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SVCam GigE

Software Kit

Release Notes

Version: 1.5.9
Date: 2019-04-27

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1 Related documents

Starting with version 1.5.0, the SVCam GigE software has been structured as follows:

- SVCam GigE software (complete installation package)
- SVGigE_TL_Driver (GigE driver and transport layer DLLs)
- SVGigE_SDK (collection of functions for operating SVCam GigE cameras)
- SVCapture (a viewer program for SVCam GigE cameras)
- SVCam_Firmware (firmware upgrade for SVCam GigE cameras)

Each module manages its own Release notes document. Please refer to the module's documents in order to get more information. They can be opened in the Documents\Release notes folder in the SVS GigE SDK location in the Windows Start menu folder.

2 Overview

The SVCam GigE SDK provides for tools and interface software along with sample applications which allow for operating SVCam GigE cameras on intended target platforms.

3 Supported Image Processing (IP) Software

In addition to operate SVCam GigE cameras with own IP applications, all cameras have been tested and are fully compliant to the following image processing software products:

MVTec: HALCON 8.0.2/9.0/10/11

Above mentioned HALCON versions (in particular until version 9.0) are supported by specific acquisition modules that allow for running SVCam GigE cameras at full frame rate while taking advantage of the SVCam GigE filter driver. There are acquisition modules for HDEVELOP and Parallel HDEVELOP on HALCON 8 and one acquisition module for HALCON 9 where a separation between non-parallel and parallel does not exist but all software is capable of running tasks in parallel (multi-threaded).

In general, HALCON also provides support for running GigE cameras based on GenICam (see http://www.genicam.org). All camera controls are available with that generic GigE interface as well.

NOTE: Since September 2009, the SVCam-GigE acquisition modules are part of a standard HALCON distribution. Therefore those modules have been stopped to be delivered inside the SVCam GigE SDK, starting with version 1.4.23.56. Please obtain current modules from MVTec website.

Cognex: VisionPro 7.2 SR1/ 6.0

All SVCam GigE cameras can be operated at full frame rate when the filter driver has been installed using the "Cognex GigE Vision Configuration Tool". The camera control takes place based on GenICam. This means that all common camera controls are available except some specific controls like tap-balance.

Known issue: In "manual" mode, VisionPro re-opens a streaming channel for each particular image. This may provide to loss of frames or problems with camera communication. Therefore it is recommended to use "free running" instead. That mode opens a streaming channel only once and images can be acquired properly.

NI – LabView 8.6 / Vision Builder 3.5

All SVCam GigE cameras can be operated at full frame rate when a filter driver is used. Controlling camera parameters takes place based on GenICam. This means that all common camera controls are available except some specific controls like tap-balance and IO configuration.

Matrox - MIL 8.0

All SVCam GigE cameras can be operated upto a frame rate of about 60 fps (test result from December 2008, possibly improved in future). Controlling camera parameters takes place based on GenICam. This means that all common camera controls are available except some specific controls like tap-balance and IO configuration.

Stemmer: CVB 10.0

All SVCam GigE cameras can be operated at full frame rate when a filter driver transport layer is being used with CVB. Controlling camera parameters takes place based on GenICam. This means that all common camera controls are available except some specific controls like tap-balance and IO configuration.

JAI SDK 1.2.4

The JAI SDK allows for operating SVCam GigE cameras in a generic way based on GenICam without image processing. All SVCam GigE cameras can be operated at full frame rate when the JAI filter driver has been installed. Controlling camera parameters takes place based on GenICam. This means that all common camera controls are available except some specific controls like tap-balance and IO configuration.

StreamPix 3/4

The SVCam GigE SDK has been integrated by Norpix with their StreamPix 3/4 recorder product. Prior to using StreamPix 3/4 with SVS cameras the SVCam GigE SDK and the FilterDriver have to be installed. Integration took place based on version 1.4.16.30 of the SVCam GigE SDK and therefore SVS cameras can be operated with StreamPix 3/4 starting from that version and with all later versions.

4 Supported Platforms

The SVCam GigE SDK is provided for Windows and Linux platforms. In particular the following platforms have been tested:

- Windows 10
- Windows 7
- Windows XP SP2, SP3
- Windows 2000 (no filter driver available)
- OpenSuse 10.2
- Ubuntu 8.0.4 (32-bit)
- Ubuntu 8.0.4 (amd64)
- Fedora 12
- Debian

Integration into applications is supported for the following development environments:

- Microsoft Visual Studio 2005 and higher (C/C++/C#)
- Microsoft Visual C++ 6.0 (C/C++)
- Borland C 6.0 (C/C++)
- Borland Delphi 7 (Pascal)
- gcc (C/C++)

5 Release Notes V1.5.9

Transport Layer
Bug fixing in Driver: handling first frame with missing trailer packet.

