

Release Notes for IDS Software Suite 4.91

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Introduction

These release notes describe the changes of the IDS Software Suite 4.91. This version introduces new camera models and software functions.

IDS Software Suite 4.91.1

New products

New camera models

UI-3040SE, UI-3041SE & UI-3042SE

- Global shutter CMOS sensor Sony IMX273
- IDS line scan
- Different triggers e.g. overlap trigger to control the exposure and triggering time

- Twist-proof USB Type-C connector
- USB Power Delivery for peripheral power supply at the I/O port
- Multi AOI (up to 64 AOIs possible)
- Long exposure of up to 30 seconds
- Binning (only in the monochrome version)
- Subsampling (horizontal and vertical)
- Available as color or monochrome version

UI-5040SE, UI-5041SE & UI-5042SE

- Global shutter CMOS sensor Sony IMX273
- 1448 x 1086 px (1.6 MP) with 3.45 µm pixel size
- IDS line scan
- Multi AOI (up to 64 AOIs possible)
- Long exposure of up to 30 seconds
- Binning (only in the monochrome version)
- Subsampling (horizontal and vertical)
- Available as color or monochrome version

New and changed features

Locking and unlocking image memory



To improve the behavior of the image memory during lock/unlock, the lock mechanism for image memory has been changed from “binary” to “multiple readers/single-writer lock”. **From version 4.91 on, the number of “Unlock” calls must match the number of “Lock” calls to free the image memory.** This affects the functions `is_LockSeqBuf()`, `is_UnlockSeqBuf()`, `is_ClearSequence()`, `is_FreeImageMem()`, and `is_SetImageMem()`. If the image memory is not completely unlocked and hence freed again, no image memory is available for the acquisition and the image acquisition stops.

General improvements

- Improved thread safety for the functions `is_InitCamera()` and `is_ExitCamera()`, so uEye cameras can be initialized in parallel.
- The behavior of USB uEye cameras has been improved so that a reconnect no longer requires a message loop.

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IDS Software Suite 4.91

New products

New camera models with active focus: uEye LE USB 3.1 Gen 1 AF

The uEye LE USB 3.1 Gen 1 board level camera with active focus has an additional board for controlling liquid lenses. This allows the focus to be set directly via the user graphical user interface or the programming interface for the camera. The camera is ideally suited for capturing images with variable object distances and changing light conditions.

Thanks to its compact dimensions and the twist-proof USB Type-C connector, it can be easily integrated into any image processing system. The camera also allows USB Power Delivery.



UI-3591LE Rev. 2 AF & UI-3594LE Rev. 2 AF

- Rolling shutter for extremely noise-free and high-contrast images
- CMOS sensor ON Semiconductor AR1820HS
- Board for controlling liquid lenses with 4-pin FPC connector
- Very light-sensitive thanks to BSI pixel technology (“Back Side Illuminated”)
- Extremely high resolution of 18.10 MP (4912 x 3684 px)
- 10-pin Molex connector for GPIO, trigger and flash
- Twist-proof USB Type-C connector
- USB Power Delivery for peripheral power supply at the I/O port
- Supports binning, subsampling, and long exposure
- Global start function
- Available as color version

UI-3881LE AF & UI-3884LE AF

- 1/1.8” rolling shutter sensor with 2.4 μm pixel size
- CMOS sensor Sony STARVIS IMX178
- Board for controlling liquid lenses with 4-pin FPC connector
- BSI sensor with sensational light sensitivity and low noise
- 10-pin Molex connector for GPIO, trigger and flash
- Twist-proof USB Type-C connector
- USB Power Delivery for peripheral power supply at the I/O port
- Long exposure
- Global start function
- Available as color or monochrome version

New camera models

UI-1220LE Rev. 2, UI-121LE Rev. 2 & UI-1222LE Rev. 2

- CMOS sensor ON Semiconductor MT9V032
- 1/3" format with a resolution of 0.36 MP (752 x 480 px)
- 5 second long exposure in trigger and freerun mode
- Trigger on falling and rising edge possible
- High sensitivity in near-infrared range
- HDR mode with knee points
- Wide screen format possible
- Unlimited operation with USB 3.0 xHCI host controller
- Available as color or monochrome version

UI-1540LE Rev. 2, UI-1541LE Rev. 2 & UI-1542LE Rev. 2

- 1.3 MP CMOS sensor ON Semiconductor MT9M001
- Resolution 1280 x 1024 px
- Large pixels (5.2 μm) with a very good signal-to-noise ratio
- Horizontal and vertical subsampling
- Trigger on falling and rising edge possible
- Unlimited operation with USB 3.0 xHCI host controller
- Available as monochrome version

UI-3270SE, UI-3271SE, UI-3272SE & UI-3274SE

- Global shutter CMOS sensor Sony IMX265
- 1/1,8" area sensor with 3.45 μm pixel size
- Aspect ratio 4:3 (2048 x 1536 px)
- Full resolution with up to 57 fps
- Long exposure of up to 30 seconds
- 12 bit per pixel
- Available as color or monochrome version

