



Release Notes for the 3D Camera SDK, version 4.4 May 2013

This is a general release for the SICK 3D Camera offering. The major improvements in relation to the previous release are the addition of a .NET version of the iCon API, an updated high performance driver, and updated drivers for the Ranger C series. The new .NET API offers the same functionality as the C++ version. In addition, there are also some bug fixes and stability enhancements.

Supported HW

PRODUCT NAME	TYPE CODE
Ranger C	RANGER-Cxxxxx
Ranger D	RANGER-Dxxxxx
Ranger E, ColorRanger E	RANGER-Exxxxx
Ruler E1200	RULER-E1xxx
Ruler E600	RULER-E2xxx
Ruler E150	RULER-E4xxx

Included components in 3D Camera SDK 4.4.0.318

COMPONENT	VERSION (* = CHANGED FROM RELEASE 4.3)
Ethernet Camera application	4.4.0.95 *
Ranger C Camera application	4.0.0.4
Ethernet Camera FPGA	1.4.12.0
Ranger C FPGA	2.0.0
Ethernet monitor	3.0.0.6
iCon dll API	4.4.0.258 *
Ranger Studio	4.4.0.318 *
eBUS SDK	3.0.5 *
DALSA Coreco Sopera LT runtime	7.10 *
DALSA Coreco X64-CL driver	1.60.01.0408
DALSA Coreco X64-iPro driver	1.50 *



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Installation

Be sure to uninstall any previous versions of 3D Camera SDK, ("Add or Remove programs" in the Control Panel) then run the setup.exe of this release.

Upgrade the camera firmware (Camera application and FPGA).

Make sure to use the 3.0.5 version of the eBUS SDK if high performance driver will be used.

Note that when upgrading the firmware on Ethernet cameras from versions prior to 3.0.0.18, the error message "Flash failed" may be given even though the upload was successful. If so, reboot your camera and check the firmware versions (FPGA and Camera Application). If these are matching your selected files, the upgrade has been successful and everything is OK.

System requirements

- Operating system:
Windows XP Pro SP3 32 bit,
Windows XP Pro SP2 64 bit
Windows 7 32 bit
Windows 7 64 bit
- For Ranger E/D and Ruler E a Gigabit Ethernet adapter is required.
Intel Gigabit network adapters are recommended.
- For Ranger C a CameraLink compatible frame grabber is required (base configuration).
Note: For data visualization in Ranger Studio, Windows XP/Windows 7 32 bit and Dalsa X64-CL or X64-iPro frame grabbers are required.

Supported compilers

This release of the 3D Camera SDK supports C, C++ and .NET in:

- Visual Studio 2005 SP1
- Visual Studio 2008
- Visual Studio 2010 SP1 – Required for 64 bit C++ applications.



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Summary of new product features

FUNCTIONALITY NAME AND DESCRIPTION	VALID FOR:
First release of the iCon .NET API	All cameras
Updated version of the High Performance driver (eBUS 3.0.5). Note that prior versions of eBUS are not compatible.	Ethernet Cameras
Windows 7 and 64-bit process support in iCon for Ranger C with updated versions of Teledyne DALSA Sopera SDK and iPro drivers.	Ranger C
Asynchronous sampling mode: This mode allows for a higher 3D profile speed when triggering with constant exposure time.	Ethernet Cameras
New high resolution 3D algorithm: Hi3D DCMOPT. This is an optimized variant of the Hi3D DCM algorithm allowing higher speed but with fewer features.	Ranger E, ColorRanger E, Ruler E
New “Output select” mode 6 for HorThr: This mode gives position of the laser line and the width of the line. (TDC-2321)	Ranger E, ColorRanger E

Improvements and Corrections

IMPROVEMENTS AND CORRECTIONS	VALID FOR:
Thread safety bug fixed in Calibration filter (TDC-2405)	All cameras
Fixed a problem in Ranger Studio when calibrating data from the Horizontal Threshold algorithm for certain combinations of the “acquisition direction” and “range axis” parameters. (TDC-2374)	Ranger E, ColorRanger E, Ruler E, Ranger C
Improved error handling in IconBuffer::saveBuffer() (TDC-1282)	All cameras
icon_cam_getCameraInfo() in the iCon C API now gives correct serial number and firmware version.	All cameras.
Using HorThr with few rows could cause corrupt Hi3D DCM data. (TDC-2487)	Ethernet cameras
Improved stability when using HiRes Color in MultiScan configurations. (TDC-2486).	ColorRanger E
Setting the “Laser on” parameter while measuring no longer results in incorrect data. (TDC-2450)	Ethernet cameras
Using “Sample mode” = 1 incorrectly changed trig mode to 2 regardless of its previous value. (TDC-2314)	Ethernet cameras