6 Release Notes V1.5.8

- The driver installation tool is signed.
- command line argument for silent installation are added:
  - With command line argument /s_ install a possibly installed SVGigE FilterDriver will be silently installed.
  - With command line argument /s_uninstall a possibly installed SVGigE FilterDriver will be silently uninstalled.

7 Release Notes V1.5.7

Installer
- The installer is signed to avoid blocking the installation from some antivirus software.

SDK
- Bug fixing (StreamingChannel_create()): the camera settings are updated before creating streaming channel.

- Bug fixing (Camera_loadSettingsFromXml()): the order of the loaded xml settings has been changed to avoid overwriting the AOI settings.

8 Release Notes V1.5.6

Transport Layer
Bug fixing in Driver (improvement in messaging channel, Windows XP is not affected).
Due to the new signing certificate (SHA-256 code signing certificate) a patched version of windows 7 is required to trust code signed with a SHA-256 code signing certificate. Microsoft released an update for Windows 7 to support kernel-mode code signed with a SHA-256 certificate.

9 Release Notes V1.5.5

SVCapture
- MFT extended with reset and update button functionality

SDK
- New camera events are added.
- New functions to control lens states are added.

Transport Layer
Bug fixing when multiple time of packet resend occurs.

10 Release Notes V1.5.4

The maximum number of interfaces that can be detected is no more limited to 20.
Bug fixing when opening MFT controller.

11 Release Notes V1.5.3

The firmware is no more included on the SVGigE Software installation packet.

SVCapture
- The Pixel correction offset can be displayed and saved.
- New zoom functionality (Ctrl + Mouse Wheel) has been added.
- Auto Save option has been added.

SDK
- A negative value for "PixelsCorrectionMapOffset" is allowed.
- On The function "SaveSettingsToXml", the settings are extended with new features.
- Improvements on the c# interface.

Transport Layer
- Bug fixing in driver
- Bug fixing when using multiple cameras.
- Bug fixing when using an Adapter with multiple IP addresses.

12 Release Notes V1.5.2

A new firmware version 1.6.0 build 2545 has been added:

Cameras affected	Bugfixes
slc	lut
evo, slc, eco, hr	timeout on save to eeprom
evo, hr	corrected defectpixel offset
eco	ramp at first image after power up eliminated
all cameras	GenICam UserOutput changed, is case sensitive
eco2	Activate TriggerDebounce
evo12040	Overwriting ADC Calibration at startup
SVS4022xOGE	Black image on Single-Tap CF Cameras after updating to 1.5.
all cameras	backward compatibility issue with deprecated update register, especially with linux aoi

Cameras affected	Improvements
Tracer	1/10 mm steps with for focus in MFT

13 Release Notes V1.5.1

A new firmware builds have been added:

- Version 1.5.1 Build 2483 2013-12-11

  GenICam improvements
  - Tapconfig feature added

- Version 1.5.1 Build 2481 2013-12-05

  Bugfixes
  - AOI limits fixed
  All cameras

- Version 1.5.1 Build 2480 2013-12-02
  Bugfixes
  - PLL initialisation changed
  eco, evo, slc affected

14 Release Notes V1.5.0

The GigE driver is installed silently during SVGigE software installation. As well the driver will be silently removed from the system when uninstalling the software.
An Uninstall-llink has been added to the SVS GigE SDK folder in the Windows Start menu.

The SVGigE Software has been structured into the following modules which come with their own Release notes document:

- SVCam GigE software (complete installation package)
- SVGigE_TL_Driver (GigE driver and transport layer DLLs)
- SVGigE_SDK (collection of functions for operating SVCam GigE cameras)
- SVCapture (a viewer program for SVCam GigE cameras)
- SVCam_Firmware (firmware upgrade for SVCam GigE cameras)

A new firmware builds 2450 2013-11-22 Version 1.5.0 have been added.

General improvements
- Flipping for all CCD based cameras
- MicroFourThirds Lenscontrol
- Exposuretime max limits to 60s
- selectable tapconfiguration 4, 2 and 1 taps

GenICam improvements
- moved SFNC 2.0
- improved compatibility with 3rd party products
- LUT feature
- MFT Lenscontrol feature
- Autogain/-exposure feature
- Autotapbalance feature
- Whitebalance feature
- Removed Pixelformat noncachable

Bugfixes

- 4IO Pin fix for eco

Other
- enable async_expose for hr11&16
- Timing Optimization for evo&hr
- Sychronized PWM for Sequenzer

