LuCam Software Release Notes

1. Update from release V6.8.3 to v6.8.4

Camera Device Drivers

- Device drivers included in this release for new camera models – Lt-1610, Lt-1630, Lt-1900, Lt-1980, Lt-3200, Lt-3840, Lt-5500

API Updates in this release

- Fix for API crash when disconnecting camera while streaming.

2. Update from release V6.8.2to v6.8.3

Camera Device Drivers

- Device drivers included in this release for new camera models based on the Pregius sensors – Lt-1950, Lt-2020, Lt-2420, Lt-4030, and Lt-4020.

API Updates in this release

- The format of headers has changed. Instead of a distinct lucamapi.h for each supported platform (Windows, Linux, MAC), there's now a single set of headers (lucamapi.h, lucommon.h, ludefines.h, lustructures.h) identical for all operating systems.
- Fix for LucamQueryDisplayRate being incorrect if the preview window is moved between monitors.
- Fixed an issue where the Pregius sensors might fail to stream if being reset after being flipped.
- Fixed a possible divide by zero exception when LucamSetFormat is called with the frameRate parameter set to a very low value but not 0.
- Fixed an issue with the lucamapi.dll crashing on Windows XP, if loaded dynamically (for example from a managed app).
- Included additional Property flags for Image Flip/Mirror, available for certain camera models that support onboard orientation settings of the raw image data. LUCAM_PROP_CAMERA_FLIPPING
- Added two new Color Correction Matrices (CCM) targeted for INFINITY camera use. The new CCMs apply to a lamp used with a Daylight (blue) filter, or for an LED lamp source, when imaging microscope tissue sample slides that are stained with H&E.

3. Update from release V6.8.1to v6.8.2

Camera Device Drivers

- Fixed timeout issue when taking a snapshot while streaming video with the Lu171.
- Fixed I2C issue on interface board for Lu171.

Installation notes

- The re-installation of the same software package versions will not overwrite all the files.
- If any Lumenera SDK 6.0.0 or higher has been installed on the host, a prompt to uninstall will pop up at installation time.
- The drivers are now located in a “Drivers” subdirectory.
- The SDK source code samples are now installed in “C:\ProgramData\Lumenera Corporation\LuCam Capture\6.8.2\”.
- The shortcut to the sample binaries has been fixed.
- A shortcut to the Lumenera web site has been added (www.lumenera.com).
- Fixed the LUMENERA_SDK environment variable initialization. This variable will point to “C:\Program Files\Lumenera Corporation\Lumenera Camera SDK” for a 32 bit installation. This variable will point to “C:\Program Files (x86)\Lumenera Corporation\Lumenera Camera SDK” for a 64 bit installation.

4. Update from release V6.7.0 to v6.8.1

Camera Device Drivers

- Addsupport for the Lt345, Lt545, Lt945 andLt1245
- Add U3V driver for LtUpdater to be released soon.

LuCam Capture

- The LuCam CaptureUser’s Manualhas been updated for this release.
- Changed the behaviorof thesnapshot exposure valuefield such that the Enter key no longer needs to be pressed.

- Altered the video exposure and gain adjustments so that they are accessible via a textbox and the sliders.
- Fixedcrashes when exiting Lucam Capture when Image Stats Windows is active.
- AddedHigh Dynamic Range (HDR)controls
- Added support for the Lt345, Lt545, Lt945 and Lt1245.
- Added support forP-IRIS lens control.
- Improved the exposure control, to show 2 decimals.

API Changes2.1.1.75 to 2.1.1.106

- Integrated theSDK with the Lucam Software packages.
- Added support for pin re-assignment for the trigger and the strobe signals to non-isolated IO pins for Lt365, Lt665, Lt965, and Lt1265.
- Added LUCAM_AUTO_GAIN_MINIMUM property.
- Added LUCAM_PROP_IRIS_STEPS property.
- Added support for re-assignment of the trigger signals to GPIO1 for the Lt16059. The signal cannot be routed to GPIO2.
- Added HDR functions. (pre-released)
- Added Trigger Sequencing functions
- Added the LucamGetSubSamplingBinningDescription function.
- AddedLUCAM_PROP_GAIN_HDR property.
- Fixedpossible infinite loop with video stream.
- Fixedrace condition when stopping the stream.
- Fixedissue with flag for LUCAM_PROP_STILL_TAP_CONFIGURATION
- Improvements made to color reproduction.
- Improved LUCAM_PROP_TAP_CONFIGURATION (read only flag)
- Improved Canon Lens focus control.
- Improved LucamOneShotAutoExposure, LucamOneShotAutoGain, LucamOnshotAutoIris
- Improved timestamp and metadata.
- Improved the LUCAM_PROP_IRIS property.
- Updated the Software Developer's Kit (SDK) manual.

Special Notes

- The SDK is installed on a 64 bit Windows platform, by default to -

  C:\Program Files (x86)\Lumenera Corporation\Lumenera Capture Software\ SDK

  and on a 32 bit Windows platform, it's installed to –

5. Update from release v6.6.0 to V6.7.0

Camera Device Drivers

- Includes support for Lt366RC-GT3

LuCam CAPTURE

- Updated to recognize the Lt366RC-GT3 camera model

6. Update from release v6.5.0 to V6.6.0

Camera Device Drivers

- Support for Lt16059H completed.
- Add support for Lt29029H.

