



# Common Vision Blox Release Notes

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## 1 Common Vision Blox Release Notes



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## 1.1 Image Manager/Foundation Package Release Notes

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Find the CVB Release Notes for Image Manager, Foundation Package and Tools in the following sections.

### CVB Image Manager and Foundation Package Release Notes

[Common Vision Blox 2019 \(13.2\)](#)

[Common Vision Blox 2018 \(13.1\)](#)

[Common Vision Blox 2017 \(13.0\)](#)

### CVB Tool Release Notes

#### 1.1.1 Common Vision Blox 2019 (13.2)

Following are the Release Notes for **Common Vision Blox 2019 (13.2)**.

As the CVB CameraSuite is a subset of Common Vision Blox, this document is also valid for the **CVB CameraSuite 2019** (the main difference being the absence of the Foundation Package and tools and the absence of a dongle licensing option on the CVB CameraSuite 2019). The **library version** that will be used to identify Common Vision Blox 2019 and CVB CameraSuite 2019 in this document and in the installers is **13.02.xxx**.

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## What is New in Version 13.02.xxx

Common Vision Blox 13.02.xxx is a minor upgrade of Common Vision Blox that builds on the same architecture as the previous major release. It introduces a number of changes but also addresses issues encountered with the previous release.

### General

- Common Vision Blox 13.02.000 is the first release of Common Vision Blox that comes with the **three new object oriented APIs CVB.Net, CVB++ and CVBpy** that target the programming languages/environments C#/.Net, C++ and Python respectively. These new APIs were designed around the C-API of Common Vision Blox from scratch with object oriented programming in mind, giving users an easier entry into the functionality of Common Vision Blox and making the rich feature set of the library more readily available and accessible.

Details about the new APIs may be found in the Common Vision Blox help under [Introduction/API Guide](#). An overview of the different mappings of the DLLs and their API bindings is [available online](#), as well as the documentation for [CVB.Net](#), [CVB++](#) and [CVBpy](#). The tutorials for the new APIs have been integrated into the folder hierarchy of Common Vision Blox in folders named after the new APIs (CVB.Net, CVB++ and CVBpy). The [Common Vision Blox User Forum](#) has sub categories on the [Programming Questions](#) section that are specific to the three new APIs where answers and more code snippets may be found.

■ C-style API ■ C++ API ■ Python API ■ .Net API

- The entire documentation for Common Vision Blox is now accessible online under <http://help.commonvisionblox.com>. These pages draw from the same source as the documentation installed with Common Vision Blox, but are updated frequently and therefore always reflect the latest state of the product, making it a great resource for finding up-to-date product details.
- For the Intel RealSense cameras, a GenICam compatible transport layer is now available. This transport layer not only makes Intel RealSense cameras available as GenICam devices inside Common Vision Blox - it also works with other GenICam compliant software packages (Common Vision Blox license will be required). On top of that, this transport layer will also work with a number of webcams that use the same driver interface as the Intel RealSense cameras.  
The Intel RealSense transport layer is *not* part of the Common Vision Blox installer, but comes as a separately downloadable setup for [32 Bit Windows](#) and [64 Bit Windows](#). For other platforms please contact [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).
- The Ubuntu 18.04 operating system is now supported for the architectures x86\_64, aarch64 and armv7hf.
- On all ARM platforms tool licensing through CodeMeter keys is now supported. Please note that in case of the ARM-based systems the dongle must be plugged into the device **before** booting it, otherwise it will not be recognized.

### Foundation Package Components

- The new *CVOpCUa.dll* adds an implementation of the OPC UA standard for secure machine-to-machine communication in industrial automation to Common Vision Blox. It contains everything necessary to set up and run an OPC UA client or an OPC UA server that provides customizable services and information to clients with the supported programming languages.
- The new *CVPolarization.dll* has been added to the Common Vision Blox Foundation Package. This DLL contains functions for processing the raw data from cameras with a polarization filter pattern on the sensor to extract the polarization information as Stokes parameters, polarization angle and degree of linear polarization for further processing. It also contains functions for visualizing the polarization information easily.
- The extrinsic 3D calibration in the *CVMetric.dll* has been significantly improved, making calibration faster and the recognition of the calibration target more robust.

## Tools

- The new Spectral tool (*CVSpectral.dll*) adds support for handling spectral imaging data either acquired directly from a hyperspectral camera system or ENVI files, saving ENVI files and extracting Lab or RGB image data from a hyperspectral data set.
- The Movie2 tool now supports high speed recording of uncompressed video streams into a proprietary container format. Files saved in that format can be streamed in Common Vision Blox applications.
- Starting with Common Vision Blox 2019 the Polimago tool is now available on all supported Linux platforms.
- The 64 Bit Windows build of the ShapeFinder tool now comes with a CUDA-based implementation that can increase search speed by a factor of up to about 2.5 on the right GPU hardware (for details please refer to the [release notes for ShapeFinder](#)). A build for nVidia Jetson TX1 is available on request (please contact [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de)).

## Target Platforms

Common Vision Blox has been tested and is currently supported on the following combinations of operating systems and hardware platforms:

	x86/i686	x64/x64_64	armv7l (hf)	aarch64
<b>Windows 7 SP1 and up</b>	X	X		
<b>Ubuntu 16.04</b>	X	X	X	X
<b>Ubuntu 18.04</b>		X	X	X

If you are interested in getting support for Common Vision Blox for combinations of operating systems and hardware platforms not listed here please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

### Tool Availability

On the Windows platform, most tools are available for both architectures (x86 and x64) - only CVB Color and CVB Manto are restricted to the 32 bit version.

For Linux (32 and 64 bit) only the Image Manager (CVB CameraSuite), Minos, ShapeFinder and GEVServer are currently available.

	Windows (32 bit)	Windows (64 bit)	Linux (all currently supported platforms)
Image Manager & GenICam	X	X	X
Foundation Package (CVFoundation.dll)	X	X	
Arithmetic	X	X	X
Barcode	X	X	
BayerToRGB	X	X	X
Color	X		
CVC Blob	X	X	X
Edge	X	X	X
GEVServer	X	X	X
GPUprocessing	X	X*	
LightMeter	X	X	X
Manto	X		
Minos	X	X	X
Movie	X	X*	
Polimago	X	X	X
ShapeFinder	X	X	X
TextOut	X	X	X

\* module-specific restrictions may apply; see release notes for details

## Available Installers

Since Common Vision Blox 13.00.000 the installers for Common Vision Blox do **no longer ship on a DVD**.

Instead, all installation packages as well as images for different embedded platforms are available for download from <http://www.commonvisionblox.com/en/cvb-download/> or on the Common Vision Blox User Forum's download page (<https://forum.commonvisionblox.com/c/downloads>).

Currently, the following items are available for download:

### Windows

The downloads for the **latest Common Vision Blox builds** for Windows are available here: <https://www.commonvisionblox.com/en/download-cvb-2017-windows-32-bit-and-64-bit/>.

Note that the 32 bit version of Common Vision Blox may also be installed and used on 64 bit versions of Windows.

This page not only give access to the up-to-date installers but also contains

- all the **latest Video Interface Drivers** that are available for the 32 and 64 bit Windows builds of Common Vision Blox
- the **adapters for Cognex Vision Pro and IPD Sherlock**
- the **runtime-only installers** of Common Vision Blox

The size of the installers and of the installed product differs between installer flavors as well as between system architectures and operating systems. The available installer flavors on Windows are:

	Installer
A	Common Vision Blox CameraSuite Runtime 13.02.xxx
B	Common Vision Blox CameraSuite 13.02.xxx
C	Common Vision Blox Runtime 13.02.xxx
D	Common Vision Blox 13.02.xxx

- Flavors B and D come with developer resources (Tutorials, reference documentation, header files) and are generally intended for development systems.
- Flavors A and C contain files needed during runtime only and are therefore smaller than B and D.  
They are ideally suited for deployment in a system to be shipped to the factory floor as they do not burden the system they are installed on with things that are only of interest for developers.
- Flavors A and B are CameraSuite installers, which means they will install the Image Manager plus GenICam (i.e. GigE Vision and USB3 Vision) support.  
They are intended for those customers who want to merely use Common Vision Blox as a

versatile and robust image acquisition SDK. Common Vision Blox CameraSuite may be used **free of charge with any GigE Vision or USB3 Vision camera bought from STEMMER IMAGING.**

- Flavors C and D contain the full set of tools available for the respective target platform and are the ones to be used while developing and/or deploying an application that utilizes the powerful algorithms in Common Vision Blox.

The installer size ranges from about 155 MB (CameraSuite Runtime Setup) to about 655 MB (Full Common Vision Blox Setup).

This includes all the required runtime files (e.g. the .Net runtimes and Visual C++ runtimes).

Keep in mind that during setup the installation requires a lot more space than the sum of the installer's size and the size of the installed files: The installer package is cached in the %ProgramData%\Downloaded Installations folder for repair/modification setups that may be required later on, and it is temporarily copied to the %temp% folder for execution of the actual setup. Taking this into account and adding the fact, that the files in the installer are typically compressed with a compression ratio of about 2 to 3, one can estimate the disc space requirements during installation to be about 4 to 5 times the size of the installer itself.

**Hint for users of Windows 8 and 10:** For Windows 8 and higher, the **.Net framework 2.0 is by default no longer part of the operating system's installation routine.**

As Microsoft no longer offers a downloadable installer package for the .Net framework 2.0 for Windows 8 and higher, it is not possible for the Common Vision Blox setup to install the .Net framework 2.0 on those operating systems. The components in Common Vision Blox (tutorials, Management Console) have therefore been **switched to the .Net framework 4.0**, but when an application or component that still uses the .Net framework 2.0 is started on Windows 8 or 10 for the first time, the operating system will want to automatically download and install the required framework version (if this has not happened yet). Of course an internet connection is required for this step.

See [here](#) for details. If your code is linked against the .Net framework 2.0 and you plan to deploy your Windows 8 or higher based system to a location (factory) where it has no internet connection please make sure to trigger the installation of the .Net framework before shipping your system.

### **Linux Versions**

Download links for the installation packages for the supported Linux versions for PC as well as the ARM-based platforms are available on

<https://www.commonvisionblox.com/en/download-cvb-2017-linux/>

On top of that, several system images for selected embedded systems are available for download as well as a number of application notes.

## Supported Compilers and Operating Systems and Development Environments

### Common Vision Blox for Windows

	32 bit	64 bit
Build Platform	The Image Manager and most of the tools for the 32 bit Windows platform have been built using Microsoft Visual C++ 14. The pattern recognition tool Manto has been built using Delphi XE7.	The Image Manager and all tools available on the 64 bit Windows platform have been built using Microsoft Visual C++ 10. The PolimagoLib.dll has been built using Delphi XE7.
Supported Development Environments and Compilers	Visual C++ (Visual Studio 2010 and up) C#, VB.Net (.Net Framework 2.0 and up) Delphi (versions 6, 7, 8, XE2 and up)	Visual C++ (Visual Studio 2010 and up) C#, VB.Net (.Net Framework 2.0 and up) Delphi XE2 and up
Supported Operating Systems	The 32 bit version of Common Vision Blox was tested under Windows 7 SP 1, and Windows 10. It is usable and officially supported to run on the x64 versions of Windows starting with Windows 7, however customers using the 32 bit version of Common Vision Blox may experience compatibility limitations with the Common Vision Blox acquisition drivers as not all manufacturers support the Windows on Windows 64 compatibility layer. If in doubt, please refer to your driver's release notes for details.	The 64 bit Windows version of Common Vision Blox was tested under Windows 7 SP 1x64, and Windows 10x64. It also generally runs on the Embedded versions of Windows x64 (for best results we suggest building your Windows Embedded image based on the Application Compatibility Template). Note that the Update KB2393802 must be installed on a Windows 7 Embedded x64 system - otherwise the installer will not work properly. Systems with Windows 7 Embedded x64 SP1 already have that update. If needed, the KB2393802 update may be downloaded directly from Microsoft.

All required runtime files are automatically installed by the Common Vision Blox setup.

**Users of GPUprocessing** should verify that their machine has DirectX 9.0c (October 2005) or later installed.

If this particular version is missing on a target machine, please download and install it from <https://www.microsoft.com/en-US/download/details.aspx?id=34429>.

**Hints for Visual Studio users:** The tutorial projects and solution files installed by Common Vision Blox cover the Visual Studio version 2010. Users of Visual Studio 2012 and higher please use the Visual Studio 2010 solutions when editing and/or building the tutorial programs. Visual Studio 2012 and higher will automatically convert the project and solution files as necessary when opening Visual Studio 2010 files - a mechanism we have so far found to work without any problems. When experiencing problems with upgrading the Visual Studio 2010 solutions please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

Please also note that starting with Visual Studio 2013, the Visual Studio installer no longer brings along the MBCS build of the MFC library. This causes problems when trying to build those Visual C++ tutorials of Common Vision Blox that still are using the MBCS version of MFC. Users who want to build those tutorials themselves are advised to first download and install the MBCS-version of MFC from Microsoft (<http://www.microsoft.com/en-us/download/details.aspx?id=40770>).

**Hints for Delphi users:** The tutorial projects and solution files installed by Common Vision Blox are **based on Delphi XE2**. Users of Delphi XE3 and higher please use the Delphi XE2 project files when editing and/or building the tutorial programs. Delphi XE3 and higher will convert the project files as necessary when opening Delphi XE2 files - a mechanism we have so far found to work without any problems. When experiencing problems with upgrading the Delphi XE2 projects please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

### Common Vision Blox for Linux

The Image Manager and all available tools for the 32 and 64 bit Ubuntu 16.04 platform have been built using the GNU Compiler Collection 5.4. The Image Manager and all available tools for the 32 and 64 bit Ubuntu 18.04 platform have been built using the GNU Compiler Collection 7.4. These compilers are also the compilers that are supported by Common Vision Blox on the Linux platform.

## Updating Existing Applications

### From Common Vision Blox 2018

Upgrading an application from Common Vision Blox 2018 (13.01.xxx) to Common Vision Blox 2019 (13.02.xxx) **will not require any changes to the application.**

Binaries compiled versus that version of Common Vision Blox will continue to run with Common Vision Blox 13.02.xxx.

### From Common Vision Blox 2017

Upgrading an application from Common Vision Blox 2017 (13.00.xxx) to Common Vision Blox 2019 (13.02.xxx) **will not require any changes to the application.**

Binaries compiled versus that version of Common Vision Blox will continue to run with Common Vision Blox 13.02.xxx.

### From Common Vision Blox 2016

Upgrading an application from Common Vision Blox 2016 (12.00.xxx or 12.01.xxx) to Common Vision Blox 2019 (13.02.xxx) **will not require any changes to the application.**

Binaries compiled versus those versions of Common Vision Blox will continue to run with Common Vision Blox 13.02.xxx - unless they have been using one of the tools discontinued in Common Vision Blox 2017.

### From Common Vision Blox 2011

Updating applications based on Common Vision Blox 2011 SP2 (11.02.xxx) to Common Vision Blox 2019 will only require changes if the Barcode OCX is involved (see below) as the API did not introduce any breaking changes. Common Vision Blox 2019 will continue to install the .Net wrapper DLLs of the different Common Vision Blox 2011 versions in the Global Assembly Cache so that applications built with any of the .Net languages will still be able to find their dependencies.

Applications using the Barcode OCX should be updated as the property set of the ActiveX control has changed which may require a regeneration of the property bag used in the application even if you do not want to make use of the new properties.

Applications built with Common Vision Blox 11.00.xxx or 11.01.xxx should also be adjusted to the updated CVDisplay.ocx introduced in Common Vision Blox 11.02.xxx for the same reason.

#### **To update your project to the new ActiveX control please...**

- copy the up-to-date C++ ActiveX wrapper files (cvdisplayctrl.h/.cpp; cvbarcodectrl.h/.cpp) into your project if you are using Visual C++.
- modify the project file to use the newer ActiveX control by modifying the respective COMReference entry in your \*.csproj or \*.vbproj file if you are using C# or VB.Net.
- update the ActiveX control toolbar to the latest package version found in %CVB%\Lib\Delphi or %CVB%\Lib\C if you are using an Embarcadero product.

- open your development environment and toggle one of the control's properties, then save the changes to update the environment's property bag for that control.

## **From Older Versions of Common Vision Blox**

If you are planning on porting applications built with Common Vision Blox 10.x or even Common Vision Blox 9.x please also read through the porting sections in the release notes of Common Vision Blox 2011 and Common Vision Blox 10.

## List of Changes

The following components have changed in Common Vision Blox 13.02.xxx:

### Installers

- On Windows 7 the tutorial and documentation icons are no longer installed under "Start Men\STEMMER IMAGING\Common Vision Blox". Instead they now end up in "Start Menu\Common Vision Blox" - which makes them visible under the title "Common Vision Blox" in Windows 8 and 10.
- On the Windows platform, the deprecated CVLinescan.ocx has been removed.
- On Windows no more Visual Studio 2008 files will be installed for the tutorials.
- The Qt libraries used by Common Vision Blox are now built with a "CVB" infix to prevent name clashes with other applications that are using Qt. The libraries will henceforth be installed into the directory %CVB%\Qt.
- The Common Vision Blox Management Console will not longer be the frontend for license activation and diagnostics - this role has now been taken over by the Common Vision Blox License Manager which is available on all platforms.