Supported cameras
SVS11002CFGEV2_v1.5.0_b2450
SVS11002CSGEV2_v1.5.0_b2450
SVS11002CUGEV2_v1.5.0_b2450
SVS11002MFGEV2_v1.5.0_b2450
SVS11002MSGEV2_v1.5.0_b2450
SVS11002MUGEV2_v1.5.0_b2450
SVS16000CFGE_v1.5.0_b2450
SVS16000CSGE_v1.5.0_b2450
SVS16000CUGE_v1.5.0_b2450
SVS16000MFGE_v1.5.0_b2450
SVS16000MSGE_v1.5.0_b2450
SVS16000MUGE_v1.5.0_b2450
SVS4022CFGE_v1.5.0_b2450
SVS4022COGE_v1.5.0_b2450
SVS4022CTLGEA_v1.5.0_b2450
SVS4022MFGE_v1.5.0_b2450
SVS4022MOGE_v1.5.0_b2450
SVS4022MTLGEA_v1.5.0_b2450
SVS625CFGE_v1.5.0_b2450
SVS625MFGE_v1.5.0_b2450
eco1050CTLGEC67_v1.5.0_b2450
eco1050CTLGEC_v1.5.0_b2450
eco1050MTLGEC67_v1.5.0_b2450
eco1050MTLGEC_v1.5.0_b2450
eco204CPGE_v1.5.0_b2450
eco204CVGE4IO_v1.5.0_b2450
eco204CVGE67_v1.5.0_b2450
eco204CVGE_r3_v1.5.0_b2450
eco204MPGE_v1.5.0_b2450
eco204MVGE4IO_v1.5.0_b2450
eco204MVGE67_v1.5.0_b2450
eco204MVGE_r3_v1.5.0_b2450
eco2050CTLGEC67_v1.5.0_b2450
eco2050CTLGEC_v1.5.0_b2450
eco2050MTLGEC67_v1.5.0_b2450
eco2050MTLGEC_v1.5.0_b2450
eco2150CTLGEC67_v1.5.0_b2450
eco2150CTLGEC_v1.5.0_b2450
eco2150MTLGEC67_v1.5.0_b2450
eco2150MTLGEC_v1.5.0_b2450
eco267CPGE_v1.5.0_b2450
eco267CVGE4IO_v1.5.0_b2450
eco267CVGE67_v1.5.0_b2450
eco267CVGE_r3_v1.5.0_b2450
eco267MPGE_v1.5.0_b2450
eco267MVGE4IO_v1.5.0_b2450
eco267MVGE67_v1.5.0_b2450
eco267MVGE_r3_v1.5.0_b2450
eco274CPGE_v1.5.0_b2450
eco274CVGE4IO_v1.5.0_b2450

eco274CVGE67_v1.5.0_b2450
eco274CVGE_r4_v1.5.0_b2450
eco274MPGE_v1.5.0_b2450
eco274MVGE4IO_v1.5.0_b2450
eco274MVGE67_v1.5.0_b2450
eco274MVGE_r4_v1.5.0_b2450
eco285CPGE_v1.5.0_b2450
eco285CVGE4IO_v1.5.0_b2450
eco285CVGE67_v1.5.0_b2450
eco285CVGE_r4_v1.5.0_b2450
eco285MPGE_v1.5.0_b2450
eco285MVGE4IO_v1.5.0_b2450
eco285MVGE67_v1.5.0_b2450
eco285MVGE_r4_v1.5.0_b2450
eco4050CTLGEC67_v1.5.0_b2450
eco4050CTLGEC_v1.5.0_b2450
eco4050MTLGEC67_v1.5.0_b2450
eco4050MTLGEC_v1.5.0_b2450
eco414CPGE_v1.5.0_b2450
eco414CVGE4IO_v1.5.0_b2450
eco414CVGE67_v1.5.0_b2450
eco414CVGE_r2_v1.5.0_b2450
eco414MPGE_v1.5.0_b2450
eco414MVGE4IO_v1.5.0_b2450
eco414MVGE67_v1.5.0_b2450
eco414MVGE_r2_v1.5.0_b2450
eco415CPGE_v1.5.0_b2450
eco415CVGE4IO_v1.5.0_b2450
eco415CVGE67_v1.5.0_b2450
eco415CVGE_r2_v1.5.0_b2450
eco415MPGE_v1.5.0_b2450
eco415MVGE4IO_v1.5.0_b2450
eco415MVGE67_v1.5.0_b2450
eco415MVGE_r2_v1.5.0_b2450
eco424CPGE_v1.5.0_b2450
eco424CVGE4IO_v1.5.0_b2450
eco424CVGE67_v1.5.0_b2450
eco424CVGE_r3_v1.5.0_b2450
eco424MPGE_v1.5.0_b2450
eco424MVGE4IO_v1.5.0_b2450
eco424MVGE67_v1.5.0_b2450
eco424MVGE_r3_v1.5.0_b2450
eco445CPGE_v1.5.0_b2450
eco445CVGE4IO_v1.5.0_b2450
eco445CVGE67_v1.5.0_b2450
eco445CVGE_r2_v1.5.0_b2450
eco445MPGE_v1.5.0_b2450
eco445MVGE4IO_v1.5.0_b2450
eco445MVGE67_v1.5.0_b2450
eco445MVGE_r2_v1.5.0_b2450
eco618CPGE_v1.5.0_b2450
eco618CVGE4IO_v1.5.0_b2450
eco618CVGE67_v1.5.0_b2450
eco618CVGE_r2_v1.5.0_b2450
eco618MPGE_v1.5.0_b2450
eco618MVGE4IO_v1.5.0_b2450
eco618MVGE67_v1.5.0_b2450
eco618MVGE_r2_v1.5.0_b2450