USB 3.0 driver changes

- Improvement for video stream.
- Improvement forsnapshot capture.
- Improvementwhen used in multiple threads.
- Improvement when inbinning mode.
- Improvement of AVI capture operation on Windows 10.
- Improvement on reporting of AVI frame rates.
- Fix for a possible deadlocksituation.

API 2.1.1.49 to 2.1.1.75

- Added property to control maximum frame rate.
- Added property to select algorithmfor white balance.
- Added property to select algorithm for auto-exposure.
- Fix enumeration range of PROP_TAP_CONFIGURATION
- Fix issue when stream is displayedon a second monitor.

- Fix location of the timestamp metadata.
- Improvement on the tap mismatchcorrection.
- Integrationof new pixel shifting library.
- Improvement on timestamp correction on Lt16059Hand Lt29059H.
- Improvement on video stream controls.
- Improvement on timestamp functions.
- Improvements on tap correction speed performance.
- Improvement on Canon EF lens controls.
- Improvement on auto focus algorithm (Canon EF lens controls).
- Improvement on auto iris algorithm (Canon EF lens controls).
- Improvement on application of the digital property to the look up table.
- Improvement on multiple thread support.
- Improvement on reporting of video frame rate in AVI.

Special note

- With Lt365, Lt665 and INFINITY3-3UR the minimum gain is1.0,when using auto gain settings. If the gain value is below 1.0 when activating the auto flags, the gain will be set to 1.0
- The use of USB 3.0 Intel chipsets (Ivy Bridge or better) on the host computer is highly recommended. Alternately, we would suggest the use of Renesas D720202 or Asmedia ASM1042 controller. With the Renesas and Asmedia, there is a very small chance that some users may experience camera disconnections. In all cases, the latest device driver updates to the USB 3.0 chipsets should be applied.
- We do recommend the Newnex US2-2004 3M A to B or US2-AMCBI1-3M A to locking micro-B USB 3.0 cable. In general, Lumenera is suggesting using a 3M cable with 22AWG for power wires and 28AWG for data signals.
- If camera requires the use of a cable with the micro-B connector, then it is highly recommended to use a cable with a locking Micro-B connection.

Known issues

- With Lt365/665/965/1265 it might be possible that first frame will include a major tap imbalance and the image will appear corrupted.
- The Lc camera family performance on windows 8.1 and 10 is not optimal.

7. Update from release v6.4.0 to v6.5.0

Camera Drivers

- Add support for Lt1265 (future camera model –not yet released).
- Add support for Lt1609 (model under development–soon to be released).
- Fix auto exposure maximum, range and setting property for Lt camera models.
- Fix frame rate clock settings variation depending on whether external power is appliedbefore or after USB3.0 connection.
- Fix issue with minimum value reported for the strobe delay property.
- Improvement on exposure granularity for USB 3.0 camera models.
- Improvement with snapshot operation on Lc camera models.

API 2.1.141 to 2.1.1.49

- Fix issues with frame counter in Lt camera models.
- Adding timestamp capability to GIGE camera products.
- Add high power mode for Lt camera models with the hardware revision that supports it.
- Improvements on support of TAP configuration.
- Improvements with camera error reporting.
- Improvements for cameras that have dual TAP capability.

Special note

- With Lt365, Lt665 and INFINITY3-3UR the gain cannot be set lower than 1.0 when using auto gain settings. If the gain value is below 1.0 when activating the auto flags, the gain will be set to 1.0
- The use of USB 3.0 Intel chipsets (Ivy Bridge or better) on the host computer is highly recommended. Otherwise we would suggest the usage of Renesas D720202 or Asmedia ASM1042 controller. With the Renesas and Asmedia, there is a very small chance that some users may experience camera disconnections. In all cases, the latest device driver updates to the USB 3.0 chipsets should be applied.
- We do recommend the Newnex US2-2004 3M A to B orUS2-AMCBI1-3M A to locking micro-B USB 3.0 cable. In general, Lumenera is suggesting using a 3M cable with 22AWG for power wires and 28AWG for data signals.
- If camera requires the usage of a cable with the micro-B connector, then it is highly recommended to use a cable with a locking Micro-B connection.

Known open issues

- For Lt365, Lt665, Lt965the first few frames may be corrupted upon starting the stream. Actual target release with resolution is 7.0.0
- Samples Application binaries still require Microsoft Visual Studio 2008 distribution files.
- For Lt365, Lt665, Lt965camera models, the output tap lines are visible for a short period when switching frame rates.

LuCam CAPTURE software

- Added support for Lt1265, Lt16059H, Lt29059H.
- Fixed issue with light source selection.
- Added support for LED in light source selection.
- Visual Studio 2010 distributable files required.

LtUpdater 1.0.0.2278(firmware updater for USB 3.0 cameras)

- All USB 3.0 firmware updater tools now share the same graphical user interface.
- **Note:** For Lt425 and Lt225 the revision number shown beside the camera model is the sensor revision and not the camera hardware revision.