### Image Manager

#### ***collect-camsuite.exe***

- Execution of collect-camsuite should no longer fail on Linux when trying to query an U3V camera.

#### ***CVBAvi.dll***

- The CVBAvi.dll is now capable of opening \*.cvrv files generated by the latest version of Movie2.

#### ***CVCore3D.dll***

- Due to a bug CVC3DCreateRangeMapFromPointCloud() used to produce an empty pixel line. This has been fixed.
- An implementation of the Brown-Conradi lens distortion correction algorithm has been added.
- A pinhole camera calibration method has been added.
- Plane fit methods have been added.

#### ***CVCDisp.dll***

- DirectDraw will from now on be bypassed when displaying images with a bit depth > 8 which cannot be handled properly by DirectDraw.

#### ***CVCDriver.dll***

- A bug in the signature of the DODiscover() and DODiscoverW() functions has been fixed.
- Fixed DeviceDiscovery() for U3V devices.
- Fixed output format of MAC addresses.
- Patched the function GetDriverID() for up-to-date hardware.

#### ***CVCIimg.dll***

- Fixed memory leak in loaded TIFF files.
- Fixed a problem in the calculation of the required memory size in CreateImageFromPointer().

#### ***CVDisplay.ocx***

- Fixed AddOverlayObjectNET2() to work properly in 32 bit processes as well.
- The mouse wheel zoom has been modified to always include the panorama zoom in the sequence of zoom factors that the user can cycle through.
- An access violation that did occur in SaveWindowToBitmap() on Windows 7 has been fixed.

#### ***CVMgmtSvc.exe***

- Added support for CameraSuite licenses on recent Automation Technology cameras.
- Added support for CodeMeter keys on ARM platforms.

#### **Delphi OCX Package**

- The Core3D Viewer OCX has been updated to include all properties and methods.

#### ***iCVCDriver.dll***

- A bug in the signature of the DODiscover() and DODiscoverW() functions has been fixed.

#### ***LogGUI.exe***

- Improved visualization on High-DPI displays.
- Logs may be saved and loaded as json files.

#### ***Player3D.exe***

- Improved visualization on High-DPI displays.
- Player3D will no longer crash when encountering a PLY file that cannot be loaded because the "faces" section is missing.

#### ***Visualization3D.dll***

- Improved visualization on High-DPI displays.

#### **GenICam**

For Common Vision Blox 2019 (13.02.xxx) the GenApi has been updated to version 3.1 for all supported platforms.

***CVGenApi.dll***

- Fixed string conversion in file up-/download from memory.
- Updated to link versus GenApi 3.1.

***CVUAL.dll***

- Modified to improve compatibility with U3V cameras from Dahua Technologies.
- Exclusive access to U3V devices is now supported.

***GenICam.vin***

- Fixed support for the CreateAutoIni flag in *GenICam.ini* that was broken in the 13.01.000 release.
- Enabled *GenICam.vin* loading without a stream channel for firmware updates.
- Updated to support chunk data with GEV 2.0 compatible cameras.
- Fixed exception handling for chunk data.
- Fixed to support for chunk data with U3V compatible cameras.
- Fixed device discovery issue.
- Fixed exception handling for chunk data.
- A reference count leak when working with attached chunk data has been fixed.

***GenICamBrowser.exe***

- Improved visualization on High-DPI displays.
- The GenICamBrowser has been modified to cooperate better with the Euresys frame grabber TL.
- GenICamBrowser now logs warnings etc. to the LogGUI.
- The GenICamBrowser is now capable of saving sequences of consecutive image files.

***GEVConfigManager.exe***

- Updated to support chunk data with GEV 2.0 compatible cameras.

***GEVFD.dll***

- Fixed rare issue with ExtID flags in GEV package.

***GEVSD.dll***

- Updated to support chunk data with GEV 2.0 compatible cameras.

- A race condition when closing the GenICam.vin from multiple different thread contexts has been fixed.

#### ***GEVTL.cti***

- Updated to support chunk data with GEV 2.0 compatible cameras.
- A race condition when closing the GenICam.vin from multiple different thread contexts has been fixed.

### **Foundation Package**

For release notes about the former stand-alone tools that are now part of the Foundation Package (Arithmetic, BayerToRGB, Edge, LightMeter, TextOut) please refer to the tool release notes.

#### ***CVFoundation.dll***

- CreateConstantThresholdImage() no longer returns a monochrome image when fed with an RGB image.
- The regression method in CalculateEllipseRegression() has been fixed to no longer produce implausible results.
- DivideImages() now returns a proper return value to identify division by zero issues.
- Some functions returned images where the red and the blue plane were swapped when fed with RGB images. This has been fixed.
- Arithmetic functions that accept two input images now yield correct results when fed with images that have differing memory layout.

#### ***iCVMetric.dll***

- AQS12CalculateExtrinsicMatrix() now returns the result as a double[3, 3] array in the extrinsic transformation.

#### ***OpticalFlow.dll***

- An unhandled exception in OptFlowDestroy() when working with block sizes < 14 has been fixed..

### **TeachBench**

#### **General**

- The Image Resizer percentage editor has been improved.
- A new image pool processor for mirroring images along the x or y axis has been added.
- The preview size of Image Pool tools has been modified to scale automatically with image size and available display size.

- The image pool may now be navigated using the up/down arrow keys.

#### **Minos Module**

- Model extents are no longer displayed with fractional numbers in the model editor.
- Instance overlays will now be made invisible while painting don't care regions.
- A potential trace error when removing training set instances has been fixed.

#### **Polimago Classification & Regression Module**

- A visual element has been added to the main display that indicates if the currently visible pool image is incompatible with the currently edited sample image list.
- An output of the processing time triggered by releasing the feature selection overlay over a pool image while a classifier is available has been added to the status line.
- It is now possible to generate heat map images that help diagnosing the behavior of a classification predictor on a given pool image.

#### **Polimago Search Module**

- It is now possible to add search results to the currently edited training database.
- The transfer of learning settings from a loaded classifier to the TeachBench settings menus has been fixed.
- It is now possible to generate heat map images that help diagnosing the behavior of a classification predictor on a given pool image.
- Don't care points are no longer available in the Polimago Search module (Polimago does not support don't care regions).
- Starting feature window is now generated based on the image size.

## Known Problems

### General

- The scanning functions implemented by the CVCIImg.dll (typically those functions that take a TArea struct as the area of interest) cannot work on pixel coordinates exceeding 32767 in either direction. This is because internally, a 32 bit based fixed point arithmetic approach is being used that dedicates the lowest 16 bits for the decimal places, leaving only enough room for up to 32767 integer positions.

### Foundation Package

- On the Foundation Package's FFilter Control, the property page "User Kernel" is currently not usable in Visual C++ projects.  
Trying to open this page in Visual Studio 2010 will emit an error, trying to open this page in older versions of Visual Studio may terminate the development environment. Only Visual C++ projects are affected by this - the property page opens correctly in C# and VB.Net projects.

### Installation

- When running any of the Common Vision Blox Setups on a Windows 7 Embedded x64 system that has neither Service Pack 1 nor KB2393802 installed the Setup will terminate after a few seconds without installing anything on the target system.  
Please make sure you have either Service Pack 1 or KB2393802 installed on the Windows 7 Embedded x64 system before trying to install Common Vision Blox.  
For your convenience, the KB2393802 update is located in the folder \Redist\Windows Updates of the Common Vision Blox DVD.
- On one occasion we have seen the SafeNet Sentinel Parallel Port dongle driver not working after installing the 32 bit version of Common Vision Blox on a 64 bit Windows. In such a case, manual configuration of the driver usually fixes the problem: Under C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel System Driver you can find a simple utility called SetupSysDriver.exe.  
Start it, then select "Configure Driver", then "Add" and generate a new entry with Bus Address and Bus Number incremented by 1 (relative to what is the highest entry in the list so far), set the Type to "Internal" and Port Type to "ECP", Ownership to "Auto" and Use to "yes" - this should make the Parallel Port dongle visible in the system.  
The 64 bit version of Common Vision Blox is of course unaffected by this because it does not support the SafeNet Sentinel dongles.

### License

- The SafeNet Sentinel dongles that have been used up until Common Vision Blox 10.02.000 are not usable with the x64 build of Common Vision Blox.  
Owners of a SafeNet dongle who also want to work with the x64 build of Common Vision Blox are encouraged to contact their distributor to get a quote for an upgrade to a WIBU dongle.

- When using a CodeMeter key with an ARM-based device, only one CodeMeter key can be used at a time (on the PC platform it is possible to connect multiple keys and pool their licenses). Use of node-locked licenses is not possible with ARM-based devices.

### Reminder: Filter Driver Requirements

This item is actually neither - strictly speaking - a known problem, nor it is new - it has been introduced in 13.01.000 already. However, given the significance of the matter it makes sense to add a short reminder for the benefit of those users who skipped version 13.01.xxx (Common Vision Blox 2018): The code signing certificate previously used by STEMMER IMAGING for signing the *siNetFilter.sys* had to be renewed in 2018. This has two consequences, one of which might require your attention:

1. The new code signing certificate of STEMMER IMAGING is an SHA2 certificate. This type of certificate is now required for signing kernel mode drivers for newer Windows builds. Older Windows builds, however, do *not* support SHA2 certificates properly. Windows 7 users will therefore need to update their system to Windows 7 Service Pack 1 before working with Common Vision Blox 13.01.xxx and higher.

On top of Service Pack 1, please make sure that the Security updates KB3035131 and KB3033929 are installed on your system. They are available for download directly from Microsoft:

	Win32	x64
KB3035131	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=46017">https://www.microsoft.com/en-us/download/details.aspx?id=46017</a>	<a href="https://www.microsoft.com/en-US/download/details.aspx?id=46009">https://www.microsoft.com/en-US/download/details.aspx?id=46009</a>
KB3033929	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=4607">https://www.microsoft.com/en-us/download/details.aspx?id=4607</a>	<a href="https://www.microsoft.com/en-US/download/details.aspx?id=46148">https://www.microsoft.com/en-US/download/details.aspx?id=46148</a>

2. Windows 10 requires drivers signed with code signing certificates issued *after* the release of Windows 10 to be signed with an Extended Validation (EV) signature. However these are not digested by Windows 7. Therefore the Common Vision Blox installer now installs two sets of files for the *siNetFilter.sys* - one for Windows 7 SP1 and one for Windows 10. The Common Vision Blox installer and the *CVBIntallsiNetFilter.bat* and *CVBUninstallsiNetFilter.bat* batch jobs automatically select the correct set. We strongly advise not to use these files with Windows versions other than the ones for which they were intended.

## File Versions

### Image Manager

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Image Manager are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
CVBase_v1_2.dll	1.2.15.388	1.2.15.388	1.215.388
CVBAvi.dll	3.3.1.888	3.3.1.888	N/A
CVCore.dll	1.0.1.174	1.0.1.174	1.1.174
CVCore3D.dll	1.24.2.386	1.24.2.386	1.2402.386
CVCDisp.dll	4.2.3.8	4.2.3.8	N/A
CVCDriver.dll	4.2.6.5	4.2.6.5	4.206.5
CVCErrror.dll	3.9.2.3	3.9.2.3	N/A
CVCFFile.dll	4.6.8.757	4.6.8.757	4.608.757
CVCIImg.dll	4.16.5.788	4.16.5.788	4.1605.788
CVCUtilities.dll	4.10.2.631	4.10.2.631	4.1002.631
CVCore3DViewer.ocx	1.2.3.149	1.2.3.149	N/A
CVDigIO.ocx	1.6.2.909	1.6.2.909	N/A
CVDisplay.ocx	3.2.5.1054	3.2.5.1054	N/A
CVGrabber.ocx	2.2.12.1075	2.2.12.1075	N/A
CVImage.ocx	1.10.2.1278	1.10.2.1278	N/A
CVMgmtSvc.exe	2.12.0.755	2.12.0.755	N/A
CVRingbuffer.ocx	1.2.8.1032	1.2.8.1032	N/A
CVSysTray.exe	2.6.10.7	2.6.10.7	N/A
iCVCDriver.dll	3.9.2.3	3.9.2.3	N/A
iCVCIImg.dll	3.9.2.3	3.9.2.3	N/A
iCVCPlugIn.dll	3.9.2.3	3.9.2.3	N/A
iCVCUtilities.dll	3.9.2.3	3.9.2.3	N/A

### Foundation Package

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Foundation Package are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
<b>Arithmetic.dll</b>	1.10.1.806	1.10.1.806	1.1001.806
<b>CVCDrawGraph.ocx</b>	1.6.3.791	1.6.3.791	N/A
<b>CVCEdge.dll</b>	2.6.1.621	2.6.1.621	2.601.621
<b>CVCLightMeter.ocx</b>	1.6.1.2177	1.6.1.2177	N/A
<b>CVEdge.ocx</b>	1.2.6.1955	1.2.6.1955	N/A
<b>CVFoundation.dll</b>	2.6.2.7	2.6.2.7	N/A
<b>DrawGraph.dll</b>	1.6.1.807	1.6.1.807	N/A
<b>etBayerToRGB.dll</b>	1.10.1.772	1.10.1.772	1.1001.772
<b>FArithmetic.ocx</b>	1.4.1.1938	1.4.1.1938	N/A
<b>FBlob.ocx</b>	1.6.1.2170	1.6.1.2170	N/A
<b>FColorSpace.ocx</b>	1.4.1.1938	1.4.1.1938	N/A
<b>FFilter.ocx</b>	1.4.1.1922	1.4.1.1922	N/A
<b>FLUT.ocx</b>	1.4.1.1949	1.4.1.1949	N/A
<b>FThresholding.ocx</b>	1.4.1.1892	1.4.1.1892	N/A
<b>iArithmetik.dll</b>	3.9.2.3	3.9.2.3	N/A
<b>iBayerToRGB.dll</b>	3.9.2.3	3.9.2.3	N/A
<b>iCVCEdge.dll</b>	3.9.2.3	3.9.2.3	N/A
<b>iCVCFoundation.dll</b>	3.9.2.3	3.9.2.3	N/A
<b>iLightMeter.dll</b>	3.9.2.3	3.9.2.3	N/A
<b>iTextOut.dll</b>	3.9.2.3	3.9.2.3	N/A
<b>LightMeter.dll</b>	2.6.1.783	2.6.1.783	2.601.783
<b>TextOut.dll</b>	3.2.2.219	3.2.2.219	3.202.219

### Management Console

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Management Console are:

(note that the Management Console is not available under Linux)

	Windows 32	Windows 64	Linux
<b>CVBManagementConsole.exe</b>	1.6.3.1	1.6.3.1	N/A
<b>CVBMMCCore.dll</b>	1.6.2.1	1.6.2.1	N/A
<b>CVBFileVersions.dll</b>	1.6.0.34	1.6.0.34	N/A
<b>CVBLicense.dll</b>	1.6.1.4	1.6.1.4	N/A
<b>CVBSettings.dll</b>	1.6.2.3	1.6.2.3	N/A
<b>GenICamBindings.dll</b>	2.6.5.2	2.6.5.2	N/A
<b>GenICamConfig.dll</b>	1.14.2.355	1.14.2.355	N/A

## GenICam

The file versions of the ActiveX controls, executables and DLLs currently belonging to the GenICam integration are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
<b>CVFactory.dll</b>	4.0.11.4	4.0.11.4	4.11.4
<b>CVGenApi.dll</b>	3.1.0.113	3.1.0.113	3.1.0
<b>CVGenApiGrid.dll</b>	2.2.1.374	2.2.1.374	N/A
<b>CVGenApiGrid.ocx</b>	2.2.0.324	2.2.0.324	N/A
<b>CVRegistry.cvb</b>	3.4.0.507	3.4.0.507	N/A
<b>CVSetup.dll</b>	2.2.0.1	2.2.0.1	N/A
<b>CVSetup.exe</b>	2.3.0.0	2.3.0.0	N/A
<b>CVUAL.dll</b>	1.13.3.452	1.13.3.452	1.1303.452
<b>GenICam.vin</b>	2.5.2.5	2.5.2.5	N/A
<b>GEVConfigManager.exe</b>	1.9.0.1396	1.9.0.1396	N/A
<b>GEVFD.dll</b>	2.4.0.0	2.4.0.0	N/A
<b>GEVFDXDiag.exe</b>	N/A	N/A	N/A
<b>GEVSD.dll</b>	2.14.1.489	2.14.1.489	2.1401.489
<b>GEVTL.cti</b>	1.19.0.3	1.19.0.3	N/A

CVUSBCTL.cti	N/A	N/A	N/A
iCVGenApi.dll	3.9.2.3	3.9.2.3	N/A
siNetFilter.sys	2.3.50.136	2.3.50.136	N/A
siGevSvc.exe	1.7.26.371	1.7.26.371	N/A
SILogSvc.exe	2.2.1.180	2.2.1.180	N/A
zlib1.dll	1.2.2.0	1.2.2.0	N/A

### Overlay Plugins

The file versions of the Overlay Plugins currently shipped are:

(note: Overlay Plugins are not available under Linux)