eco655CPGE_v1.5.0_b2450
eco655CVGE4IO_v1.5.0_b2450
eco655CVGE67_v1.5.0_b2450
eco655CVGE_r2_v1.5.0_b2450
eco655MPGE_v1.5.0_b2450
eco655MVGE4IO_v1.5.0_b2450
eco655MVGE67_v1.5.0_b2450
eco655MVGE_r2_v1.5.0_b2450
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eco674MTLGEC_v1.5.0_b2450
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eco694MTLGEC_v1.5.0_b2450
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evo4070CFLGEA67_v1.5.0_b2450
evo4070CFLGEA_v1.5.0_b2450
evo4070CFLGEC4IO_v1.5.0_b2450
evo4070CFLGEC67TR_v1.5.0_b2450
evo4070CFLGEC67_v1.5.0_b2450
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evo4070MFLGEA67_v1.5.0_b2450
evo4070MFLGEA_v1.5.0_b2450
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evo4070MFLGEC67TR_v1.5.0_b2450
evo4070MFLGEC67_v1.5.0_b2450
evo4070MFLGEC_v1.5.0_b2450
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evo8050CFLGEA67TR_v1.5.0_b2450
evo8050CFLGEA67_v1.5.0_b2450
evo8050CFLGEA_v1.5.0_b2450
evo8050CFLGEC4IO_v1.5.0_b2450
evo8050CFLGEC67TR_v1.5.0_b2450
evo8050CFLGEC67_v1.5.0_b2450
evo8050CFLGEC_v1.5.0_b2450
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evo8050MFLGEA67_v1.5.0_b2450
evo8050MFLGEA_v1.5.0_b2450
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evo8050MFLGEC67TR_v1.5.0_b2450
evo8050MFLGEC67_v1.5.0_b2450
evo8050MFLGEC_v1.5.0_b2450
hr16050CFLGEA_v1.5.0_b2450
hr16050CFLGEC_v1.5.0_b2450
hr16050MFLGEA_v1.5.0_b2450
hr16050MFLGEC_v1.5.0_b2450

hr16070CFLGEA_v1.5.0_b2450
hr16070CFLGEC_v1.5.0_b2450
hr16070MFLGEA_v1.5.0_b2450
hr16070MFLGEC_v1.5.0_b2450
hr29050CFLGEA4IO_v1.5.0_b2450
hr29050CFLGEA_v1.5.0_b2450
hr29050CFLGEC_v1.5.0_b2450
hr29050MFLGEA4IO_v1.5.0_b2450
hr29050MFLGEA_v1.5.0_b2450
hr29050MFLGEC_v1.5.0_b2450
slc1050CTLGEC_r2_v1.5.0_b2450
slc1050MTLGEC_r2_v1.5.0_b2450
slc2050CTLGEC_r2_v1.5.0_b2450
slc2050MTLGEC_r2_v1.5.0_b2450
slc2150CTLGEC_r2_v1.5.0_b2450
slc2150MTLGEC_r2_v1.5.0_b2450
slc4050CTLGEC_r2_v1.5.0_b2450
slc4050MTLGEC_r2_v1.5.0_b2450

15 Release Notes V1.4.26.62

New functionality has been added in SDK and SVCapture to use different shutter and flipping mode.

16 Release Notes V1.4.26.61-1

A bugfix for communication timeout. Furthermore some improvements have been implemented into SVCapture.
The Acquisition mode ACQUISITION_MODE_NO_ACQUISITION is no longer available.

17 Release Notes V1.4.26.61

A bugfix for operating cameras in Multicast mode has been added. Therefore the driver and transport layer version changed to 1.4.26.

18 Release Notes V1.4.25.60-2

Defect pixel functionality has been added to SVCapture and to the SDK. The MFT dialog window has been made accessible again.