UI-3590LE Rev. 2, UI-3591LE Rev. 2, UI-3592LE Rev. 2 & UI-3594LE Rev. 2

- Rolling shutter for extremely noise-free and high-contrast images
- CMOS-Sensor ON Semiconductor AR1820HS
- Very light-sensitive thanks to BSI pixel technology ("Back Side Illuminated")
- Extremely high resolution of 18.10 MP (4912 x 3684 Pixel)
- 10-pin Molex connector for GPIO, trigger and flash
- Twist-proof USB Type-C connector
- USB Power Delivery for peripheral power supply at the I/O port
- Supports binning, subsampling, and long exposure
- Global start function
- Available as color version

UI-5040FA

- 1448 x 1086 px (1.6 MP) with 3,45 μm pixel size
- CMOS sensor IMX273 from Sony
- Long exposure of up to 30 seconds
- Binning (only in the monochrome version) and subsampling (horizontal and vertical)
- Supports overlap trigger mode for high frame rates in trigger mode
- Multi AOI
- Available as color or monochrome version

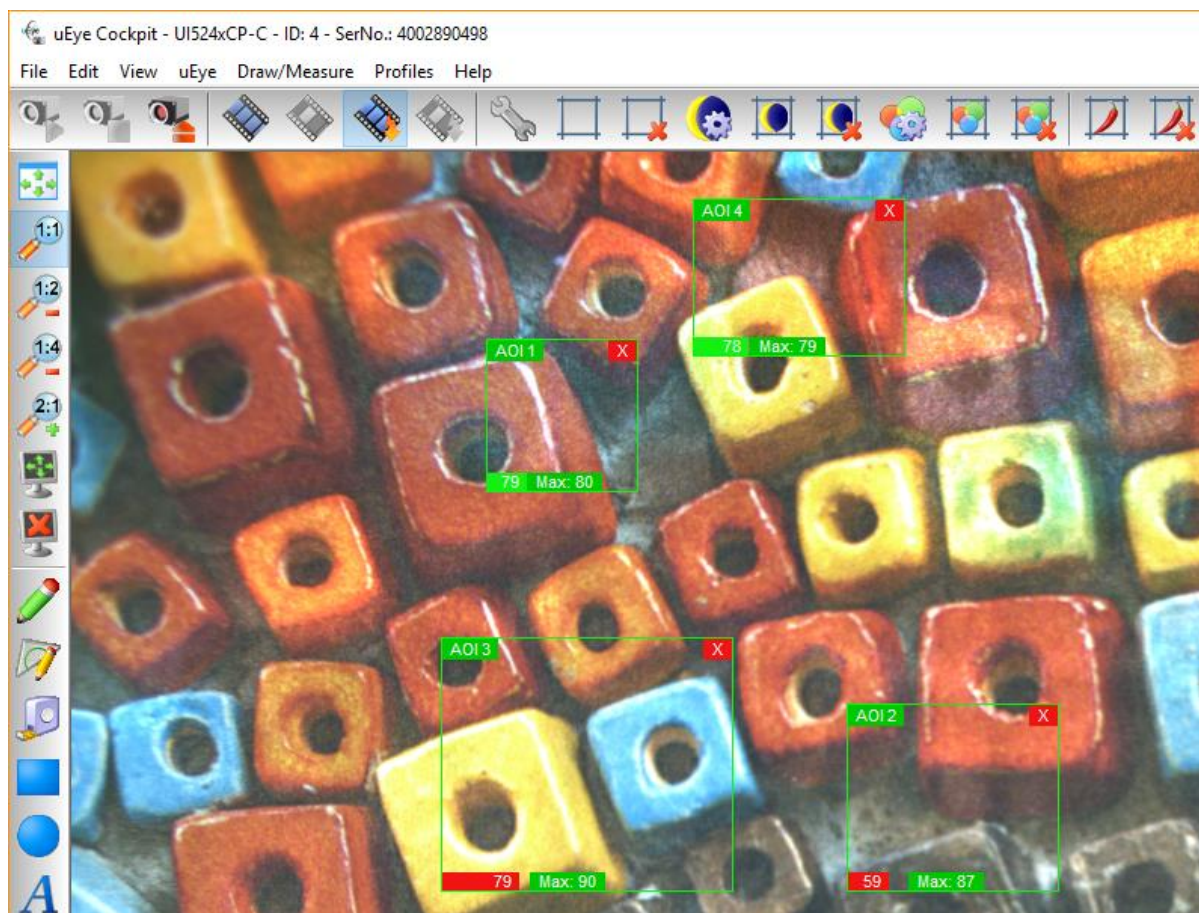
New and changed features

Setting multiple sharpness measurement regions

In the uEye Cockpit, you could previously only set one sharpness measurement region (AOI) in the image to measure the sharpness of the image.

Starting with version 4.91, you can set up to 5 independent sharpness measurement AOIs in the uEye Cockpit. The current and the maximum sharpness value of the AOI are displayed in the left bottom of the sharpness measurement AOI. A red value indicates that the measured sharpness is insufficient, while green indicates good sharpness. In addition, each sharpness measurement AOI has a red "X" at the top right to remove them individually.