	Windows 32	Windows 64	Linux
CVCArcPlugIn.opi	1.4.1.857	1.4.1.857	N/A
CVCAreaPlugIn.opi	1.4.2.857	1.4.2.857	N/A
CVCBitmapPlugIn.opi	1.6.1.861	1.6.1.861	N/A
CVCCirclePlugIn.opi	2.6.1.860	2.6.1.860	N/A
CVCCrosshairPlugIn.opi	2.6.1.858	2.6.1.858	N/A
CVCFixBitmapPlugIn.opi	1.6.1.848	1.6.1.848	N/A
CVCFixCirclePlugIn.opi	2.6.1.845	2.6.1.845	N/A
CVCImgPlugIn.opi	1.6.1.1062	1.6.1.1062	N/A
CVCLinePlugIn.opi	2.6.1.844	2.6.1.844	N/A
CVCMultipleRotatedRectPlugIn.opi	1.4.1.845	1.4.1.845	N/A
CVCNamedCompassPlugIn.opi	1.2.3.853	1.2.3.853	N/A
CVCPixelListPlugIn.opi	1.4.1.850	1.4.1.850	N/A

<b>CVCPolyLinePlugIn.opi</b>	1.6.1.848	1.6.1.848	N/A
<b>CVCRectPlugIn.opi</b>	2.6.1.842	2.6.1.842	N/A
<b>CVCRotatedCrosshairPlugIn.opi</b>	2.4.1.846	2.4.1.846	N/A
<b>CVCRotatedRectPlugIn.opi</b>	1.6.1.846	1.6.1.846	N/A
<b>CVCSmartRectanglePlugIn.opi</b>	2.6.1.844	2.6.1.844	N/A
<b>CVCStaticTextOutPlugIn.opi</b>	1.6.1.843	1.6.1.843	N/A
<b>CVCTargetPlugIn.opi</b>	1.6.1.847	1.6.1.847	N/A
<b>CVCTextOutPlugIn.opi</b>	1.4.1.844	1.4.1.844	N/A

### CVB.Net Bindings

	Windows 32	Windows 64
<b>Stemmer.Cvb.Aux.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Barcode.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Extensions.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Forms.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Foundation.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Manto.dll</b>	1.80.7.556	N/A
<b>Stemmer.Cvb.Match3D.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Minos.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Movie2.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Polimago.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Sampledatabse.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.ShapeFinder.dll</b>	1.80.7.556	1.80.7.556

<b>Stemmer.Cvb.Spectral.dll</b>	1.80.7.556	1.80.7.556
<b>Stemmer.Cvb.Wpf.dll</b>	1.80.7.556	1.80.7.556

## TeachBench

The file versions of the files for TeachBench currently shipped are:

	<b>Windows 32</b>	<b>Windows 64</b>	<b>Linux</b>
<b>TeachBench.exe</b>	1.44.3.35	1.44.3.35	N/A
<b>TeachBench.Base.dll</b>	1.44.3.35	1.44.3.35	N/A
<b>TeachBench.ImageProcessors.Core.dll</b>	1.44.3.35	1.44.3.35	N/A
<b>TeachBench.ImageProcessors.Foundation.dll*</b>	1.44.3.35	1.44.3.35	N/A
<b>TeachBench.PolimagoCR.dll *</b>	1.44.3.35	1.44.3.35	N/A
<b>TeachBench.PolimagoSearch.dll *</b>	1.44.3.35	1.44.3.35	N/A
<b>TeachBench.Minos.dll*</b>	1.44.3.35	1.44.3.35	N/A
<b>Microsoft.Expression.Interaction.dll</b>	3.0.40218.0	3.0.40218.0	N/A
<b>Microsoft.Practices.Prism.Composition.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.Interactivity.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.MefExtensions.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.Mvvm.Desktop.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.Mvvm.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.PubSubEvents.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.SharedInterfaces.dll</b>	1.0.0.0	1.0.0.0	N/A

<b>Microsoft.Practices.ServiceLocation.dll</b>	1.2.0.0	1.2.0.0	N/A
<b>System.Windows.Controls.DataVisualization.Toolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>System.Windows.Controls.Layout.Toolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>System.Windows.Interactivity.dll</b>	3.0.40218.0	3.0.40218.0	N/A
<b>WPFToolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>Xceed.Wpf.Toolkit.dll</b>	3.5.0.0	3.5.0.0	N/A

\* file installed to the directory %CVB%\Applications\TeachBench

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### 1.1.2 Common Vision Blox 2018 (13.1)

Following are the Release Notes for **Common Vision Blox 2018 (13.1)**.

As the CVB CameraSuite is a subset of Common Vision Blox, this document is also valid for the **CVB CameraSuite 2018** (the main difference being the absence of the Foundation Package and tools and the absence of a dongle licensing option on the CVB CameraSuite 2018). The **library version** that will be used to identify Common Vision Blox 2018 and CVB CameraSuite 2018 in this document and in the installers is **13.01.xxx**.

#### What is New in Version 13.01.xxx

Important: Filter Driver Requirements

New Image Manager Functionality

New Foundation Package Components

New Tools and New Tool Builds

Target Platforms

Tool Availability

Available Installers

#### Supported Compilers, Operating Systems and Development Environments

Common Vision Blox for Windows

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#### Updating Existing Applications

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From Common Vision Blox 2011

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#### List of Changes

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## **Known Problems**

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[Overlay Plugins](#)

[TeachBench](#)

## What is New in Version 13.01.xxx

Common Vision Blox 13.01.xxx is a minor upgrade of Common Vision Blox that builds on the same architecture as the previous major release. It introduces a number of changes but also addresses issues encountered with the previous release.

### Important: Filter Driver Requirements

The code signing certificate previously used by STEMMER IMAGING for signing the *siNetFilter.sys* had to be renewed. This has two consequences, one of which might require your attention:

1. The new code signing certificate of STEMMER IMAGING is an SHA2 certificate. This type of certificate is now required for signing kernel mode drivers for newer Windows builds. Older Windows builds, however, do not support SHA2 certificates properly. Windows 7 users will therefore need to update their system to Windows 7 Service Pack 1 before working with Common Vision Blox 13.01.xxx.

On top of Service Pack 1, please make sure that the Security updates KB3035131 and KB3033929 are installed on your system. They are available for download directly from Microsoft:

	Win32	x64
KB3035131	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=46017">https://www.microsoft.com/en-us/download/details.aspx?id=46017</a>	<a href="https://www.microsoft.com/en-US/download/details.aspx?id=46009">https://www.microsoft.com/en-US/download/details.aspx?id=46009</a>
KB3033929	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=4607">https://www.microsoft.com/en-us/download/details.aspx?id=4607</a>	<a href="https://www.microsoft.com/en-US/download/details.aspx?id=46148">https://www.microsoft.com/en-US/download/details.aspx?id=46148</a>

2. Windows 10 requires drivers signed with code signing certificates issued *after* the release of Windows 10 to be signed with an Extended Validation (EV) signature. However these are not digested by Windows 7. Therefore the Common Vision Blox installer now installs two sets of files for the *siNetFilter.sys* - one for Windows 7 SP1 and one for Windows 10. The Common Vision Blox installer and the *CVBIntallsiNetFilter.bat* and *CVBUninstallsiNetFilter.bat* batch jobs automatically select the correct set. We strongly advise not to use these files with Windows versions other than the ones for which they were intended.

### New Image Manager Functionality

In Common Vision Blox 13.01.xxx the Image Manager has been given new functionality which forms the basis of the renewed 3D support in Common Vision Blox:

- The *CVCORE.dll* extends the memory formats of images that Common Vision Blox is capable of digesting beyond the previously 2D-centered limitations. It allows for a new *CVCOMPOSITE* image container to be used and handled which may contain almost all 2D and 3D data layouts defined in the GenICam Pixel Format Naming Convention (PFNC).

- The *CVCore3D.dll* builds upon the *CVCore.dll*, adapting its capabilities to handling 3D point clouds. It supports basic operations on point clouds as well as saving and loading them in different formats.
- The *CVCore3DViewer.ocx* is a new ActiveX control for 3D visualization, providing a possibility to interactively display the objects generated by and handled with the *CVCore.dll*.
- The newly added 3D Player (*Player3D.exe*) provides an easy and sophisticated way for visualizing 3D data for non-programmers.

### New Foundation Package Components

Three new components have been added to the Foundation Package:

- The *CVMetric.dll* which includes functionality for generating and handling calibration data. Currently the *CVMetric.dll* exposes only functions that work in the 3D space domain, but the plan is to include methods for 2D and other calibrations in this library as well.
- The *OpticalFlow.dll*, previously (before the 13.00.000 release) available as an individual tool returns as a Foundation Package component. Use this highly optimized tool to calculate dense optical flow vector fields to analyze motion data.
- *ZXBarcode.dll*. Based on *zxing-cpp*, the C++ version of the popular *zxing* barcode library, the *ZXBarcode.dll* provides a low-end entry to barcode reading with Common Vision Blox. For challenging requirements we continue to recommend having a look at the CVC Barcode library!

All these new components require a Common Vision Blox Foundation license to operate without restrictions. Customers who have already purchased such a license may of course continue to use their dongles and get access to these new components without any upgrade fees.

### New Tools and Tool Builds

A renewed build of the Match3D tool has been added to the range of utilities available with Common Vision Blox. Match3D is capable of matching two point clouds, yielding the transformation required to map one to the other under a best-match assumption. This information can subsequently be used for determining correctness of orientation or - in combination with the functionality exposed by the new *CVCore3D.dll* - to build a displacement map that indicates the differences between the two matched objects.

In an effort to further increase the overlap between the different platform builds of Common Vision Blox the following library builds have been added to all the currently supported Linux platforms:

- Arithmetic (*libArithmetic.so*)
- Edge (*libCVCEdge.so*)
- BayerToRGB (*libetBayerToRGB.so*)
- LightMeter (*libLightMeter.so*)
- TextOut (*libTextOut.so*)

Additionally, the following previously mentioned tools are also available on the supported Linux platforms:

- *CVMetric* (*libCVMetric.so*)

- CVMatch3D (libCVMatch3D.so)

For both, Windows and Linux, a new program (LicenseManager.exe) has been added that takes over the license administration part that was previously located in the Management Console's Licensing module. This module will continue to be available in 13.01.xxx but will be removed in one of the next versions of Common Vision Blox.

### Target Platforms

Common Vision Blox has been tested and is currently supported on the following combinations of operating systems and hardware platforms:

	x86/i686	x64/x64_64	armv7l (hf)	aarch64
<b>Windows 7 SP1 and up</b>	X	X		
<b>Ubuntu 16.04</b>	X	X	X	X

If you are interested in getting support for Common Vision Blox for combinations of operating systems and hardware platforms not listed here please contact your local distributor.

### Tool Availability

On the Windows platform, most tools are available for both architectures (x86 and x64) - only CVB Color and CVB Manto are restricted to the 32 bit version.

For Linux (32 and 64 bit) only the Image Manager (CVB CameraSuite), Minos, ShapeFinder and GEVServer are currently available.

	Windows (32 bit)	Windows (64 bit)	Linux (all currently supported platforms)
Image Manager & GenICam	X	X	X
Foundation Package (CVFoundation.dll)	X	X*	
Arithmetic	X	X*	X
Barcode	X	X	
BayerToRGB	X	X	X
Color	X		
CVC Blob	X	X	X

Edge	X	X	X
GEVServer	X	X	X
GPUprocessing	X	X*	
LightMeter	X	X	X
Manto	X		
Minos	X	X	X
Movie	X	X*	
Polimago	X	X	
ShapeFinder	X	X	X
TextOut	X	X	X

\* module-specific restrictions may apply; see release notes for details

### Available Installers

Since Common Vision Blox 13.00.000 the installers for Common Vision Blox do **no longer ship on a DVD**.

Instead, all installation packages as well as images for different embedded platforms are available for download from <http://www.commonvisionblox.com/en/cvb-download/> or on the Common Vision Blox User Forum's download page (<https://forum.commonvisionblox.com/c/downloads>).

Currently, the following items are available for download:

#### Windows

The downloads for the **latest Common Vision Blox builds** for Windows are available here: <https://www.commonvisionblox.com/en/download-cvb-2017-windows-32-bit-and-64-bit/>.

Note that the 32 bit version of Common Vision Blox may also be installed and used on 64 bit versions of Windows.

This page not only give access to the up-to-date installers but also contains

- all the **latest Video Interface Drivers** that are available for the 32 and 64 bit Windows builds of Common Vision Blox
- the **adapters for Cognex Vision Pro and IPD Sherlock**
- the **runtime-only installers** of Common Vision Blox

The size of the installers and of the installed product differs between installer flavors as well as between system architectures and operating systems. The available installer flavors on Windows are:

	Installer
A	Common Vision Blox CameraSuite Runtime 13.01.xxx

B	Common Vision Blox CameraSuite 13.01.xxx
C	Common Vision Blox Runtime 13.01.xxx
D	Common Vision Blox 13.01.xxx

- Flavors B and D come with developer resources (Tutorials, reference documentation, header files) and are generally intended for development systems.
- Flavors A and C contain files needed during runtime only and are therefore smaller than B and D.  
They are ideally suited for deployment in a system to be shipped to the factory floor as they do not burden the system they are installed on with things that are only of interest for developers.
- Flavors A and B are CameraSuite installers, which means they will install the Image Manager plus GenICam (i.e. GigE Vision and USB3 Vision) support.  
They are intended for those customers who want to merely use Common Vision Blox as a versatile and robust image acquisition SDK. Common Vision Blox CameraSuite may be used **free of charge with any GigE Vision or USB3 Vision camera bought from STEMMER IMAGING**.
- Flavors C and D contain the full set of tools available for the respective target platform and are the ones to be used while developing and/or deploying an application that utilizes the powerful algorithms in Common Vision Blox.

The installer size ranges from about 100 MB (CameraSuite Runtime Setup) to about 510 MB (Full Common Vision Blox Setup).

This includes all the required runtime files (e.g. the .Net runtimes and Visual C++ runtimes).

Keep in mind that during setup the installation requires a lot more space than the sum of the installer's size and the size of the installed files: The installer package is cached in the %ProgramData%\Downloaded Installations folder for repair/modification setups that may be required later on, and it is temporarily copied to the %temp% folder for execution of the actual setup. Taking this into account and adding the fact, that the files in the installer are typically compressed with a compression ratio of about 2 to 3, one can estimate the disc space requirements during installation to be about 4 to 5 times the size of the installer itself.

**Hint for users of Windows 8 and 10:** For Windows 8 and higher, the **.Net framework 2.0 is by default no longer part of the operating system's installation routine**.

As Microsoft no longer offers a downloadable installer package for the .Net framework 2.0 for Windows 8 and higher, it is not possible for the Common Vision Blox setup to install the .Net framework 2.0 on those operating systems. The components in Common Vision Blox (tutorials, Management Console) have therefore been **switched to the .Net framework 4.0**, but when an application or component that still uses the .Net framework 2.0 is started on Windows 8 or 10 for the first time, the operating system will want to automatically download and install the required framework version (if this has not happened yet). Of course an internet connection is required for this step.

See [here](#) for details. If your code is linked against the .Net framework 2.0 and you plan to deploy your Windows 8 or higher based system to a location (factory) where it has no internet connection please make sure to trigger the installation of the .Net framework before shipping your system.

## **Linux Versions**

Download links for the installation packages for the supported Linux versions for PC as well as the ARM-based platforms are available on

<https://www.commonvisionblox.com/en/download-cvb-2017-linux/>

On top of that, several system images for selected embedded systems are available for download as well as a number of application notes.

## Supported Compilers and Operating Systems and Development Environments

### Common Vision Blox for Windows

	32 bit	64 bit
Build Platform	The Image Manager and most of the tools for the 32 bit Windows platform have been built using Microsoft Visual C++ 14. The pattern recognition tools Manto and Polimago have been built using Delphi XE7.	The Image Manager and all tools available on the 64 bit Windows platform have been built using Microsoft Visual C++ 10. The PolimagoLib.dll has been built using Delphi XE7.
Supported Development Environments and Compilers	Visual C++ (9 and up) C# VB.Net (.Net Framework 2.0 and up) Delphi (versions 6, 7, 8, XE2 and up)	Visual C++ (9 and up) C# VB.Net (.Net Framework 2.0 and up) Delphi XE2 and up
Supported Operating Systems	The 32 bit version of Common Vision Blox was tested under Windows 7 SP 1, and Windows 10. It is usable and officially supported to run on the x64 versions of Windows starting with Windows 7, however customers using the 32 bit version of Common Vision Blox may experience compatibility limitations with the Common Vision Blox acquisition drivers as not all manufacturers support the Windows on Windows 64 compatibility layer. If in doubt, please refer to your driver's release notes for details.	The 64 bit Windows version of Common Vision Blox was tested under Windows 7 SP 1x64, and Windows 10x64. It also generally runs on the Embedded versions of Windows x64 (for best results we suggest building your Windows Embedded image based on the Application Compatibility Template). Note that the Update KB2393802 must be installed on a Windows 7 Embedded x64 system - otherwise the installer will not work properly. Systems with Windows 7 Embedded x64 SP1 already have that update. If needed, the KB2393802 update may be downloaded directly from Microsoft.

All required runtime files are automatically installed by the Common Vision Blox setup.

**Users of GPUprocessing** should verify that their machine has DirectX 9.0c (October 2005) or later installed.

If this particular version is missing on a target machine, please download and install it from <https://www.microsoft.com/en-US/download/details.aspx?id=34429>.