19 Release Notes V1.4.25.60-1

New functions to control a MFT lens have been added.

20 Release Notes V1.4.25.60

A new driver version addresses improvements and bugfixes of previous version.

New functionality has been added in SDK to adjust GVCP and GVST-timeout. Furthermore some improvements were realized in SVCapture.

A new firmware builds Version 1.4.66-3 2138-2139 have been added.

- **General improvements**
  - eco2 Introduction
  - LUT feature for evo/HR Series.

21 Release Notes V1.4.24.59-1

A new firmeware builds V1.4.66 1931-1940 have been added.

- **General improvements**

  - Integration 4IO, triggerviolation
  - Some GenICam improvements

- **Bugfixes**

  - Bayerpattern alignment eco424CVGE, eco618
  - Bugfix Autogain Save to EEPROM
  - AcqStart during AcqStop compatibility with Matrix Vision

- **Other**

  - evo8050 timing optimization
  - evo sdram timing optimization
  - svs4021/svs4022 Vertical Timing, vertical stripes near saturation
  - evo2150 timing optimization
  - eco285, eco274 & eco414 timing optimization
  - eco minimum aoi sizey changed

- **discontinued cameras**

svs29050CFLGEC, svs29050MFLGEC, svs4050CFLGEA, svs4050CFLGEC, svs4050MFLGEA, svs4050MFLGEC, svs8050CFLGEA, svs8050CFLGEC, svs8050MFLGEA, svs8050MFLGEC.

- **Supported cameras**

  Siehe \SVS-VISTEK GmbH\SVS GigE SDK\SVS GigE FirmwareUpdate\firmware\release v1.4.66-2.txt.

22 Release Notes V1.4.24.59

A new sequencer, trigger debouncer and PIV mode functionality has been added to the SDK and to SVCapture. Furthermore, the sensor temperature is now available and all camera settings can be exported and imported to and from a XML file.

The C# wrapper interface has been updated to current version.

23 Release Notes V1.4.24.58

A new firmeware build V1.4.66_b1759 for the "eco" camera series has been added which supports the "trigger violation" signal.

Service release V1.4.24.58-3
A problem with the XML files for "eco" cameras has been solved with build b1805.

24 Release Notes V1.4.24.57

Camera messages like e.g. "trigger violation" have been added to the SDK.

A PacketResend capability has been re-introduced in all filter drivers on all platforms. Further, the SDK has returned to one installation package that applies to all platforms:

- Windows 7 / 64-bit (with driver support 32/64-bit, e.g. SVCapture)
- Windows 7 / 32-bit
- Windows XP / 64-bit (with driver support 32/64-bit, e.g. SVCapture)
- Windows XP / 32-bit

25 Release Notes V1.4.23.56-2

Driver installation problem on x86 platforms ("wrong side-by-side configuration") has been solved.

26 Release Notes V1.4.23.56-1

A new GigE FilterDriver for Windows 7/XP has been involved which addresses previous instability issues (Blue-Screen on Windows 7, PacketResend issues on Win7/XP). Further, SVCapture and in general all 32-bit applications have got access to the FilterDrvier on x64 platforms.

NOTE: The filter driver does not support PacketResend. Images may get lost in case of packet loss which usually does not happen on current network hardware. PacketResend will come next.

There are two installer packages available, one for all platforms but WinXP/32-bit and one for the latter platform. The two installer packages are applicable for the following platforms:

A - general installer package (SVCam_GigE_SDK_1.4.23.56-1.exe):

- Windows 7 / 32-bit
- Windows 7 / 64-bit (with driver support 32/64-bit, e.g. SVCapture)
- Windows XP / 64-bit (with driver support 32/64-bit, e.g. SVCapture)

B – platform specific package (SVCam_GigE_SDK_1.4.23.56-1_winXP32.exe)

- Windows XP / 32-bit

27 Release Notes V1.4.23.56

A new firmware 1.4.66 build 1561/1565 has been made available in this release. That firmware addresses improvements and bugfixes of previous builds. Additionally, a Shading Correction functionality has been implemented to some camera models.