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Fixing incorrect traits when using HorThr algorithm with the binning parameter. (TDC-2447)			Ranger E, ColorRanger E, Ruler E
Log min cycle time for Ranger D on log/error channel and in Ranger Studio (TDC-1642)			Ranger D
Default configuration now contains a Hi3D DCM component instead of a HorThr component. (TDC-2257)			Ranger E, ColorRanger E, Ruler E
Resume data streaming after a GigE Vision device discovery broadcast has been received. (TDC-2332)			Ethernet cameras
Improved calibration compatibility for HorThr, HorMax and HorMaxThr. More combinations of the parameters “Range axis” and “Acquisition direction” now work with the calibration filters in iCon. (TDC-2353)			Ethernet cameras
Fixed a problem with incorrect, shifted mark values when using HiRes Color at high speed. (TDC-2355)			ColorRanger E55
Subcomponent C1 now has correct values when using HorThr with two thresholds and “Output select” set to mode 10. (TDC-1856)			Ranger E, ColorRanger E, Ruler E
Ranger D in free-running mode no longer gives incorrect error “Measurement loop running too fast”. (TDC-2305)			Ranger D
Camera no longer responds too early on boot channel after boot up. This could cause inconsistent behavior when the PC tried to connect to the camera after power on. (TDC-2383) Note: the camera start up time can now be perceived as longer than before.			Ethernet cameras
The parameter “AD bits” is now available for Ranger D cameras. (TDC-2264)			Ranger D
Fixed the problem where “Use enable” mode 3 did not give correct “Enable” bit in the mark data. (TDC-2356)			Ethernet cameras
The standard color component of ColorRanger E55 now supports both the high sensitivity and the uniform pixels modes. (TDC-2026)			ColorRanger E55
Fixed the bug that causes the camera to hang when selecting invalid sensor rows in HiRes Gray. (TDC-1557)			ColorRanger E55

Known limitations

KNOWN LIMITATIONS	VALID FOR:
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KNOWN LIMITATIONS	VALID FOR:
With the High Performance driver solution, maximum profile rate can be a slightly lower for some configurations. Also note that using small buffers in the iCon frame grabber class may lower the maximum profile rate when using the High Performance driver.	Ethernet cameras
Ruler support in iCon does not include the coordinate translation of the Ruler API.	Ruler E cameras
Only one Hi3D DCM component may have scatter activated. (TDC-928)	Ranger E
Only 1 Gbit/s Ethernet connections are supported, not 10 Mbit/s or 100 Mbit/s connections.	Ethernet cameras
White balancing of the color components only works in explicit reset mode.	ColorRanger E
Maximum buffer size for high performance driver is 63.95 MB per iCon buffer for all operating systems, except Windows XP 64 bit where the limit is 32 MB.	Ethernet cameras

Known issues

3DCamera SDK

KNOWN ISSUES	VALID FOR:
64-bit redistributable package needed for 64-bit applications using iCon C or C++ API with VS2010 is not included in the installer. It can be found here: http://www.microsoft.com/en-us/download/details.aspx?id=13523 (TDC-2559)	All cameras.

iCon API

KNOWN ISSUES	VALID FOR:
Iconbuffer::getWidth() returns number of bytes, not number of elements (as the documentation states) (TDC-1261)	All cameras
A connect/disconnect on a frame grabber object leaks 2kB memory. (TDC-990)	Ethernet cameras

Ranger Studio

KNOWN ISSUES	VALID FOR:
When using calibrated data, mark data is not displayed in Ranger Studio (TDC-1249)	All cameras



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Ethernet camera application and FPGA

KNOWN ISSUES	VALID FOR:
The “mark with” parameter can have incorrect value when using “sample mode” = 1 and “trig mode” = 0. Turn off “sample mode” to be able to set “mark with” correctly. (TDC-2451)	Ethernet Cameras
Hi3D COG gives incorrect data after using Hi3D DCM. (TDC-1345)	Ranger E
Mark with scan ID is not consistent if camera parameters are set when the camera is running (TDC-1325)	Ethernet cameras
Sending commands (eg. set/getParameterValue) or when GigE Vision device discovery broadcast are received while the camera is running might cause missing scans.	Ethernet cameras
When using very short cycle times near the limit of the camera you might get an error message saying "trig rate too high".	Ethernet cameras
For HorThr the approximate minimum cycle time is a few microseconds too low. Add 1-2 microseconds for stable behavior.	Ranger E, Ruler E, ColorRanger E
Hi3D DCM occasionally gives bad data when using the lower limit of 16 rows. (TDC-887)	Ethernet cameras
When using HorThr with ≤ 64 rows and 2 thresholds, explicit reset does not work correctly. (TDC-1002)	Ranger E, Ruler E, ColorRanger E
When using morphology filters in HorThr and HorMaxThr, the scale and offset traits are incorrect. This mainly affects systems that are calibrated. It is recommended that calibration is done with morphology settings identical to those used in the actual application that uses the calibrated camera. (TDC-1089)	Ranger E, Ruler E, ColorRanger E

Ranger C camera application and FPGA

KNOWN ISSUES	VALID FOR:
HorThr with Output select = 3 sometimes produces missing data $\neq 0$ (TDC-2036)	Ranger C
Ranger C can't load parameter file HorMax using 512 rows (TDC-1132)	Ranger C
HorThr can not be used with binning (TDC-1068)	Ranger C
Ranger C camera may stop sending data when over triggered if Mark is enabled. Sending a stop/start command sequence to the camera will get it to run again. (TDC-477)	Ranger C
HorMax does not report missing data as 0. (TDC-755)	Ranger C



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KNOWN ISSUES	VALID FOR:
Mark values do not start at 0 when starting the camera, but at 65. (TDC-984)	Ranger C

Contact

For general questions please contact your local SICK subsidiary.

Contact information to all SICK subsidiaries:

<http://www.sick.com/group/EN/home/general/Pages/Worldwide.aspx>

For technical support please use SICK Vision Support Pages:

<http://visionsupport.sick.com>