**Hints for Visual Studio users:** The tutorial projects and solution files installed by Common Vision Blox cover the Visual Studio versions up to Visual Studio 2010.

Users of Visual Studio 2012 and higher please use the Visual Studio 2010 solutions when editing and/or building the tutorial programs.

Visual Studio 2012 and higher will automatically convert the project and solution files as necessary when opening Visual Studio 2010 files - a mechanism we have so far found to work without any problems. When experiencing problems with upgrading the Visual Studio 2010 solutions please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

Please also note that starting with Visual Studio 2013, the Visual Studio installer no longer brings along the MBCS build of the MFC library.

This causes problems when trying to build those Visual C++ tutorials of Common Vision Blox that still are using the MBCS version of MFC.

Users who want to build those tutorials themselves are advised to first download and install the MBCS-version of MFC from Microsoft

(<http://www.microsoft.com/en-us/download/details.aspx?id=40770>).

**Hints for Delphi users:** The tutorial projects and solution files installed by Common Vision Blox are **based on Delphi XE2**.

Users of other Delphi XE3 and higher please use the Delphi XE2 project files when editing and/or building the tutorial programs.

Delphi XE3 and higher will convert the project files as necessary when opening Delphi XE2 files - a mechanism we have so far found to work without any problems.

When experiencing problems with upgrading the Delphi XE2 projects please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

## Common Vision Blox for Linux

The Image Manager and all available tools for the 32 and 64 bit Ubuntu 16.04 platform have been built using the GNU Compiler Collection 5.4. This compiler is also the compiler that is supported by Common Vision Blox on the Linux platform.

## Updating Existing Applications

### From Common Vision Blox 2017

Upgrading an application from Common Vision Blox 2017 (13.00.xxx) to Common Vision Blox 2018 (13.01.xxx) **will not require any changes to the application.**

Binaries compiled versus that version of Common Vision Blox will continue to run with Common Vision Blox 13.01.xxx.

### From Common Vision Blox 2016

Upgrading an application from Common Vision Blox 2016 (12.00.xxx or 12.01.xxx) to Common Vision Blox 2018 (13.01.xxx) **will not require any changes to the application.**

Binaries compiled versus those versions of Common Vision Blox will continue to run with Common Vision Blox 13.01.xxx - unless they have been using one of the tools discontinued in Common Vision Blox 2017.

### From Common Vision Blox 2011

Updating applications based on Common Vision Blox 2011 SP2 (11.02.xxx) to Common Vision Blox 2018 will only require changes if the Barcode OCX is involved (see below) as the API did not introduce any breaking changes.

Common Vision Blox 2018 will continue to install the .Net wrapper DLLs of the different Common Vision Blox 2011 versions in the Global Assembly Cache so that applications built with any of the .Net languages will still be able to find their dependencies.

Applications using the Barcode OCX should be updated as the property set of the ActiveX control has changed which may require a regeneration of the property bag used in the application even if you do not want to make use of the new properties.

Applications built with Common Vision Blox 11.00.xxx or 11.01.xxx should also be adjusted to the updated CVDisplay.ocx introduced in Common Vision Blox 11.02.xxx for the same reason.

#### **To update your project to the new ActiveX control please...**

- copy the up-to-date C++ ActiveX wrapper files (cvdisplayctrl.h/.cpp; cvbarcodectrl.h/.cpp) into your project if you are using Visual C++.
- modify the project file to use the newer ActiveX control by modifying the respective COMReference entry in your \*.csproj or \*.vbproj file if you are using C# or VB.Net.
- update the ActiveX control toolbar to the latest package version found in %CVB%\Lib\Delphi or %CVB%\Lib\C if you are using an Embarcadero product.
- open your development environment and toggle one of the control's properties, then save the changes to update the environment's property bag for that control.

### From Older Versions of Common Vision Blox

If you are planning on porting applications built with Common Vision Blox 10.x or even Common Vision Blox 9.x please also read through the porting sections in the release notes of Common Vision Blox 2011 and Common Vision Blox 10.

## List of Changes

The following components have changed in Common Vision Blox 13.01.xxx:

### Installers

- Some of the Borland C++ Builder lib-files that ship with the 32 Bit installers were outdated and have been updated in Common Vision Blox 13.01.xxx.

### Image Manager

#### CVCDisp.dll

- Status line output for floating-point-valued images has been fixed.
- The proper behavior when setting an image handle of null was reintroduced (broken in 13.00.xxx).

#### CVCDriver.dll

- A malformed return value in STTrigger has been fixed.
- The constant definitions in iCVCDriver.h and iCVCDriver.pas have been updated
- Windows and Linux build now use the same default timeout (10000 ms).
- A stack overflow due to a recursion in DODiscover with a nullptr argument has been fixed.

#### CVCFFile.dll

- An error that did lead to access violations when saving monochrome PNG files has been fixed.
- SetTimeout may no longer pass a negative timeout to an EMU file.

#### CVCIImg.dll

- CalculateWhiteBalance now properly takes into account the coordinate system.
- A reference count leak in IsPixels has been fixed.
- SortPixelsByPosition now also accepts pixel lists with dimension 2.

#### CVCUtilities.dll

- Strings returned by GetFileVersion/GetFileVersionEx are now properly zero-terminated.

#### CVDDisplay.ocx

- The method SaveImageByDialog no longer shows read-only file types in the file type filter.

- A new method, `AddOverlayObjectNET2`, was introduced to address a pointer aliasing problem in `AddOverlayObjectNET` in 64 bit processes.

## **CVMgmtSvc.exe**

- Date/time conversion in remote time zones no longer throws an exception that leads to a valid license being considered expired.

## **iCVCIImg.dll**

- The signature of `CopyImageRect` has been fixed.

## **GenICam**

### **CVFactory.dll**

- A crash that occurred when trying to open a device that is already in use with Device Discovery was fixed.

### **GenICam.vin**

- Mono10 packed format conversion has been fixed.
- The BiColorRGBG8 pixel format output by the DALSA Linea cameras is now properly handled.
- The GenICam.vin's ring buffer now handles 30 Bit RGB data properly.
- Ring buffer handling is now correctly reinitialized when calling `Snap()`.

### **GenICamBrowser**

- GenICamBrowser now works properly with cameras that do not expose an `AcquisitionStart` feature.
- TL discovery now happens faster.
- Image display has been corrected for the ARM builds.
- GenICamBrowser now handles Mono64 images correctly.

### **GEVTL.cti/USBTL.cti**

- Crash when loading on systems with IPD Sherlock install has been fixed.

### **siNetFilter.sys**

- A user-space locking error that could lead to a blue screen has been fixed.
- GEV 2.0 extended chunk payloads in conjunction with TurboDrive 2.0 are now handled properly.
- Packet IDs that are higher than expected are now handled gracefully.
- siNetFilter.sys now cooperates with Symantec Endpoint Protection.

## Foundation Package

For release notes about the tools that are part of the Foundation Package (Arithmetic, BayerToRGB, Edge, LightMeter, TextOut) please refer to the tool release notes.

### CVFoundation.dll

- In some 13.00.xxx builds the CVFoundation.dll for 64 bit has been compiled with AVX support, causing an illegal instruction on some older CPUs that do not support AVX.
- A name clash (FilterLaplace) between the *CVFoundation.dll* and the *MinosCVC.dll* has been fixed. Use FilterLaplace2 from now on.
- FBlobCreate now handles null images gracefully (was broken in Common Vision Blox 12.xx.xxx).
- RotateImage no longer returns an image with uninitialized background when working on RGB images.

## TeachBench

### General

- A crash when playing a video that runs through the "Crop" operation has been fixed.
- Image update behavior when manipulating processor stacks has been improved.

### Minos Module

- The model frame are now transparent for don't care region painting.
- Minos Module now shows a warning if opened while there seems to be no Minos license available.

### Polimago Classification & Regression Module

- Polimago Classification & Regression Module now shows a warning if opened while there seems to be no Minos license available.

### Polimago Search Module

- Snap-in radius for instance training may now be reduced to zero to effectively switch that feature off.
- Scale and Rotation limits for loaded Polimago search classifiers are now displayed properly.
- Polimago Search Module now shows a warning if opened while there seems to be no Minos license available.

## Known Problems

### General

- We have found two cases where the Common Vision Blox Display was producing garbage output on a computer with Windows 7 (32 bit) and an nVidia graphics card installed.  
If you experience the same, please open the Common Vision Blox Management Console, go to the "General Settings" dialog and switch the DirectDraw version to be used to "Direct3D 9 with Alpha Blending" - this will fix the display (and might in some cases even increase overall display performance).
- The scanning functions implemented by the CVCIImg.dll (typically those functions that take a TArea struct as the area of interest) cannot work on pixel coordinates exceeding 32767 in either direction. This is because internally, a 32 bit based fix point arithmetic approach is being used that dedicates the lowest 16 bits for the decimal places, leaving only enough room for up to 32767 integer positions.

### Foundation Package

- On the Foundation Package's FFilter Control, the property page "User Kernel" is currently not usable in Visual C++ projects.  
Trying to open this page in Visual Studio 2010 will emit an error, trying to open this page in older versions of Visual Studio may terminate the development environment.  
Only Visual C++ projects are affected by the - the property page opens correctly in C# and VB.Net projects.

### Installation

- When running any of the Common Vision Blox Setups on a Windows 7 Embedded x64 system that has neither Service Pack 1 nor KB2393802 installed the Setup will terminate after a few seconds without installing anything on the target system.  
Please make sure you have either Service Pack 1 or KB2393802 installed on the Windows 7 Embedded x64 system before trying to install Common Vision Blox.  
For your convenience, the KB2393802 update is located in the folder \Redist\Windows Updates of the Common Vision Blox DVD.
- On one occasion we have seen the SafeNet Sentinel Parallel Port dongle driver not working after installing the 32 bit version of Common Vision Blox on a 64 bit Windows.  
In such a case, manual configuration of the driver usually fixes the problem: Under C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel System Driver you can find a simple utility called SetupSysDriver.exe.  
Start it, then select "Configure Driver", then "Add" and generate a new entry with Bus Address and Bus Number incremented by 1 (relative to what is the highest entry in the list so far), set the Type to "Internal" and Port Type to "ECP", Ownership to "Auto" and Use to "yes" - this should make the Parallel Port dongle visible in the system.

The 64 bit version of Common Vision Blox is of course unaffected by this because it does not support the SafeNet Sentinel dongles.

## License

- The SafeNet Sentinel dongles that have been used up until Common Vision Blox 10.02.000 are not usable with the x64 build of Common Vision Blox.

Owners of a SafeNet dongle who also want to work with the x64 build of Common Vision Blox are encouraged to contact their distributor to get a quote for an upgrade to a WIBU dongle.

## File Versions

### Image Manager

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Image Manager are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
CVBase_v1_2.dll	1.2.14.306	1.2.14.306	1.214.306
CVBAvi.dll	3.2.4.821	3.2.4.821	N/A
CVCore.dll			
CVCore3D.dll			
CVCDisp.dll	4.0.12.828	4.0.12.828	N/A
CVCDriver.dll	4.1.2.640	4.1.2.640	4.102.640
CVCErrror.dll	2.2.0.29	2.2.0.29	N/A
CVCFFile.dll	4.6.6.634	4.6.6.634	4.606.634
CVCIimg.dll	4.16.2.635	4.16.2.635	4.1602.635
CVCUilities.dll	4.10.1.534	4.10.1.534	4.1000.533
CVCore3DViewer.ocx	1.0.4.34	1.0.4.34	N/A
CVDigIO.ocx	1.6.1.813	1.6.1.813	N/A
CVDisplay.ocx	3.2.1.920	3.2.1.920	N/A
CVGrabber.ocx	2.2.10.981	2.2.10.981	N/A
CVImage.ocx	1.10.0.1087	1.10.0.1087	N/A
CVLinescan.ocx	1.4.7.944	1.4.7.944	N/A
CVMgmtSvc.exe	2.9.4.667	2.9.4.667	N/A
CVRingbuffer.ocx	1.2.7.937	1.2.7.937	N/A
CVSysTray.exe	2.6.4.2959	2.6.4.2959	N/A
Gear32sd.dll	6.4.7.7	6.4.7.7	N/A
iCVCDriver.dll	2.10.0.1029	2.10.0.1029	N/A
iCVCIimg.dll	2.16.0.472	2.16.0.472	N/A

iCVCPlugIn.dll	3.4.0.1025	3.4.0.1025	N/A
iCVCUtilities.dll	2.6.0.706	2.6.0.706	N/A

### Foundation Package

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Foundation Package are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
Arithmetic.dll	1.10.0.737	1.10.0.737	1.1000.737
CVCDrawGraph.ocx	1.6.2.744	1.6.2.744	N/A
CVCEdge.dll	2.6.0.539	2.6.0.539	2.600.539
CVCLightMeter.ocx	1.6.0.1965	1.6.0.1965	N/A
CVEdge.ocx	1.2.5.1745	1.2.5.1745	N/A
CVFoundation.dll	2.4.3.948	2.4.3.948	N/A
DrawGraph.dll	1.6.0.764	1.6.0.764	N/A
etBayerToRGB.dll	1.10.0.700	1.10.0.700	1.1000.700
FArithmetic.ocx	1.4.0.1710	1.4.0.1710	N/A
FBlob.ocx	1.6.0.1879	1.6.0.1879	N/A
FColorSpace.ocx	1.4.0.1708	1.4.0.1708	N/A
FFilter.ocx	1.4.0.1692	1.4.0.1692	N/A
FLUT.ocx	1.4.0.1720	1.4.0.1720	N/A
FThresholding.ocx	1.4.0.1669	1.4.0.1669	N/A
iArithmetik.dll	2.2.1.845	2.2.1.845	N/A
iBayerToRGB.dll	2.2.1.757	2.2.1.757	N/A
iCVCEdge.dll	2.2.1.761	2.2.1.761	N/A
iCVCFoundation.dll	2.18.1.768	2.18.1.768	N/A
iLightMeter.dll	2.2.1.816	2.2.1.816	N/A
iTextOut.dll	2.4.0.530	2.4.0.530	N/A
LightMeter.dll	2.6.0.717	2.6.0.717	2.600.717
TextOut.dll	3.2.1.144	3.2.1.144	3.201.144

### Management Console

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Management Console are:

(note that the Management Console is not available under Linux)

	Windows 32	Windows 64	Linux
<b>CVBManagementConsole.exe</b>	1.6.2.186	1.6.2.186	N/A
<b>CVBMMCCore.dll</b>	1.6.1.26	1.6.1.26	N/A
<b>CVBFileVersions.dll</b>	1.6.0.33	1.6.0.33	N/A
<b>CVBLicense.dll</b>	1.4.1.265	1.4.1.265	N/A
<b>CVBSettings.dll</b>	1.6.1.36	1.6.1.36	N/A
<b>LicWizardBase.dll</b>	2.3.5.440	2.3.5.440	N/A
<b>GenICamBindings.dll</b>	2.6.2.50	2.6.2.50	N/A
<b>GenICamConfig.dll</b>	1.14.2.354	1.14.2.354	N/A

### GenICam

The file versions of the ActiveX controls, executables and DLLs currently belonging to the GenICam integration are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
<b>CVFactory.dll</b>	4.0.6.717	4.0.6.717	4.6.717
<b>CVGenApi.dll</b>	3.0.1.110	3.0.1.110	3.1.110
<b>CVGenApiGrid.dll</b>	2.0.0.162	2.0.0.162	N/A
<b>CVGenApiGrid.ocx</b>	2.2.0.269	2.2.0.269	N/A
<b>CVRegistry.cvb</b>	3.2.1.387	3.2.1.387	N/A
<b>CVSetup.dll</b>	2.2.0.1	2.2.0.1	N/A
<b>CVSetup.exe</b>	2.3.0.0	2.3.0.0	N/A
<b>CVUAL.dll</b>	1.11.11.392	1.11.11.392	1.1111.392
<b>GenICam.vin</b>	2.4.9.1087	2.4.9.1087	N/A
<b>GEVConfigManager.exe</b>	1.6.0.0	1.6.0.0	N/A

<b>GEVFD.dll</b>	2.3.50.135	2.3.50.135	N/A
<b>GEVFDXDiag.exe</b>	2.3.50.135	2.3.50.135	N/A
<b>GEVSD.dll</b>	2.11.0.451	2.11.0.451	2.1100.451
<b>GEVTL.cti</b>	1.17.0.459	1.17.0.459	N/A
<b>CVUSBCTL.cti</b>	1.2.3.509	1.2.3.509	1.203.509
<b>iCVGenApi.dll</b>	2.8.0.457	2.8.0.457	N/A
<b>siNetFilter.sys</b>	2.3.50.136	2.3.50.136	N/A
<b>siGevSvc.exe</b>	1.7.25.336	1.7.25.336	1.7.25.336
<b>SILogSvc.exe</b>	2.2.0.150	2.2.0.150	2.2.0.150
<b>zlib1.dll</b>	1.2.2.0	1.2.2.0	N/A

### Overlay Plugins

The file versions of the Overlay Plugins currently shipped are:

(note: Overlay Plugins are not available under Linux)