More details about available camera features in model series can be obtained from following feature survey:

Feature	eco	CF	SLC	Big 11&16	Big 4-Tap	EVO	SVCapture	SDK	GenICam
Expotime	x	x	x	x	x	x	x	x	x
External Trigger	x	x	x	x	x	x	x	x	x
Framerate	x	x	x	x	x	x	x	x	x
Gain	x	x	x	x	x	x	x	x	x
Offset	x	x	x	x	x	x	x	x	x
PIV	x								
Readout Control	x	x	x	x	x	x	x	x	custom
Single Frame Acq	x	x	x	x	x	x			x
Softwaretrigger	x	x	x	x	x	x	x	x	x
Auto Tapbalance	o	x	x	x	x	x	x	x	
Auto Whitebalance							x	x	
AutoGain	x	x	x	x			x	x	x
FFC		o		x			x		
LUT	x	x	x	x			x	x	
Manual Tapbalance		x	x	x	x	x	x	x	
Noisefilter	x	o							x
Shading		o			x		x		
Whitebalance	x	x	x	x	x		x	x	x
AOI	x	x	x	x	x		x	x	x
Binning	x	x	x	x			x	x	
Pixeldepth	x	x	x	x	x	x	x	x	x
Tapconfig		x					x	x	
Debouncer	x	o	x	x	x	x			custom
Dual Strobe Controller	x	o							
IOMux	x	o	x	x	x	x	x	x	x
Prescale	x	o	x	x	x	x			x
PWM	x	o	x	x	x	x			x
Sequenzer	x	o	x	x	x	x			custom
Strobe Controller	x	x	x	x	x	x	x	x	custom
Strobeoverride		x							
Trigger both Edges		x							
Temperature Sensor	x	o	x	x	x	x		x	x
Logic Trigger									

Explanation: cross (x) – available, empty – not available , circle (o) – not applicable

28 Release Notes V1.4.23.55

Runtime of SDK's 12-to-16-bit conversion function has been improved by about 26%. Improved implementation needs now typically 30 ms for a 5 MPix image on a 2.4 GHz Intel Xeon CPU. Further, a bug was fixed which allowed the least significant bits of each 8th column be wrong. This resulted in vertical stripes when representing LSB of each pixel on screen.

Maintenance release 1.4.23.55-1
Calculation for FFC (flat field correction) is now supported inside camera. The dialog for FFC in SVCapture has been adjusted for operating the new FFC calculation procedure.

Adjusting IO configuration using the SDK was broken for firmware builds prior to build 65. This has been fixed. The SVCapture program was not affected but it could adjust IO configuration properly.

Maintenance release 1.4.23.55-2

The Delphi (Pascal) interface has been fully synchronized with the C++ functionality.

Maintenance release 1.4.23.55-3

A bug was fixed also in SVCapture which allowed the least significant bits of each 8th column be wrong. This resulted in vertical stripes when representing LSB of each pixel on screen.

Further, SVCam-GigE modules for HALCON integration have been removed. Please see also above information about HALCON/MVTec.

Maintenance release 1.4.23.55-4

Bugfix for SDK function getAcquisitionControl() implemented.

29 Release Notes V1.4.23.54

The performance of the C# sample program has been improved. It is now on the same high level as the C++ sample. Usually, cameras can now be operated up to their maximal frame rate.

Sample programs will now be copied to a user's personal folder. They are no longer available in the "Program Files" folder. This is due to Windows 7 not allowing to work (compile, link) inside program folders. A user's personal folder is now the recommended place for own work.

Shortcuts have been added in the "**Start->SVS-VISTEK GmbH->SVS GigE SDK**" folder for starting all **sample programs** directly (for win32/x64) as well as for starting **development projects** for all included samples. Before, the **filter driver** should be installed which is also available as a shortcut in mentioned Start folder.

Maintenance release 1.4.23.54-1
A flat field correction has been added in SVCapture which is available in the Camera menu. This is an evaluation version of flat field correction which allows for calculating a correction from a dark image and a gray image. Subsequently those correction data can be transferred to camera. They will remain in the camera until next reboot.

Maintenance release 1.4.23.54-2
A function for evaluation of actual driver availability has been added. In particular this allows for indicating that the usage of x86 filter driver is not supported on x64 platforms. Instead, using Winsock for operating 32-bit applications on x64 platforms is recommended as a workaround.

Maintenance release 1.4.23.54-3
Tap balance functionality in SVCapture did not work for 4-tap cameras. This has been fixed. Further, a direct register access has been implemented in SVCapture (read and write). This is an expert functionality.

Maintenance release 1.4.23.54-4
FAQ document has been extended.

Maintenance release 1.4.23.54-5
Writing to 'write only' registers enabled in SVCapture.

30 Release Notes V1.4.23.53

The IO multiplexer signals have been extended in order to support also the following signals:

- EXPOSE
- READOUT
- PWMA and PWMB (pulse with modulator)
- STROBE0, STROBE1 and STROBE 0+1

New signals are enabled dynamically. That means they will be available only if a camera indicates by its capability features that those features are implemented.

Before using those signals, they have to be passed through to an output pin, e.g. by using SVCaptures IO Configuration dialog.

NOTE: Current service release 1.4.23.53 contains respective firmware update files build 65 only for eco424 cameras.

