Upper" word has been removed from the "Pixel Gain" control in the camera toolbar
X	Noise correction in current conditions and background removal flags	Yes	Correct use of the activation flag in current conditions
All	SDK Implementation	Yes	Added a routine to poll the camera status during Record. Useful if the software is written in languages that do not support callbacks (i.e. VB)
X	Camera calibration file should be recognized immediately after loaded into the computer. Application must be closed and re-opened in order for calibration file to be recognized.	Yes	All the components of the calibration file (background images and ADC offsets) are correctly loaded after the download from the CD or from the camera flash memory.
X4	Noise during LWR at max speed.	Yes	The preview during record at max speed is correct
X4	Some cameras present a shift in the GE images. If the camera is color the shift generates a wrong color reconstruction	Yes	A parameter has been added to the EEPROM user data
HG	The software does not work with LE/TH models	Yes	Tests performed with LE Camera and with TH traces.
HG	ROC, BROC and Ready modes are not implemented	Yes	The modes have been implemented
HG	ROI dialog allows the user to set ROIs that are not centered in the sensor	Yes	The ROI is centered, cannot be moved. ROI X and Y controls are grayed out.
HG	Timestamp is generated locally	Yes	Time stamp is read from camera border data

GUI resources	Optimized the GUI resources for opening a large amount of cameras.
Warnings	Added warning for wrong read of EEPROM parameters.
Low Light	Fixed and improved low light mode.
Live While Recording option	If LWR is set to “Do not preview”, the image is not updated when the camera is open and when the recording is done.
White balance	Enabled white balance procedure and image parameters edit on playback images.
ISO MME	Improved the MME and MII generation. In multiple camera environments a single MME file is generated.
AVI files folder	Added option to set a folder where the AVI files are stored. It may be different from the regular images folder.
Option	Added option to change the position of the first frame of a sequence.
Bug	Disable flip and rotation before opening the ROI dialog of HD cameras (Y7, N7, Y8, and N8).
LUT	Added user LUT with six points. Added a new fixed LUT (s-shape LUT E).
Auto-exposure	Added edit of X, Y, W and H values in Auto-exposure dialog.
Raw Converter	Improved the interface of raw converter. Added a conversion manager window.
Options	Removed the “Configure the cameras with same parameters” and the “Enable double exposure” options.
Motion Trigger	Changed Motion Trigger interface. Added a Motion Trigger dialog similar to AE. Added a test procedure to test Motion Trigger. The percentage has been converted into sensitivity (1 to 20).