	<b>Windows 32</b>	<b>Windows 64</b>	<b>Linux</b>
<b>CVCArcPlugIn.opi</b>	1.4.0.766	1.4.0.766	N/A
<b>CVCAreaPlugIn.opi</b>	1.4.1.766	1.4.1.766	N/A
<b>CVCBitmapPlugIn.opi</b>	1.6.0.770	1.6.0.770	N/A
<b>CVCCirclePlugIn.opi</b>	2.6.0.769	2.6.0.769	N/A
<b>CVCCrosshairPlugIn.opi</b>	2.6.0.770	2.6.0.770	N/A
<b>CVCFixBitmapPlugIn.opi</b>	1.6.0.760	1.6.0.760	N/A
<b>CVCFixCirclePlugIn.opi</b>	2.6.0.757	2.6.0.757	N/A
<b>CVCImpPlugIn.opi</b>	1.6.0.974	1.6.0.974	N/A
<b>CVCLinePlugIn.opi</b>	2.6.0.756	2.6.0.756	N/A
<b>CVCMultipleRotatedRectPlugIn.opi</b>	1.4.0.757	1.4.0.757	N/A
<b>CVCNamedCompassPlugIn.opi</b>	1.2.2.764	1.2.2.764	N/A

<b>CVCPixelListPlugIn.opi</b>	1.4.0.0	1.4.0.0	N/A
<b>CVCPolyLinePlugIn.opi</b>	1.6.0.755	1.6.0.755	N/A
<b>CVCRectPlugIn.opi</b>	2.4.1.754	2.4.1.754	N/A
<b>CVCRotatedCrosshairPlugIn.opi</b>	2.2.0.757	2.2.0.757	N/A
<b>CVCRotatedRectPlugIn.opi</b>	1.6.0.758	1.6.0.758	N/A
<b>CVCSmartRectanglePlugIn.opi</b>	2.6.0.756	2.6.0.756	N/A
<b>CVCStaticTextOutPlugIn.opi</b>	1.6.0.755	1.6.0.755	N/A
<b>CVCTargetPlugIn.opi</b>	1.6.0.758	1.6.0.758	N/A
<b>CVCTextOutPlugIn.opi</b>	1.4.0.756	1.4.0.756	N/A

## TeachBench

The file versions of the files for TeachBench currently shipped are:

	<b>Windows 32</b>	<b>Windows 64</b>	<b>Linux</b>
<b>TeachBench.exe</b>	1.26.1.798	1.26.1.798	N/A
<b>TeachBench.Base.dll</b>	1.22.0.785	1.22.0.785	N/A
<b>TeachBench.ImageProcessors.Core.dll</b>	1.6.2.785	1.6.2.785	N/A
<b>TeachBench.ImageProcessors.Foundation.dll*</b>	1.6.1.785	1.6.1.785	N/A
<b>TeachBench.PolimagoCR.dll *</b>	1.24.0.785	1.24.0.785	N/A
<b>TeachBench.PolimagoSearch.dll *</b>	1.24.0.785	1.24.0.785	N/A
<b>TeachBench.Minos.dll*</b>	1.24.0.785	1.24.0.785	N/A

<b>Stemmer.Cvb.Async.dll **</b>	1.6.0.0	1.6.0.0	N/A
<b>Stemmer.Cvb.dll **</b>	1.26.0.785	1.26.0.785	N/A
<b>Stemmer.Cvb.Foundation.dll **</b>	1.10.0.785	1.10.0.785	N/A
<b>Stemmer.Cvb.Minos.dll **</b>	1.14.0.785	1.14.0.785	N/A
<b>Stemmer.Cvb.Polimago.dll **</b>	1.14.2.785	1.14.2.785	N/A
<b>Stemmer.Cvb.Sampledatabase.dll **</b>	1.8.0.785	1.8.0.785	N/A
<b>Stemmer.Cvb.Wpf.dll **</b>	1.16.2.794	1.16.2.794	N/A
<b>Microsoft.Expression.Interaction.dll</b>	3.0.40218.0	3.0.40218.0	N/A
<b>Microsoft.Practices.Prism.Composition.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.Interactivity.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.MefExtensions.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.Mvvm.Desktop.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.Mvvm.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.PubSubEvents.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.SharedInterfaces.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.ServiceLocation.dll</b>	1.2.0.0	1.2.0.0	N/A
<b>System.Windows.Controls.DataVisualization.Toolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>System.Windows.Controls.Layout.Toolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>System.Windows.Interactivity.dll</b>	3.5.50211.1	3.5.50211.1	N/A

<b>WPFToolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>Xceed.Wpf.Toolkit.dll</b>	2.5.0.0	2.5.0.0	N/A

\* file installed to the directory %CVB%\Applications\TeachBench

\*\* file installed to the global assembly cache

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### 1.1.3 Common Vision Blox 2017 (13.0)

Following are the Release Notes for **Common Vision Blox 2017 (13.0)**.

As the CVB CameraSuite is a subset of Common Vision Blox, this document is also valid for the **CVB CameraSuite 2017** (the main difference being the absence of the Foundation Package and tools and the absence of a dongle licensing option on the CVB CameraSuite 2017).

The **library version** that will be used to identify Common Vision Blox 2017 and CVB CameraSuite 2017 in this document and in the installers is **13.00.xxx**

#### What is New in Version 13.00.xxx

Device Query Functionality and Support For Non-Streaming Devices

Unicode Support

New Logging Infrastructure

New Tool Builds

New Target Platforms

Tool Availability

Available Installers

#### Supported Compilers, Operating Systems and Development Environments

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From Common Vision Blox 2016

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#### List of Changes

Installers

Image Manager

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## **Known Problems**

## **File versions**

Image Manager

Foundation Package

Management Console

GenICam

Overlay Plugins

TeachBench

## What is New in Version 13.00.xxx

Common Vision Blox 13.00.xxx is a major upgrade of Common Vision Blox that introduces a number of changes but also addresses issues encountered with the previous release.

### Device Query Functionality and Support For Non-Streaming Devices

Starting with Common Vision Blox 13.00.000 it will be possible to **query the presence/absence of devices and to open a device directly** (as opposed to generating an \*.ini file first, then loading the \*.vin driver and finally switching to the desired device).

Currently this feature is limited to devices served via the GenICam.vin driver but the concept may later on be expanded to other drivers.

Through this new approach it will now also be possible to open and use devices that do not provide an image data stream like e.g. a GenICam-enabled lighting controller.

### Unicode Support

Unicode support has been introduced in all parts of Common Vision Blox except the CVC Color tool, the CVC Barcode tool, the GigE Vision Server tool and the Manto tool.

Unicode support not only means that it will now be possible to load/save image, classifiers etc. that have been saved under non-latin file names (using e.g. Chinese, Korean or Japanese name).

It also means that for example classifier training may now be carried out using non-latin class names and that classification and/or measurement results may from now on be displayed with non-latin description strings using the Common Vision Blox display component and its non-destructive overlay plugins.

A description of the implementation and hints on how to use **Unicode with Common Vision Blox** can be found in the file CommonVisionBlox.chm.

### New Logging Infrastructure

A **new log service** has been added to Common Vision Blox (%CVB%Applications\LogGUI.exe) that allows for easy collection of diagnostic data from all Common Vision Blox modules that provide such information.

Details will be published in an application note on [www.commonvisionblox.com](http://www.commonvisionblox.com) soon.

### New Tool Builds

In an effort to further increase the overlap between the 32 and the 64 bit build of Common Vision Blox the **ShapeFinder and the TextOut tool have been rewritten in C++**.

Both may now be used in applications targeting the x64 Windows platform.

Additionally, the **ShapeFinder tool is now also available on all supported Linux platforms**.

### New Target Platforms

Common Vision Blox has been tested and is now supported on the following combinations of operating systems and hardware platforms:

	x86/i686	x64/x64_64	armv7l (hf)	aarch64
<b>Windows 7 and up</b>	X	X		
<b>Ubuntu 12.04</b>	X	X	X	
<b>Ubuntu 16.04</b>	X	X	X	X

If you are interested in getting support for Common Vision Blox for combinations of operating systems and hardware platforms not listed here please contact your local distributor.

### Tool Availability

On the Windows platform, most tools are available for both architectures (x86 and x64) - only CVB Color and CVB Manto are restricted to the 32 bit version.

For Linux (32 and 64 bit) only the Image Manager (CVB CameraSuite), Minos, ShapeFinder and GEVServer are currently available.

	Windows (32 bit)	Windows (64 bit)	Linux (all supported)
Image Manager & GenICam	X	X	X
Foundation Package	X	X*	
Arithmetic	X	X*	
Barcode	X	X	
BayerToRGB	X	X	
Color	X		
CVC Blob	X	X	
Edge	X	X	
GEVServer	X	X	X
GPUprocessing	X	X*	
LightMeter	X	X	
Manto	X		
Minos	X	X	X
Movie	X	X*	
Polimago	X	X	

ShapeFinder	X	X	X
TextOut	X	X	

\* module-specific restrictions may apply; see release notes for details

Please note that development on the following tools has been discontinued and those tools are not available any more in Common Vision Blox 13.00.000:

- Core3D, Match3D, Merger3D and Metric3D (substitutes will be made available in the next release)
- FlexInspect
- OpticalFlow
- VideoStabilizer

### Available Installers

As of Common Vision Blox 13.00.000 the installers for Common Vision Blox will **no longer ship on a DVD**.

Instead, all installation packages as well as images for different embedded platforms are available for download from <http://www.commonvisionblox.com/en/cvb-download/>.

Currently, the following items are available for download:

#### Windows

The download pages for the **latest Common Vision Blox builds** are available

for CVB 32 bit : <http://www.commonvisionblox.com/cvb-windows-32-bit/> and

for CVB 64 bit: <http://www.commonvisionblox.com/cvb-windows-64-bit/>

(note that the 32 bit version of Common Vision Blox may also be installed and used on 64 bit versions of Windows).

These pages not only give access to the up-to-date installers but also contain

- all the **latest Video Interface Drivers** that are available for the respective build of Common Vision Blox
- the **adapters for Cognex Vision Pro and IPD Sherlock**
- the **runtime-only installers** of Common Vision Blox
- the **merge modules** needed for building customized installers of Common Vision Blox (please refer to the file CustomSetups.chm for a more detailed description of the custom installation options)

The size of the installers and of the installed product differs between installer flavors as well as between system architectures and operating systems.

	Installer
A	Common Vision Blox CameraSuite Runtime 13.00.xxx
B	Common Vision Blox CameraSuite 13.00.xxx

C	Common Vision Blox Runtime 13.00.xxx
D	Common Vision Blox 13.00.xxx

These installers are intended to help customers build their own applications with a footprint that is as small as possible by selecting the installer that is appropriate for their scenario:

- Installers B and D come with developer resources (Tutorials, reference documentation, header files) and are generally intended for development systems.
- Installers A and C contain files needed during runtime only and are therefore smaller than B and D.  
They are ideally suited for deployment in a system to be shipped to the factory floor as they do not burden the system they are installed on with things that are only of interest for developers.
- Installers A and B are CameraSuite installers, which means they will install the Image Manager plus GenICam (i.e. GigE Vision and USB3 Vision) support.  
They are intended for those customers who want to merely use Common Vision Blox as a versatile and robust image acquisition SDK.
- Installers C and D contain the full set of tools available for the respective target platform and are the ones to be used while developing and/or deploying an application that utilizes the powerful algorithms in Common Vision Blox.

The installer size ranges from about 85 MB (CameraSuite Runtime Setup) to about 495 MB (Full Common Vision Blox Setup).

This includes all the required runtime files (e.g. the .Net runtimes and Visual C++ runtimes).

Keep in mind that during setup the installation requires a lot more space than the sum of the installer's size and the size of the installed files:

The installer package is cached in the %ProgramData%\Downloaded Installations folder for repair/modification setups that may be required later on, and it is temporarily copied to the %temp% folder for execution of the actual setup. Taking this into account and adding the fact, that the files in the installer are typically compressed with a compression ratio of about 2 to 3, one can estimate the disc space requirements during installation to be about 4 to 5 times the size of the installer itself.

**Hint for users of Windows 8 and 10:** For Windows 8 and higher, the **.Net framework 2.0 is by default no longer part of the operating system's installation routine.**

As Microsoft no longer offers a downloadable installer package for the .Net framework 2.0 for Windows 8 and higher, it is not possible for the Common Vision Blox setup to install the .Net framework 2.0 on those operating systems. The components in Common Vision Blox (tutorials, Management Console) have therefore been **switched to the .Net framework 4.0**, but when an application or component that still uses the .Net framework 2.0 is started on Windows 8 or 10 for the first time, the operating system will want to automatically download and install the required framework version (if this has not happened yet). Of course an internet connection is

required for this step.

See [here](#) for details. If your code is linked against the .Net framework 2.0 and you plan to deploy your Windows 8 or higher based system to a location (factory) where it has no internet connection please make sure to trigger the installation of the .Net framework before shipping your system.

### **Linux Versions**

Download links for the installation packages for the supported Linux versions for PC as well as the ARM-based platforms are directly available on

<http://www.commonvisionblox.com/en/cvb-download/>

On top of that, several system images for selected embedded systems are available for download as well as a number of application notes.

### **Common Vision Blox CameraSuite**

On <http://www.commonvisionblox.com/cvb-camerasuite/> the most up-to-date versions of the Common Vision Blox CameraSuite are available for download for all the currently supported platforms.

Common Vision Blox CameraSuite may be used **free of charge with any GigE Vision or USB3 Vision camera bought from STEMMER IMAGING.**

## Supported Compilers and Operating Systems and Development Environments

### Common Vision Blox for Windows

	32 bit	64 bit
Build Platform	The Image Manager and most of the tools for the 32 bit Windows platform have been built using Microsoft Visual C++ 14. The pattern recognition tools Manto and Polimago have been built using Delphi XE7.	The Image Manager and all tools available on the 64 bit Windows platform have been built using Microsoft Visual C++ 10. The PolimagoLib.dll has been built using Delphi XE7.
Supported Development Environments and Compilers	Visual C++ (9 and up) C# VB.Net (.Net Framework 2.0 and up) Delphi (versions 6, 7, 8, XE2 and up)	Visual C++ (9 and up) C# VB.Net (.Net Framework 2.0 and up) Delphi XE2 and up
Supported Operating Systems	<p>The 32 bit version of Common Vision Blox was tested under Windows 7, Windows 8.1 and Windows 10. It is usable and officially supported to run on the x64 versions of Windows starting with Windows 7, however customers using the 32 bit version of Common Vision Blox may experience compatibility limitations with the Common Vision Blox acquisition drivers as not all manufacturers support the Windows on Windows 64 compatibility layer. If in doubt, please refer to your driver's release notes for details.</p> <p>Please note that Windows XP and Windows Vista are no longer supported. Customers who continue using Windows XP are encouraged to use Common Vision Blox 12.0.</p>	<p>The 64 bit Windows version of Common Vision Blox was tested under Windows 7 x64, Windows 8.1 x64 and Windows 10. It also generally runs on the Embedded versions of Windows x64 (for best results we suggest building your Windows Embedded image based on the Application Compatibility Template). Note that the Update KB2393802 must be installed on a Windows 7 Embedded x64 system - otherwise the installer will not work properly. Systems with Windows 7 Embedded x64 SP1 already have that update. If needed, the KB2393802 update may be downloaded directly from Microsoft.</p>

All required runtime files are automatically installed by the Common Vision Blox setup.

**Users of GPUprocessing** should verify that their machine has DirectX 9.0c (October 2005) or later installed.

If this particular version is missing on a target machine, please download and install it from <https://www.microsoft.com/en-US/download/details.aspx?id=34429>.

**Hints for Visual Studio users:** The tutorial projects and solution files installed by Common Vision Blox cover the Visual Studio versions up to Visual Studio 2010.

Users of Visual Studio 2012 and higher please use the Visual Studio 2010 solutions when editing and/or building the tutorial programs.

Visual Studio 2012 and higher will automatically convert the project and solution files as necessary when opening Visual Studio 2010 files - a mechanism we have so far found to work without any problems. When experiencing problems with upgrading the Visual Studio 2010 solutions please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

Please also note that starting with Visual Studio 2013, the Visual Studio installer no longer brings along the MBCS build of the MFC library.

This causes problems when trying to build those Visual C++ tutorials of Common Vision Blox that still are using the MBCS version of MFC.

Users who want to build those tutorials themselves are advised to first download and install the MBCS-version of MFC from Microsoft (<http://www.microsoft.com/en-us/download/details.aspx?id=40770>).

**Hints for Delphi users:** The tutorial projects and solution files installed by Common Vision Blox are based on Delphi XE2.

Users of other Delphi XE3 and higher please use the Delphi XE2 project files when editing and/or building the tutorial programs.

Delphi XE3 and higher will convert the project files as necessary when opening Delphi XE2 files - a mechanism we have so far found to work without any problems.

When experiencing problems with upgrading the Delphi XE2 projects please contact your local distributor or [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

### Common Vision Blox for Linux

The Image Manager and all available tools for the 32 and 64 bit Ubuntu 12.04 platform have been built using the GNU Compiler Collection 4.6.

The binaries for the Ubuntu 16.04 releases have been built using the GNU Compiler Collection 5.4. These compilers are also the compilers supported by Common Vision Blox on the respective platform.