31 Release Notes V1.4.23.52

Firmware build 64 solves stability issues which could be encountered in certain situations like heavy communication with camera or high packet resend. Those issues could provide to sporadic timeouts of communication, to loss of single images, to a broken connection or to a blocking camera which had to be rebooted for continue working with it.

32 Release Notes V1.4.23.51

A SVGigE_DriverInstallation.exe program has been added to the distribution in order to facilitate an automated installation of the SVGigE filter driver. That tool is also well suited for integration into all applications that rely on having the driver installed for their operation.

33 Release Notes V1.4.22.50

GigE driver operation has been improved in order to work properly also in cases where network interfaces get disabled/enabled.

34 Release Notes V1.4.21.49

Automatic driver installation has been improved on systems which had previous versions installed. Sometimes new driver components did not replace old files during installation process which resulted in a broken installation. The driver could not be used in that case.

Known issue: No network interface must be disabled.

35 Release Notes V1.4.21.48

The SVGigE FilterDriver has been adjusted for supporting DualLink cameras, as for example SVS8050 CFLGEC.
In general, those cameras could be operated already with previous SDK releases. However, a high packet resend resulted from a DualLink camera sending image data streams starting from top to middle for the upper taps and from bottom to middle for the lower taps at the same time. New driver has been made aware of that working principle.

36 Release Notes V1.4.20.47

An automated de-installation/installation of the SVGigE FilterDriver will now also be suggested in case of a version mismatch between driver and program version (dlls).

The binning mode capability has been extended to allow for a 3x3 and 4x4 binning mode in addition to already available 2x2, horizontal and vertical binning mode.

37 Release Notes V1.4.20.46

Installation of a SVGigE FilterDriver has been integrated in SVCapture and in the SDK. On x86 platforms (WinXP, Win7), SVCapture will determine whether a driver is installed and will suggest to install it if not present. Since SVCapture is an x86 application, it will not work with a x64 driver on x64 platforms. Therefore, e.g. the SVGigE_ExampleVC8 sample application can be used to do the filter driver installation if no driver is present.

Maintenance release V1.4.20.46-1
A check for admin rights has been added before driver installation.

38 Release Notes V1.4.20.45

SVCapture on Windows 7 x64: SVCapture as well as x86 DLLs encountered problems when determining maximal packet size on Windows 7 x64. Therefore that procedure has changed and will look but for 9000 bytes jumbo frames availability. If this fails then a default packet size of 1500 bytes will be selected. Additionally, other packet sizes up to 9000 bytes can be set manually or programmatically as before.

Maintenance release V1.4.20.45-1
First time setting exposure for firmware builds > 59 resulted in an -101 error condition. This was related to implicitly setting a 'granularity' from previous builds. The problem has been fixed.

Further a missing 'ImageProcDll.dll' has been added to the C# sample program.

39 Release Notes V1.4.20.44

Windows 7: The SVGigE SDK has been extended by FilterDrivers for Win7 x86/x64 platforms.
Further a programming example for .NET using C# hass been added to the SDK.
Bugfix: set/get auto gain limits has been fixed.
Added: function for re-starting IP configuration of a camera
Firmware: Build 62 fixes issues with trigger reliability, for binning mode and others. Cameras with higher resolution may expose a different color scheme due to a shift by a single line.

40 Release Notes V1.4.19.43

Improved: When an application had not closed a streaming channel e.g. after network connection was interrupted, then the camera could not be opened again by same application. This behavior has been improved by implicitly closing old streaming channel immediately trying to open a new streaming channel. Normally, this will succeed and an application will thus be enabled to continue working with a camera which network connection was interrupted temporarily.

Stability issues have been addressed in both, the FilterDriver and in the SVGigE DLLs. One issue was related to re-sending a command packet after a packet loss for starting acquisition what resulted in a "C002" error code. Second issue caused a blocking streaming channel when a camera was stopped and subsequently re-started after capturing an image with highest

ImageID=65535. Both issues have been addressed by a workaround in the SDK and they will also be resolved finally in next firmware build.

41 Release Notes V1.4.18.42

Bugfix: The auto tap balance has been de-activated after restore from EEPROM in order to prevent from an unwanted tap balance run.

The HALCON interface has been adjusted (see SVCam-HALCON documentation)

Improved: The stability when switching acquisition mode e.g. from fixed-frequency mode to software trigger mode has been improved.

42 Release Notes V1.4.17.41-SR1

A problem occurred on DELL PCs related to allocating image buffers in kernel space. While on other PCs it was possible to use almost all RAM as image buffers except the space that the operating system is using, the problem PCs allowed for allocating no more than about 80 Mbytes for image buffers under all circumstances.