For the measurement of the image sharpness, the edges in the image are evaluated. The sharpness is given as a relative value because it depends on the edges in the current image. For this reason, an image with few edges can never achieve the same sharpness value as an image with many edges. The higher the value, the better the sharpness. The value can be used in comparative measurements to detect changes in the image acquisition of the same object, e.g. caused by readjusted lenses.



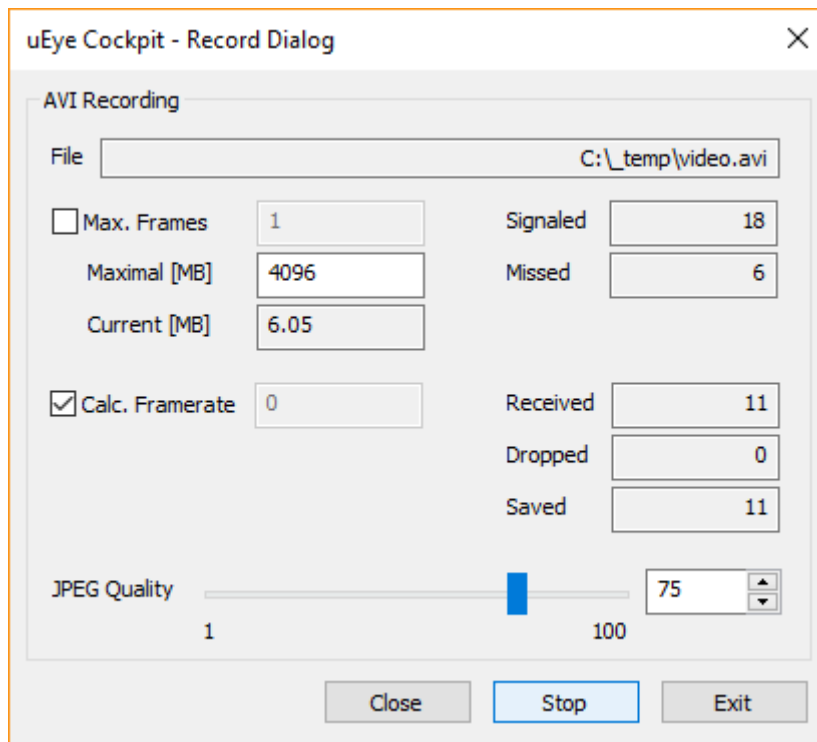
Querying the temperature status for GigE uEye cameras

You can query the camera's temperature status for the camera families GigE uEye CP Rev. 2, GigE uEye FA and GigE uEye SE Rev.4 like on the USB 3 uEye CP Rev. 2. Use the `is_DeviceFeature()` API function to query the last temperature status signaled by the camera.

Enhanced display of captured frames for AVI files

A recording dialog can be opened in the uEye Cockpit to save images captured with the camera as a sequence in an AVI file (.avi). This AVI functionality is not suitable for professional use and is intended for test purposes only. For sequences with high frame rates, for example, not all camera images may be recorded in the AVI. To show this limitation better, two additional elements have been added to the dialog:

- “Signaled”: Indicates the number of images signaled by the API.
- “Missed”: Indicates the number of images missed by uEye Cockpit.



General improvements

- From version 4.91 on, the following models support the global start function (see `is_SetGlobalStart()` API function):
 - UI-3590CP Rev. 2
 - UI-3590LE Rev. 2, UI-3591LE Rev. 2, UI-3592LE Rev. 2, UI-3594LE Rev. 2 and UI-3591LE AF, UI-3594LE AF
 - UI-3860CP Rev. 2
 - UI-3860LE, UI-3861LE, UI-3862LE, UI-3864LE
 - UI-3880CP Rev. 2
 - UI-3880LE, UI-3881LE, UI-3882LE, UI-3884LE and UI-3881LE AF, UI-3884LE AF
 - UI-5860CP Rev. 2
 - UI-586FA
 - UI-5860SE Rev. 4, UI-5861SE Rev. 4, UI-5862SE Rev. 4
 - UI-5880CP Rev. 2
 - UI-588FA
 - UI-5880SE Rev. 4, UI-5881SE Rev. 4, UI-5882SE Rev. 4
- Under Linux the IDS Camera Manager and the uEye Demo have been updated to version Qt5.

- The lock mechanism for image memory has been changed from “binary” to “multiple readers/single-writer lock”. This affects the functions `is_LockSeqBuf()`, `is_UnlockSeqBuf()`, `is_ClearSequence()`, `is_FreeImageMem()`, and `is_SetImageMem()`.
- General performance improvements for UI-5260CP, UI-5260FA, UI-5260SE, UI-5261SE, and UI-5262SE
- Changes to the system requirements for Windows 7: From version 4.91 on, the Microsoft hotfix KB3033929 must be installed for installing the IDS Software Suite without WHQL (e. g. OEM drivers). This hotfix supports SHA-2 code signing under Windows 7.

Known issues

- In IDS line scan, the GigE uEye CP Rev. 2 models may lose a line between two images with a pixel clock > 60 MHz.

Discontinued products

The following uEye camera models have been discontinued. With version 4.91 they are supported for the last time:

- UI-112x
- UI-512x
- XS

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