## Updating Existing Applications

### From Common Vision Blox 2016

Upgrading an application from Common Vision Blox 2016 (12.00.xxx or 12.01.xxx) to Common Vision Blox 2017 (13.00.xxx) **will not require any changes to the application.**

Binaries compiled versus those versions of Common Vision Blox will continue to run with Common Vision Blox 13.00.xxx - unless they have been using one of the discontinued tools.

### From Common Vision Blox 2011

Even though Common Vision Blox 2017 is a major upgrade, updating applications based on Common Vision Blox 2011 SP2 (11.02.xxx) to Common Vision Blox 2017 will only require changes if the Barcode OCX is involved (see below) as the API did not introduce any breaking changes.

Common Vision Blox 2017 will continue to install the .Net wrapper DLLs of the different Common Vision Blox 2011 versions in the Global Assembly Cache so that applications built with any of the .Net languages will still be able to find their dependencies.

Applications using the Barcode OCX should be updated as the property set of the ActiveX control has changed which may require a regeneration of the property bag used in the application even if you do not want to make use of the new properties.

Applications built with Common Vision Blox 11.00.xxx or 11.01.xxx should also be adjusted to the updated CVDisplay.ocx introduced in Common Vision Blox 11.02.xxx for the same reason.

#### To update your project to the new ActiveX control please...

- copy the up-to-date C++ ActiveX wrapper files (cvdisplayctrl.h/.cpp; cvbarcodectrl.h/.cpp) into your project if you are using Visual C++.
- modify the project file to use the newer ActiveX control by modifying the respective COMReference entry in your \*.csproj or \*.vbproj file if you are using C# or VB.Net.
- update the ActiveX control toolbar to the latest package version found in %CVB%\Lib\Delphi or %CVB%\Lib\C if you are using an Embarcadero product.
- open your development environment and toggle one of the control's properties, then save the changes to update the environment's property bag for that control.

### From Older Versions of Common Vision Blox

If you are planning on porting applications built with Common Vision Blox 10.x or even Common Vision Blox 9.x please also read through the porting sections in the release notes of Common Vision Blox 2011 and Common Vision Blox 10.

## List of Changes

The following components have changed in Common Vision Blox 13.00.xxx:

### Installers

- The installation packages for the ARM platforms now handle situations where gksudo is not available gracefully.
- The 32 bit installers add the trailing backslash to the environment variable %CVBDATA% that was forgotten in Common Vision Blox 12.01.001.

### Image Manager

#### General

- As newer versions of Window no longer come with the .Net framwork 2.0 installed the Common Vision Blox Viewer, the Management Console and the .Net tutorials have been switched to .Net framework 4.0.

#### CVCDisp.dll

- Panning did not work well with large Common Vision Blox displays. This has been fixed.
- The display DLL now properly cleans drag tags that have been painted on the fringe in DirectDraw mode.

#### CVCDriver.dll

- G2Grab now returns a proper error code if the image has no IGrab2 interface.

#### CVCFFile.dll

- Emu file definitions with wildcards no longer skip the last matching file.
- A function for flat field corrections has been added (CreateFlatfieldCorrectedImage).
- It is now possible to save PNG files with alpha channels (when a Common Vision Blox image with 4 channels is being saved as a PNG file, the fourth channel is assumed to be the Alpha channel).

#### CVCImg.dll

- Loading palettized BMP files with an image width that is not a multiple of four no longer leads to malformed image data.
- A bug in the implementation of CopyImageRectPlanes that might lead to undefined behavior or crashes has been fixed.
- The handling of quirky input parameters by CreateImageFromPointer has been improved.

- `CreateInversePolarTransformedImage` now properly returns true if the conversion was successful.
- `CopyImageRectPlanes` no longer makes a difference between images with the flags `DT_FLOAT` versus `DT_FLOAT | DT_SIGNED` set (float implies signed, but not all floating point valued images have the signed flag set).

#### **CVMgmtSvc.exe**

- The VRmagic AreaScan 3D sensors are no longer supported as license sources.
- In the Common Vision Blox versions 12.01.000 to 12.01.002 the licensing subsystem did enter a state where newly attached CodeMeter dongles were not detected by the system any more. This has been fixed.
- The initialization phase now works stable also on the ARM platform.

#### **GenICam**

##### **CVGenApi.dll**

- Node map serialization has been made more robust against unreadable nodes.

##### **CVGenApiGrid.ocx**

- GenApi grid is now usable in WPF applications on Windows 10 (however a forms host will still be necessary).

##### **CVRegistry.dll**

- The CVRegistry.dll now handles multi-process access to the device registry properly.

##### **GenICam.vin**

- Having the GEVConfigManager open will no longer block the GenICam.vin from loading.

##### **GenICamBrowser**

- The GenICam browser now recognizes and informs about disconnect/reconnect events.
- GenICam browser now handles padding bytes at the end of pixel lines properly.

##### **siNetFilter.sys**

- The time stamps on images with chunk data are now handled consistently.
- An occasional system freeze when plugging/unplugging a GigE to USB adapter several times while acquiring images has been fixed.
- The driver no longer reports a corrupt frame when the packet containing the trailer information had to be resent.

## Foundation Package

For release notes about the tools that are part of the Foundation Package (Arithmetic, BayerToRGB, Edge, LightMeter, TextOut) please refer to the tool release notes.

### CVFoundation.dll

- ScaleTo8BPPUnsigned now also works with floating point valued input images.
- The hitherto hidden function CreateEllipseRegression is now properly exported.
- The function CreateCircleRegression now uses a QR solver which delivers more consistent results.

## Management Console

### CVBLicense Module

- If the computer has an internet connection and a USB3 Vision or GigE Vision camera is attached, the Management Console will not automatically try to fetch a CameraSuite license off the internet for it. This can also be done manually by running the *collect-camsuite* utility manually that installs with Common Vision Blox (to %CVB%\Hardware\StemmerImaging\Utilities on Windows and \${CVB}/bin on Linux).
- The overview page of the license module now displays the current status of the CvMgmtSvc and Codemeter service.

## TeachBench

### General

- Search result messages now flush the status queue so that the search results always become visible immediately.
- Pool images may now be added to training sets by right-clicking on them.
- when unloading a TeachBench module the overlays it placed on a pool image are now removed as well.
- Loading a project that has serialized learning settings will no longer mark the project as "modified".

### Minos Module

- The generation of Minos Classifiers no longer ignores some of the learning settings.
- The *Create Invariants* option no longer remains disabled when starting a new project.
- Resizing the model no longer makes the model display lose sync with the actual model size.

## Polimago Classification & Regression Module

- Focus behavior of some dialogs has been improved.
- The overlay now give visual feedback when a new instance has been added.

## **Polimago Search Module**

- Resizing the model no longer makes the model display lose sync with the actual model size.
- Moving/modifying the search AOI will now automatically trigger a new grid search if a classifier is available.
- Affine results will now also display the angle and scale.

## Known Problems

### General

- We have found two cases where the Common Vision Blox Display was producing garbage output on a computer with Windows 7 (32 bit) and an nVidia graphics card installed.  
If you experience the same, please open the Common Vision Blox Management Console, go to the "General Settings" dialog and switch the DirectDraw version to be used to "Direct3D 9 with Alpha Blending" - this will fix the display (and might in some cases even increase overall display performance).
- The scanning functions implemented by the CVCIImg.dll (typically those functions that take a TArea struct as the area of interest) cannot work on pixel coordinates exceeding 32767 in either direction. This is because internally, a 32 bit based fix point arithmetic approach is being used that dedicates the lowest 16 bits for the decimal places, leaving only enough room for up to 32767 integer positions.

### Foundation Package

- On the Foundation Package's FFilter Control, the property page "User Kernel" is currently not usable in Visual C++ projects.  
Trying to open this page in Visual Studio 2010 will emit an error, trying to open this page in older versions of Visual Studio may terminate the development environment.  
Only Visual C++ projects are affected by the - the property page opens correctly in C# and VB.Net projects.

### Installation

- When running any of the Common Vision Blox Setups on a Windows 7 Embedded x64 system that has neither Service Pack 1 nor KB2393802 installed the Setup will terminate after a few seconds without installing anything on the target system.  
Please make sure you have either Service Pack 1 or KB2393802 installed on the Windows 7 Embedded x64 system before trying to install Common Vision Blox.  
For your convenience, the KB2393802 update is located in the folder \Redist\Windows Updates of the Common Vision Blox DVD.
- On one occasion we have seen the SafeNet Sentinel Parallel Port dongle driver not working after installing the 32 bit version of Common Vision Blox on a 64 bit Windows.  
In such a case, manual configuration of the driver usually fixes the problem: Under C:\Program Files (x86)\Common Files\SafeNet Sentinel\Sentinel System Driver you can find a simple utility called SetupSysDriver.exe.  
Start it, then select "Configure Driver", then "Add" and generate a new entry with Bus Address and Bus Number incremented by 1 (relative to what is the highest entry in the list so far), set the Type to "Internal" and Port Type to "ECP", Ownership to "Auto" and Use to "yes" - this should make the Parallel Port dongle visible in the system.

The 64 bit version of Common Vision Blox is of course unaffected by this because it does not support the SafeNet Sentinel dongles.

## License

- The SafeNet Sentinel dongles that have been used up until Common Vision Blox 10.02.000 are not usable with the x64 build of Common Vision Blox.

Owners of a SafeNet dongle who also want to work with the x64 build of Common Vision Blox are encouraged to contact their distributor to get a quote for an upgrade to a WIBU dongle.

## File Versions

### Image Manager

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Image Manager are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
CVBase_v1_2.dll	1.2.10.278	1.2.10.278	1.210.278
CVBAvi.dll	3.0.1.746	3.0.1.746	N/A
CVCDisp.dll	4.0.4.736	4.0.4.736	N/A
CVCDriver.dll	4.0.5.558	4.0.5.558	4.5.558
CVCErrror.dll	2.2.0.28	2.2.0.28	N/A
CVCFFile.dll	4.4.2.537	4.4.2.537	4.402.537
CVCIImg.dll	4.9.2.548	4.9.2.548	4.902.548
CVCUtilities.dll	4.6.0.459	4.6.0.459	4.600.459
CVDigIO.ocx	1.6.0.715	1.6.0.715	N/A
CVDisplay.ocx	3.0.1.799	3.0.1.799	N/A
CVGrabber.ocx	2.2.10.892	2.2.10.892	N/A
CVImage.ocx	1.10.0.928	1.10.0.928	N/A
CVLinescan.ocx	1.4.6.849	1.4.6.849	N/A
CVMgmtSvc.exe	2.9.3.590	2.9.3.590	N/A
CVRingbuffer.ocx	1.2.6.840	1.2.6.840	N/A
CVSysTray.exe	2.6.0.2299	2.6.0.2299	N/A
Gear32sd.dll	6.4.7.7	6.4.7.7	N/A
iCVCDriver.dll	2.8.0.897	2.8.0.897	N/A
iCVCIImg.dll	2.14.0.412	2.14.0.412	N/A
iCVCPugin.dll	3.4.0.873	3.4.0.873	N/A
iCVCUtilities.dll	2.6.0.603	2.6.0.603	N/A

### Foundation Package

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Foundation Package are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
<b>Arithmetic.dll</b>	1.8.0.685	1.8.0.685	N/A
<b>CVCDrawGraph.ocx</b>	1.6.2.688	1.6.2.688	N/A
<b>CVCEdge.dll</b>	2.4.0.472	2.4.0.472	N/A
<b>CVCLightMeter.ocx</b>	1.6.0.1743	1.6.0.1743	N/A
<b>CVEdge.ocx</b>	1.2.4.1562	1.2.4.1562	N/A
<b>CVFoundation.dll</b>	2.2.6.890	2.2.6.890	N/A
<b>DrawGraph.dll</b>	1.6.0.710	1.6.0.710	N/A
<b>etBayerToRGB.dll</b>	1.8.4.646	1.8.4.646	N/A
<b>FArithmetic.ocx</b>	1.4.0.1496	1.4.0.1496	N/A
<b>FBlob.ocx</b>	1.6.0.1601	1.6.0.1601	N/A
<b>FColorSpace.ocx</b>	1.4.0.1494	1.4.0.1494	N/A
<b>FFilter.ocx</b>	1.4.0.1478	1.4.0.1478	N/A
<b>FLUT.ocx</b>	1.4.0.1508	1.4.0.1508	N/A
<b>FThresholding.ocx</b>	1.4.0.1456	1.4.0.1456	N/A
<b>iArithmetik.dll</b>	2.2.1.731	2.2.1.731	N/A
<b>iBayerToRGB.dll</b>	2.2.1.701	2.2.1.701	N/A
<b>iCVCEdge.dll</b>	2.2.1.650	2.2.1.650	N/A
<b>iCVCFoundation.dll</b>	2.18.0.697	2.18.0.697	N/A
<b>iLightMeter.dll</b>	2.2.1.697	2.2.1.697	N/A
<b>iTextOut.dll</b>	2.4.0.439	2.4.0.439	N/A
<b>LightMeter.dll</b>	2.2.2.651	2.2.2.651	N/A
<b>TextOut.dll</b>	3.0.1.52	3.0.1.52	N/A

### Management Console

The file versions of the ActiveX controls, executables and DLLs currently belonging to the Management Console are:

(note that the Management Console is not available under Linux)

	Windows 32	Windows 64	Linux
--	------------	------------	-------

CVBManagementConsole.exe	1.6.1.181	1.6.1.181	N/A
CVBMMCCore.dll	1.6.0.23	1.6.0.23	N/A
CVBFileVersions.dll	1.6.0.29	1.6.0.29	N/A
CVBLicense.dll	1.4.0.217	1.4.0.217	N/A
CVBSettings.dll	1.6.0.28	1.6.0.28	N/A
LicWizardBase.dll	2.3.2.384	2.3.2.384	N/A
GenICamBindings.dll	2.6.1.44	2.6.1.44	N/A
GenICamConfig.dll	1.14.2.151	1.14.2.151	N/A

### GenICam

The file versions of the ActiveX controls, executables and DLLs currently belonging to the GenICam integration are:

(note that file names may differ under Linux)

	Windows 32	Windows 64	Linux
CVFactory.cvb	2.2.0.582	2.2.0.582	N/A
CVGenApi.dll	3.0.1.108	3.0.1.108	3.0.1
CVGenApiGrid.dll	2.0.0.162	2.0.0.162	N/A
CVGenApiGrid.ocx	2.2.0.201	2.2.0.201	N/A
CVRegistry.cvb	3.2.1.337	3.2.1.337	N/A
CVSetup.dll	2.2.0.1	2.2.0.1	N/A
CVSetup.exe	2.3.0.0	2.3.0.0	N/A
GenICam.vin	2.0.9.884	2.0.9.884	N/A
GEVConfigManager.exe	1.4.22.361	1.4.22.361	N/A
GEVFD.dll	2.0.2.0	2.0.2.0	N/A
GEVFDDiag.exe	N/A	2.0.2.0	N/A
GEVSD.dll	2.10.0.429	2.10.0.429	2.1000.429
GEVTL.cti	1.14.0.398	1.14.0.398	N/A
CVUSBCTL.cti	N/A	N/A	N/A
iCVGenApi.dll	2.8.0.397	2.8.0.397	N/A
siNetFilter.sys	2.3.0.106	2.3.0.106	N/A

<b>siGevSvc.exe</b>	1.7.23.322	1.7.23.322	N/A
<b>SILogSvc.exe</b>	2.1.3.127	2.1.3.127	N/A
<b>zlib1.dll</b>	1.2.1.1429	1.2.2.0	N/A

### Overlay Plugins

The file versions of the Overlay Plugins currently shipped are:

(note: Overlay Plugins are not available under Linux)

	Windows 32	Windows 64	Linux
<b>CVCArcPlugIn.opi</b>	1.4.0.673	1.4.0.673	N/A
<b>CVCAreaPlugIn.opi</b>	1.4.1.673	1.4.1.673	N/A
<b>CVCBitmapPlugIn.opi</b>	1.6.0.676	1.6.0.676	N/A
<b>CVCCirclePlugIn.opi</b>	2.6.0.671	2.6.0.671	N/A
<b>CVCCrosshairPlugIn.opi</b>	2.6.0.676	2.6.0.676	N/A
<b>CVCFixBitmapPlugIn.opi</b>	1.6.0.667	1.6.0.667	N/A
<b>CVCFixCirclePlugIn.opi</b>	2.6.0.664	2.6.0.664	N/A
<b>CVCImpPlugIn.opi</b>	1.6.0.880	1.6.0.880	N/A
<b>CVCLinePlugIn.opi</b>	2.6.0.662	2.6.0.662	N/A
<b>CVCMultipleRotatedRectPlugIn.opi</b>	1.4.0.664	1.4.0.664	N/A
<b>CVCNamedCompassPlugIn.opi</b>	1.2.2.667	1.2.2.667	N/A
<b>CVCPixelListPlugIn.opi</b>	1.4.0.0	1.4.0.0	N/A
<b>CVCPolyLinePlugIn.opi</b>	1.6.0.663	1.6.0.663	N/A
<b>CVCRectPlugIn.opi</b>	2.4.1.661	2.4.1.661	N/A
<b>CVCRotatedCrosshairPlugIn.opi</b>	2.2.0.663	2.2.0.663	N/A
<b>CVCRotatedRectPlugIn.opi</b>	1.6.0.663	1.6.0.663	N/A