A detection of the described situation has been implemented which reports an error when an application tries to allocate more then the amount of memory that can reliably be obtained from the system. Buffer allocation in SVCapture has been limited such that no more than 50 Mbytes will be allocated for image buffers of a single camera.

The delivery of signals like the start-of-transfer signal has been improved for heavy system load by making the event thread time critical.

Using the Edit field, the exposure can now be entered for an extended range upto 85 sec.

43 Release Notes V1.4.16.40-SR1

A trigger issue has been solved which caused an inverted function of trigger polarity. This service release contains a firmware upgrade that solves the issue. All SDK modules are unchanged.

The new release additionally contains a CompatibilityTool.exe file which allows for switching a camera back to previous (wrong) behavior. The purpose of re-establishing that previous behavior might be for compatibility reasons with software that relies on it.

44 Release Notes V1.4.16.40

Problems on a network protocol level with some switches have been investigated. There was an issue with handling PAUSE frames for the HR and the eco camera family which has been addressed with a new firmware release 1.4.58 for all cameras.

The problem became visible by loosing frames even on very low frame rates when operating two or more cameras on a switch with low buffer space. It did not affect single camera operation and it was not a problem with those switches that provide for huge buffers.

The new firmware allows for operating all switches up to their specified limit which is usually next to about 120 MB/s.

The SVCam GigE SDK has been extended by the following functionality:

- Read and reset timestamp counter
- Read timestamp tick frequency

45 Release Notes V1.4.16.39

The interoperability with HALCON has been improved considerably. In particular the following items have been added or extended:

- Tap balance and IO signal configuration and access
- Seamless integration with HALCON's Image Acquisition Assistant
- Improved bayer algorithms, one optimized for quality and a second for runtime
- Min/max exposure dependent on frame rate

The following issues related to operating cameras with HALCON have been fixed:

- Clearing borders in bayer conversion
- Backward compatibility re-established for all parameters
- Switching live mode on/off

Further the following issues with the SDK in general have been fixed:

- Stability issues with SVS16000 (long run, > 1 day)
- CPU load caused by MessagingChannel
- New link to the online reference in Windows Start menu added
- Saving gray images from a color camera fixed
- 'Freeze' logic in the Settings dialog changed to 'Display' logic
- Color mode re-established if applicable when returning from binning mode
- Rejecting any SDK functions when a camera was not opened before
- Software trigger functionality fixed

46 Release Notes V1.4.16.38

Message capabilities have been added to the SDK functions. This allows applications to subscribe besides others to a "start-of-transfer" message. That message indicates that exposure time has elapsed and an object can be safely changed in front of the lens while image data is being transferred from a camera to the target PC.

Further a continuous camera command logging has been de-activated which was still active by accident in releases 1.4.16.36 and 1.4.16.37.

47 Release Notes V1.4.16.37

- A GenICam compliant trigger feature has been added to the XML file of all cameras.
- Support for a dual-tap LUT has been added to the SDK
- A problem when displaying pixel values in SVCapture has been fixed

48 Release Notes V1.4.16.36

- Functions for querying minimal and maximal increment added for several parameters as for example frame rate, exposure, AOI, e.t.c.
- Auto-gain functionality has been made available through SDK function
- The start of image transfer can now be delayed by a readout control feature
- Configuration and operation of IO lines has been added to the SDK including the support for serial communication by UART
- SVCapture has been enabled for switching a dual-tap camera into single tap mode if the camera supports this feature

49 Release Notes V1.4.16.33

- SVCapture has been extended for configuring IO settings of a camera
- Problems with a local IP address when opening a streaming channel have been fixed

50 Release Notes V1.4.16.32

- Support for HALCON 9 has been added to the SDK
- A bug in the filter driver has been fixed which prevented images from a camera to arrive in an application when the camera was opened a second time on the same network port.
- "Multicast" capabilities have been added to the SDK and programs like SVCapture
- An issue with updating exposure delay in SVCapture has been fixed
- The SDK now rejects requests which try for switching to an unsupported pixel depth
- A conversion of color images to gray images has been added to the SDK and to programs like SVCapture
- A compatibility issue for versions prior to 1.4.14 has been solved which was caused by renaming some functions in the SDK in previous versions.
- The gain field in SVCapture has been enabled for values beyond the usually specified +18 dB range up to extended gain values of + 36 dB

Known bugs:

- The SVCam GigE filter driver does not work on Windows Vista

51 Release Notes V1.4.16.30

- Implementation of the filter driver has been improved in order to work smoothly also with non-Intel chipsets like Broadcom, Realtek and others
- An auto-tap-balance functionality has been added to the SDK. It is operated on the PC by software or inside the camera if the camera supports that feature

52 Release Notes prior to 2009

A release history before January 2009 is available in the README.txt file which ships with the SDK.