<b>CVCSmartRectangle PlugIn.opi</b>	2.6.0.662	2.6.0.662	N/A
<b>CVCStaticTextOutPI ugIn.opi</b>	1.6.0.662	1.6.0.662	N/A
<b>CVCTargetPlugIn.o pi</b>	1.6.0.662	1.6.0.662	N/A
<b>CVCTextOutPlugIn. opi</b>	1.4.0.663	1.4.0.663	N/A

### TeachBench

The file versions of the files for TeachBench currently shipped are:

	<b>Windows 32</b>	<b>Windows 64</b>	<b>Linux</b>
<b>TeachBench.exe</b>	1.24.0.638	1.24.0.638	N/A
<b>TeachBench.Base.dll</b>	1.18.0.638	1.18.0.638	N/A
<b>TeachBench.ImageProce ssors.Core.dll</b>	1.4.0.638	1.4.0.638	N/A
<b>TeachBench.ImageProce ssors.Foundation.dll *</b>	1.5.1.638	1.5.1.638	N/A
<b>TeachBench.PolimagoCR .dll *</b>	1.20.1.638	1.20.1.638	N/A
<b>TeachBench.PolimagoSe arch.dll *</b>	1.20.2.641	1.20.2.641	N/A
<b>TeachBench.Minos.dll*</b>	1.20.1.638	1.20.1.638	N/A
<b>Stemmer.Cvb.Async.dll **</b>	1.4.1.638	1.4.1.638	N/A
<b>Stemmer.Cvb.dll **</b>	1.6.0.638	1.6.0.638	N/A
<b>Stemmer.Cvb.Foundation n.dll **</b>	1.6.1.638	1.6.1.638	N/A
<b>Stemmer.Cvb.Minos.dll **</b>	1.8.0.638	1.8.0.638	N/A
<b>Stemmer.Cvb.Polimago. dll **</b>	1.8.1.638	1.8.1.638	N/A
<b>Stemmer.Cvb.Sampledatabase.dll **</b>	1.4.1.638	1.4.1.638	N/A
<b>Stemmer.Cvb.Wpf.dll **</b>	1.8.2.638	1.8.2.638	N/A

<b>Microsoft.Expression.Interaction.dll</b>	3.0.40218.0	3.0.40218.0	N/A
<b>Microsoft.Practices.Prism.Composition.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.Interactivity.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.MefExtensions.dll</b>	5.0.0.0	5.0.0.0	N/A
<b>Microsoft.Practices.Prism.Mvvm.Desktop.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.Mvvm.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.PubSubEvents.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.Prism.SharedInterfaces.dll</b>	1.0.0.0	1.0.0.0	N/A
<b>Microsoft.Practices.ServiceLocation.dll</b>	1.2.0.0	1.2.0.0	N/A
<b>System.Windows.Controls.DataVisualization.Toolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>System.Windows.Controls.Layout.Toolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>System.Windows.Interactivity.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>WPFToolkit.dll</b>	3.5.50211.1	3.5.50211.1	N/A
<b>Xceed.Wpf.Toolkit.dll</b>	2.5.0.0	2.5.0.0	N/A

\* file installed to the directory %CVB%\Applications\TeachBench

\*\* file installed to the global assembly cache

## 1.2 Tool Release Notes

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### CVB Tool Release Notes

[Arithmetic](#)

[Barcode](#)

[BayerToRGB](#)

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[Edge](#)

[GEVServer](#)

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[ShapeFinder](#)

[TextOut](#)

### CVB Image Manager and Foundation Package Release Notes

#### 1.2.1 Arithmetic

### Arithmetic Release Notes

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#### Changes with CVB version 13.2

- Added Ubuntu 18.04 Linux builds.

	Win32	Win64	Linux
Arithmetic.dll	1.10.0.806	1.10.0.806	1.1000.806
AriActive	1.0.0.3	N/A	N/A
iArithmetic.dll	3.9.2.3		N/A

### Changes with CVB version 13.1

- Added Linux builds.

	Win32	Win64	Linux
Arithmetic.dll	1.10.0.737	1.10.0.737	1.1000.737
AriActive	1.0.0.3	N/A	N/A
iArithmetic.dll	2.2.1.845		N/A

### Changes with CVB version 13.0

- Switched to vc14 compiler on Windows.

	Win32	Win64
Arithmetic.dll	1.8.0.685	1.8.0.685
AriActive	1.0.0.3	N/A
iArithmetic.dll	2.2.1.731	

### Changes with CVB version 11.2

- The missing prefixes in the iArithmetic.dll's DllImport statement have been added, making the Arithmetic.dll functions accessible again in iArithmetic.dll.

	Win32	Win64
Arithmetic.dll	1.6.0.271	1.6.0.271
AriActive	1.0.0.3	N/A
iArithmetic.dll	2.2.1.323	

### Changes with CVB version 11.0

Starting with Common Vision Blox 11.0, Arithmetic will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

**Known Limitations:**

- AriActive is not available on the 64 bit Windows platform.

	Win32	Win64
Arithmetic.dll	1.5.2.69	1.5.0.56
AriActive	1.0.0.3	N/A
iArithmetic.dll	2.0.0.157	

**Changes with CVB version 10.2**

The Arithmetic.dll has undergone a few structural changes in preparation of the release of Common Vision Blox for the Windows 64 and Linux platform.

No functional changes have been applied.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Arithmetic are:

Arithmetic.dll	1.4.0.45
AriActive.exe	1.0.0.3
iArithmetic.dll	1.0.1.0

**Changes with CVB version 10.1**

The Arithmetic.dll has been relinked with an updated dongle protection library that permits remote desktop access to applications built with it.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Arithmetic are:

Arithmetic.dll	1.3.2.0
AriActive.exe	1.0.0.3
iArithmetic.dll	1.0.1.0

**Changes with CVB version 10.0**

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

A bug in the VPAT-access functions of the Arithmetic DLL has been fixed (all those functions previously ignored the plane index and accessed plane 0 always).

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Arithmetic are:

Arithmetic.dll	1.3.1.0
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AriActive.exe	1.0.0.3
iArithmetic.dll	1.0.1.0

### Changes in version 1.3

The Arithmetic.dll (version 1.2.0.3) fixes a bug in the function MulDiv16To16.

All pixels that have the lower byte set to zero in the 2nd input image are set to zero in the output image as well.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Arithmetic are:

Arithmetic.dll	1.2.0.3
AriActive.exe	1.0.0.3

### Changes in version 1.2

The Arithmetic.dll (version 1.2.0.0) contains several new functions. Existing functions have been optimized internally without changing the DLL functions interface.

Important changings:

- Functions (excl. Cut/Ext) do accept already existing destination images.  
So, if a proper image is available the tool does not need to create a new one, but shares the old.  
This can make applications easier and faster. The images have to have proper size and type.
- Ari16to16-Functions can combine 10, 12 and 16 Bit images .
- MMX-support optimized.
- New function for image depth extension from 8Bit to 16Bit.
- New function for multiplication and division of 16Bit images.
- New functions for combining one image with a offset and factor.
- New functions for combining 8Bit and 16Bit images.

Please refer to the tool's documentation for detailed description in the Tools Manuals.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Arithmetic are:

Arithmetic.dll	1.2.0.0
AriActive.exe	1.0.0.3

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#### 1.2.2 Barcode

### Barcode Release Notes

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**Changes in CVB version 13.2****Changes:**

- In previous releases the function CvcBcGetPharmaCodeEx and CvcBcSetPharmaCodeEx were missing in the exported functions of the CVCBarcode.dll. This has been corrected.
- Switched to C++ based CVCBarcode.ocx to reduce the compatibility issues encountered on the Delphi based control.

**Known Problems:**

- In Delphi applications under Windows 10 it is currently not possible to use the property pages of the 64 bit build of the CVCBarcode.ocx.

	Win32	Win64
CVCBarcode.dll	2.3.0.5	2.3.0.5
CVCBarcode.ocx	3.0.1.144	3.0.1.144
ZBCLib.dll	2.3.0.4	2.3.0.5
iCVCBarcode.dll	3.9.2.3	

**Changes in CVB version 13.1****Changes:**

- Fixed a problem in iCVCBarcode.dll that caused an uncaught overflow exception when calling CreateConfiguration in a 64 bit application.

**Known Problems:**

- Under Windows 10 it is currently not possible to use the property pages of the 64 bit build of the CVCBarcode.ocx.

	Win32	Win64
CVCBarcode.dll	2.3.0.4	2.3.0.4
CVCBarcode.ocx	2.3.2.1	2.3.2.1
ZBCLib.dll	2.3.0.4	2.3.0.4
iCVCBarcode.dll	2.7.2.472	

**Changes in CVB version 13.0****Changes:**

- Increased the maximum image width and height that can be processed to 32000 pixels.
- Increased the number of configurations that can be handled to 1000.

**Known Problems:**

- Under Windows 10 it is currently not possible to use the property pages of the 64 bit build of the CVCBarcode.ocx.

	Win32	Win64
CVCBarcode.dll	2.3.0.4	2.3.0.4
CVCBarcode.ocx	2.3.2.0	2.3.2.0
ZBCLib.dll	2.3.0.4	2.3.0.4
iCVCBarcode.dll	2.7.1.409	

### Changes in CVB version 12.1

- Added support for RSS Expanded and RSS Expanded Stacked codes.
- In the 64 bit installation, the wrapper for the Barcode OCX was missing in version 12.0.

	Win32	Win64
CVCBarcode.dll	2.3.0.2	2.3.0.2
CVCBarcode.ocx	2.3.2.0	2.3.2.0
ZBCLib.dll	2.3.0.2	2.3.0.2
iCVCBarcode.dll	2.7.0.299	

### Changes in CVB version 12.0

- Added CvcBcSet/GetPharmacodeEx so set/get the newly introduced tolerance and skew parameters in reading Pharmacodes.
- Added CvbBcSet/GetCodeGrading1DEx with which it is possible to select the grades on which the grade\_overall result should be based.
- Added capability to perform QR Code Grading (see CvcBcSet/GetQRCodeGrading).
- Fixed a problem a problem in CvcBcSaveConfiguration that led to malformed files when trying to use a very long file name.
- The Barcode OCX has been updated to include configuration dialog for the symbologies introduced after CVB 9.0.x as well as 1D and 2D grading.
- Starting with Common vision Blox 2016, the Barcode OCX is now available on the x64 platform as well.

Please note that for various reasons the Barcode OCX has - unlike the other ActiveX controls in Common Vision Blox - received a new property called Image64 to support the 64 bit platform. Customers who wish to build applications that support either platform are advised to use that property rather than the 32 bit property Image to do the assignment of the image.

	Win32	Win64
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CVCBarcode.dll	2.3.0.0	2.3.0.0
CVCBarcode.ocx	2.3.1.0	2.3.1.0
ZBCLib.dll	2.3.0.0	2.3.0.0
iCVCBarcode.dll	2.6.0.244	

### Changes in CVB version 11.2

- Added documentation for the 1D grading functions and parameters that were present but the documentation was forgotten in the last release.

	Win32	Win64
CVCBarcode.dll	2.2.0.6	2.2.0.6
CVCBarcode.ocx	2.0.1.0	N/A
ZBCLib.dll	2.2.0.7	2.2.0.7
iCVCBarcode.dll	2.4.0.161	

### Changes in CVB version 11.1

The MessageBox that is being opened when running the tool without a license is now being opened with different MessageBox flag.

	Win32	Win64
CVCBarcode.dll	2.2.0.6	2.2.0.6
CVCBarcode.ocx	2.0.1.0	N/A
ZBCLib.dll	2.2.0.5	2.2.0.5
iCVCBarcode.dll	2.1.0.38	

### Changes in CVB version 11.0

Starting with Common Vision Blox 11.0, CVC Barcode will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

#### Changes:

- CVC Barcode now supports 1D code grading.

#### Known Limitations:

- On the 64 bit Windows platform the Barcode OCX is currently not available.

**Fixes:**

- On very rare occasions CVC Barcode could crash while reading unorthodoxly generated PDF417 barcodes.
- Previously the processing time of CVCCodeBarcode was offset by about 10 ms when working with USB or parallel port dongles.  
This is no longer the case.

	Win32	Win64
CVCBarcode.dll	2.2.0.5	2.2.0.2
CVCBarcode.ocx	2.0.1.0	N/A
ZBCLib.dll	2.2.0.5	2.2.0.2
iCVCBarcode.dll	2.0.0.26	

**Changes with CVB version 10.2 Hotfix****News**

- Fixed: CVB Barcode crashed with certain PDF417 codes

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

ZBCLib.dll 2.1.8.1

**Changes with CVB version 10.2**

The new version of CVC Barcode provides support for several new codes and returns more detailed information about 1D codes.

**New functionality**

- new 1D codes supported: Code32, Code11 and MSI Plessey
- new 2D codes supported: MicroPDF417 (not supported in omni directional mode!)
- new postal codes supported: Four-state KIX, Four-state Royal Mail, Four-state Australian and Four-state USPS codes
- returns the coordinates of the corners of 1D codes as well now, plus the rotation and the center of gravity

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll 2.1.8.0  
 CVCBarcode.ocx 2.0.1.0  
 ZBCLib.dll 2.1.8.0

iCVCBarcode.dll

1.3.0.0

**Changes with CVB version 10.1**

The new version of the Barcode Tool provides new functionality and some fixes or improvements.

**Fixed Bugs**

- After a version mismatch between dongle driver and dongle library the dongle queries could potentially take very long time in CVB 10.0. This issue has been fixed.
- The number of barcode configurations that is available to applications has been increased from 100 to 200 and a new return value has been introduced to indicate situations where the 200 configurations are all in use already.
- A malformed function signature in the iCVCBarcode.dll managed wrapper has been corrected.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.1.5.0
CVCBarcode.ocx	2.0.1.0
ZBCLib.dll	2.1.5.0
iCVCBarcode.dll	1.2.2.0

**Changes with CVB version 10.0**

The new version of the Barcode Tool provides new functionality and some fixes or improvements.

**New Functions**

- Datamatrix codes: checking of the Padding-Bytes
- Optimization for finding small codes in very big images with the new functions CvcBcSetReadout and CvcBcGetReadout.  
The detailed function descriptions are available in the CVB Barcode Manual.
- Added functionality to read QR codes, PostNet codes and Planet codes.
- Enabled multithreaded barcode and matrix code reading (note that each thread needs its own configuration and result structure).

**Fixed Bugs**

- Fix for Code 39, 2of5 industrial and 2of5 interleaved:  
The calculated module sizes were not always passed correctly to the info-structure.
- Codabar

The check digit was not always be checked although the option was enabled.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.1.1.0
CVCBarcode.ocx	2.0.1.0
ZBCLib.dll	2.1.1.0
iCVCBarcode.dll	1.2.0.1

### Version 3.1

The new version of the Barcode Tool fixes problems in the ActiveX control.

#### Fixed Bugs

- The return code of 'LoadConfiguration' might be undefined.
- The ActiveX control displays a MessageBox when no Image was passed before calling Execute.
- The code in the CVSError Event of the Barcode ActiveX control can not suppress a MessageBox that is displayed by the control.
- A bug in the Delphi runtime (VCL) caused problems when using more than one ActiveX control developed in Delphi in the same application at the same time.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.0.0.8
CVCBarcode.ocx	2.0.1.0
ZBCLib.dll	2.0.0.8

### Version 3.0

The new version of the Barcode Tool now supports RSS-Codes und Code Grading.

#### New Functions

- Starting with version 3.0, Barcode is able to read the so-called RSS-Codes (RSS-14, RSS-14 Truncated, RSS-14 Stacked, RSS-14 Stacked Omni directional, RSS Limited). Code-Grading is now available for Data Matrix and 2D-Pharma-Codes. For more information about the new functionality please look at the Manual.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.0.0.8
CVCBarcode.ocx	2.0.0.6
ZBCLib.dll	2.0.0.8

**Version 2.3**

- Bug fix regarding an error while reading an PDF417 barcode. This is fixed with a new version of the ZBCLib.dll 2.0.0.4
- Bug fix of the Code128 functions ( new ZBCLib.dll V2.0.0.5)
- Optimizing of the speed of the license-check. This is fixed with a new version of the ZBCLib.dll and cvcBarcode.dll.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.0.0.6
CVCBarcode.ocx	2.0.0.6
ZBCLib.dll	2.0.0.6

**Version 2.2.1**

The new version of the Barcode Tool brings about a few some minor changes in the Barcode dll and the ZBCLib dll (better inkjet decoding).

The new ZBCLib-dll also improves the reliability while reading barcodes in very huge images.

Furthermore there are two new tutorials, made with the Borland C++ Builder .

Us usually the necessary header- and library-files for the C++ Builder are installed into the CVB\Lib\C directory.

For general information using the C Builder with Common Vision Blox please refer to the Manual.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.0.0.2
CVCBarcode.ocx	2.0.0.6
ZBCLib.dll	2.0.0.3

**News with Service Pack 1 of CVB 8.0**

This version supports the ThinkEye TE-100camera.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.0.0.1
CVCBarcode.ocx	2.0.0.6
ZBCLib.dll	2.0.0.1

**Version 2.2**

The new version of the Barcode Tool has new features and changes in the Barcode control, the Barcode dll and the ZBCLib dll.

The new version saves the magic number for licensing the tool in the entry [Asentics Barcode Library] of the license.ini file.

Previously this information was stored under [ZESS Barcode Library] .

The Barcode control now supports the context sensitive F1 help for all properties, methods and events.

From now it on appears in a development environment under the name Common Vision Barcode Control.

This change has no effects on existing programs.

### New Functionality

- Starting with version 2.2 the tool is able to read Pharma Codes.  
For more information about the new functions, methods and properties please refer to the Manual.
- There is extended functionality for reading Data Matrix codes.  
For example distorted codes are readable now as well as codes which are not covered by the specification (dotted data matrix codes) or codes which are printed with laser or inkjet printers.

### Fixed Bugs

- In the previous version it could happen that the application crashed with some PDF 417-barcodes.  
This problem in the ZBCLib.dll is fixed.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	2.0.0.4
CVCBarcode.ocx	2.0.0.0
ZBCLib.dll	2.0.0.0

### Version 2.1

The new version of the Barcode Tool has changes in the Barcode control and the Barcode dll.

### Fixed Bugs

- In the previous version it could happen with very large images that the position of 1D barcodes returned by the barcode tool was wrong due to an integer overflow.  
This problem is fixed now.

### New Functions

- Starting with version 2.1, Barcode is able to read Sony Codes. Therefore, two new functions have been added, CvcBcSetSonyCode and CvcBcGetSonyCode.  
For more information refer to the Manual.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Barcode are:

CVCBarcode.dll	1.5.0.0
CVCBarcode.ocx	1.0.20
ZBCLib.dll	N/A

### 1.2.3 BayerToRGB

#### BayerToRGB Release Notes

##### Changes with CVB version 13.2

- Added Ubuntu 18.04 Linux builds.

	Win32	Win64	Linux
etBayerToRGB.dll	1.10.1.772	1.10.1.772	1.1001.772
iBayerToRGB.dll	3.9.2.3		N/A

##### Changes with CVB version 13.1

- Added Linux builds.

	Win32	Win64	Linux
etBayerToRGB.dll	1.10.0.737	1.10.0.737	1.1000.737
iBayerToRGB.dll	2.2.1.701		N/A

##### Changes with CVB version 11.2

In CVB 11.0 and 11.1 the documentation of the etBayerToRGB.dll was missing.

	Win32	Win64
etBayerToRGB.dll	1.8.4.254	1.8.4.254
iBayerToRGB.dll	2.2.1.306	

##### Changes with CVB version 11.0

Starting with Common Vision Blox 11.0, BayerToRGB will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

	Win32	Win64
etBayerToRGB.dll	1.8.2.66	1.8.0.53
iBayerToRGB.dll	2.0.0.82	

### Changes with CVB version 10.2

The BayerToRGB tool has been prepared for the up coming 64 bit release of Common Vision Blox and therefore the DLL has been rebuilt.

There were no changes to the programming interface or the functionality of the tool.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to BayerToRGB are:

etBayerToRGB.dll	1.7.0.63
iBayerToRGB.dll	1.0.1.0

### Changes with CVB version 10.1

The etBayerToRGB.dll has been relinked with an updated dongle protection library that permits remote desktop access to applications built with it.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to BayerToRGB are:

etBayerToRGB.dll	1.6.2.0
iBayerToRGB.dll	1.0.1.0

### Changes with CVB version 10.0

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

There are no changes in the Tool itself.

BayerToRGB is now part of the Foundation Package (but will continue to be available as a separate tool as well).

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to BayerToRGB are:

etBayerToRGB.dll	1.6.1.3
iBayerToRGB.dll	1.0.1.0

**Changes prior to CVB version 10**

**Version 1.4.1:** Added .NET support.

**Version 1.4:** This release is required for all CVB dongles over number 10000.

**Version 1.3:** Fixes a strange behavior regarding the licensing of the tool.

**Version 1.2:** This release is required for all CVB dongles over number 5600.

**Version 1.1:** BayerToRGB has a new function called etCreateOutputImage. For more information refer to the Manual.

**1.2.4 Blob****Blob Release Notes****Changes with CVB version 13.2**

- Added Ubuntu 18.04 Linux builds.

	Win32	Win64	Linux
CVCBlob.dll	4.8.2.352	4.8.2.352	4.802.352
CVBlob.ocx	1.6.0.2042	1.6.0.2042	N/A
iCVCBlob.dll	3.9.2.3		N/A

**Changes with CVB version 13.1**

- Result reporting no longer takes into account the image's coordinate system (this behavior was introduced by an error in Common Vision Blox 13.00.xxx).

	Win32	Win64	Linux
CVCBlob.dll	4.8.1.279	4.8.1.279	4.801.279
CVBlob.ocx	1.6.0.2042	1.6.0.2042	N/A
iCVCBlob.dll	2.3.0.772		N/A

**Changes with CVB version 13.0**

- A bug in the x64 build in the determination of the minimal convex perimeter has been fixed.
- A bug in the calculation of the convex projection that could lead to inconsistent corner coordinates has been fixed.
- Added Linux builds.

	Win32	Win64	Linux
CVCBlob.dll	4.7.1.230	4.7.1.230	4.701.240
CVBlob.ocx	1.4.2.1796	1.4.2.1796	N/A
iCVCBlob.dll	2.3.0.661		N/A

### Changes with CVB version 12.0

- In the CVCBlob.ocx a bug was fixed that caused a reference count leak (and subsequently a memory leak) if the ResultImage property was queried.

	Win32	Win64
CVCBlob.dll	4.5.4.357	4.5.4.357
CVBlob.ocx	1.4.2.969	1.4.2.969
iCVCBlob.dll	2.3.0.363	

### Changes with CVB version 11.2

- Starting with Common Vision Blox 11.2, Blob is also available for 64 bit platforms.
- New functions (BlobLSStart, BlobLSNext, BlobLSEnd, BlobLSGetOpenObjects and BlobLSGetStartLine) have been introduced for handling endless material (line scan acquisition).
- The CVCBlob.ocx no longer fires a CVSError event with error code 503 (ERROR\_INVALIDRESULTINDEX) when no blob has been found.
- A problem in handling large images where a foreground/background transition occurs on roughly every other pixel has been fixed.
- A cleanup problem on the blob result list has been fixed.

	Win32	Win64
CVCBlob.dll	4.5.3.250	4.5.3.250
CVBlob.ocx	1.4.1.753	1.4.1.753
iCVCBlob.dll	2.3.0.279	

### Changes with CVB version 11.0

In Common Vision Blox 11.0, Blob will only be available on the 32 bit platform!

Blob now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

	Win32	Win64
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CVCBlob.dll	4.2.2.32	N/A
CVBlob.ocx	1.2.1.34	N/A
iCVCBlob.dll	2.0.0.0	N/A

### Changes with CVB version 10.2

The CVC Blob tool has been prepared for the up coming 64 bit release of Common Vision Blox and therefore the DLL and the ActiveX control have been rebuilt.

There were no changes to the programming interface or the functionality of the tool.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.1.3.51
CVBlob.ocx	1.2.1.34
iCVCBlob.dll	1.0.1.0

### Changes with CVB version 10.1

The CVCBlob.dll has been relinked with an updated dongle protection library that permits remote desktop access to applications built with it.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.1.1.1
CVBlob.ocx	1.2.0.0
iCVCBlob.dll	1.0.1.0

### Changes with CVB version 10.0

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

There are no changes in the Tool itself.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.1.0.1
CVBlob.ocx	1.2.0.0
iCVCBlob.dll	1.0.1.0

### Blob version 4.1.4

Fixes and news in the Blob Tool:

- On the CVBlob.ocx AOI parameters were set properly but not activated when reloading a new image.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.0.0.22
CVBlob.ocx	1.0.0.11

### **Blob version 4.1.3**

Fixes and Improvements in the Blob Tool:

- A memory leak was fixed.
- An Internal buffer overflow when too many streaks were in one line was fixed.
- In the last release, Blob ignored the setting of "BlobSetObjectTouchBorder" where the right border was involved.
- In the previous version the number of projections defined through the function SetNumFeret was ignored.
- A multithreading problem in BlobSetImage has been fixed.
- The documentation of Sort order of function BlobSetSortMode has been corrected.
- The sort order in the VB and VC demo has been changed.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.0.0.22
CVBlob.ocx	1.0.0.9

### **Blob version 4.1.2**

Fixes and news in the Blob Tool:

- SetImage has become faster.
- Blobs touching the right border of an image have not been ignored according to the filter parameters. This has been fixed.
- Fixed a result sorting problem
- CVBlob.ocx: When no results are found, an error message "Invalid Row Index" popped up after pressing "Execute" on the parameter testing property page.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.0.0.17
CVBlob.ocx	1.0.0.9

### **Blob version 4.1.1**

Fixes and news in the Blob Tool:

- CVCBlob.dll:
  - MinMomentPoints were not calculated correctly with some images
  - Wrong sort order when sorting by Y position fixed
  - Binarization Error fixed
  - FilterWidthMax and FilterBlobHoleCount didn't work correctly
  - Problems with last line/column in result image fixed
  - BlobDestroy(..) did not decrement the RefCount of the assigned image
- CVBlob.ocx:
  - Convex Perimeter Marker fails on some images
  - Minor improvements to the property pages
  - Bug in SetBlobIndex fixed
- New Visual Basic Tutorial using Blob Control and showing the Property Page

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.0.0.14
CVBlob.ocx	1.0.0.5

### **Blob version 4.1**

There are a few fixes and the Blob Tool. A new ActiveX control for Blob (CVBlob.ocx) is now also available.

- fix: sometimes the calculation of moments gave wrong results (coordinates or angles)
- fix: in the previous versions it could happen that not all results were reported when sorting by size was active and the number of results was limited
- new: Blob ActiveX Control available! For details refer to the Blob Manual and for usage of the control please have a look at the various CVB Blob Tutorials.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.0.0.6
CVBlob.ocx	1.0.0.0

### **Blob version 4.0.0.3**

Fixes in the new release:

- Bug in "Moment Calculation" using large AOIs fixed
- BlobBinariseImage now works properly on multi plane Images. Destination plane is always Plane 0.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll

4.0.0.3

**General information about Blob version 4.0**

The new version of the Blob Tool has several new features:

- a set of new functions (see list below; for details please refer to the CVB Manual)
- processing speed has increased notably
- memory usage has been reduced notably
- support monochrome images with more than 8 bits per pixel (10, 12 or 16 bit images)
- comes with a library and a tutorial for the Borland C++ Builder (see general notes on using the C++ Builder with CVB in the Manual)

The necessary header- and library-files for the C++ Builder are installed as usual to the CVB\Lib\C directory.

**New and changed functions**New functions

BlobSetMaxMemoryEx	BlobGetMaxMemoryEx
BlobGetCenterEx	
BlobGetNumFeretEx	
BlobGetFeretDiameter	
BlobGetFeretDiameterAngle	
BlobGetFeretDiamMinMax	
BlobGetFeretDiamMinMaxAngle	
BlobGetFeretDiamMinMaxBBox	
BlobGetFeretDiamMin	
BlobGetFeretDiamMinAngle	
BlobGetFeretDiamMinBBox	
BlobGetFeretDiamMax	
BlobGetFeretDiamMaxAngle	
BlobGetFeretDiamMaxBBox	

Obsolete functions

BlobSetMaxMemory
BlobGetMaxMemory

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	4.0.0.1
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### New functions in version 3.0

The new version of the Blob Tool has NO changes and NO additional functionality.

The new DLL is only there for design reasons (removal of the SmartWeb.dll).

The SmartWeb.dll is no longer part of the Blob Tool. This version supports the ThinkEye TE-100 camera.

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	3.0.0.0
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## General information about Blob version 2.0

### Reasons for version 2.0 of Blob

Three function names have changed in the new version 2.0 of Blob for functional reasons (see the "Conversion of old applications" section). Some new functions have also been added.

You must have Common Vision Blox 7.0 installed on your computer to use Blob Version 2.0 as it will not run with a CVC 1.4 installation.

The update from CVC Blob version 1.0 to Blob version 2.0 is free of charge.

### New functionality

- A new image can be passed to a blob object with the BlobSetImage function.  
The internal tables are not recreated in this process. This makes it faster than operating with a new blob object.  
The BlobCreate function can also be called with an image handle of NULL if no image handle is available at the time of creation of the blob object.
- BlobIsBlob is available to check whether a blob object handle is valid.
- BlobGetExecTime returns the execution time of the last instance of the BlobExec function.
- An image can be binarized with BlobBinariseImage to visualize it.
- A maximum number of blobs to be extracted can be specified with BlobSetNumBlobs.  
Let's assume that an image contains 5,000 objects but you only want the three biggest ones.  
In this case you have to call BlobSetMaxMemory in such a way that Blob can cope with 5,000 objects. You then use BlobSetNumBlobs to tell Blob that you only want three of these 5,000 blobs.  
It is necessary to perform a sort to get the three biggest objects.
- Parameter settings can be read with the various BlobGetxxx functions.

### Renamed functions / conversion of old applications

Pay attention to the following functions when converting old applications that were created with CVC Blob 1.0.

BlobGetMaxMemory	Renamed, previous function name: BlobGetMaxNumBlobs
BlobSetMaxMemory	Renamed, debugged, previous function name: BlobSetMaxNumBlobs
BlobGetSize	Renamed, previous function name: BlobGetBlobSize

The parameters for these functions have not been changed.

## New and changed functions

### New functions

BlobGetMaxMemory	BlobSetMaxMemory
BlobSetImage	BlobsBlob
BlobGetSize	BlobGetLimitArea
BlobGetLimitHeight	BlobGetLimitWidth
BlobGetHoleLimitArea	BlobGetHoleLimitHeight
BlobGetHoleLimitWidth	BlobGetLimitNoHoles
BlobGetLimitNoMeasHoles	BlobGetObjectFeatureRange
BlobGetObjectTouchBorder	BlobGetExtractionMode
BlobGetExecTime	BlobSetNumBlobs
BlobSetSortParameter	BlobBinariseImage

### Obsolete functions

BlobSetMaxNumBlobs	BlobGetMaxNumBlobs
BlobGetBlobSize	

### Debugged functions

The error in the BlobSetMaxNumBlobs function, which is now named BlobSetMaxMemory, has been eliminated.

This means it is also possible to analyze images containing more than 2,000 objects (= default value).

The file versions of the ActiveX control(s), executable(s) and DLL(s) currently belonging to Blob are:

CVCBlob.dll	2.0.0.0
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## 1.2.5 Color

## Color Release Notes

**Changes with CVB version 11.2**

A problem with filter generation introduced in CVB 11.0 has been fixed.

A problem with CTS serialization introduced in CVB 11.0 has been fixed.

	Win32	Win64
CVCColor.dll	2.7.0.3	N/A
CVCColorFilter.ocx	2.0.0.1	N/A
CVCColorSearch.ocx	2.0.0.1	N/A
CVCColorTeach.exe	1.6.0.0	N/A
XSplitter.ocx	1.0.0.0	N/A
iCVCColor.dll	2.4.0.159	N/A

**Changes with CVB version 11.0**

In Common Vision Blox 11.0, Color will only be available on the 32 bit platform!

Color now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

	Win32	Win64
CVCColor.dll	2.6.1.48	N/A
CVCColorFilter.ocx	2.0.0.1	N/A
CVCColorSearch.ocx	2.0.0.1	N/A
CVCColorTeach.exe	1.6.0.0	N/A
XSplitter.ocx	1.0.0.0	N/A
iCVCColor.dll	2.1.0.18	N/A

**Changes in CVB version 10.0**

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

There are no changes to the Tool itself.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Color tool are:

CVCColor.dll	2.0.0.4
CVCColorFilter.ocx	2.0.0.1
CVCColorSearch.ocx	2.0.0.1
CVCColorTeach.exe	1.6.0.0
XSplitter.ocx	1.0.0.0
iCVCColor.dll	1.0.1.0

### Changes in CVB version 8.0.3

The CVCColor.dll was recompiled to accommodate the changes in the licensing concept of Common Vision Blox.

CVCColor.dll	2.0.0.4
CVCColorFilter.ocx	2.0.0.1
CVCColorSearch.ocx	2.0.0.1
CVCColorTeach.exe	1.6.0.0
XSplitter.ocx	1.0.0.0

### Changes in version 2.1

No changes.

## 1.2.6 Edge

### Edge Release Notes

#### Changes with CVB version 13.2

- Added Ubuntu 18.04 Linux builds.

	Win32	Win64	Linux
CVCEdge.dll	2.6.1.621	2.6.1.621	2.601.621
CVEdge.ocx	1.2.6.1955	1.2.6.1955	N/A
iCVCEdge.dll	3.9.2.3		N/A

#### Changes with CVB version 13.1

- Added Linux builds.

	Win32	Win64	Linux
CVCEdge.dll	2.6.0.539	2.6.0.539	2.600.539
CVBlob.ocx	1.2.5.1745	1.2.5.1745	N/A
iCVCBlob.dll	2.2.1.761		N/A

### Changes with CVB version 11.2

- A problem in handling reference counting of objects of type `Cvb.SharedEdge` and `Cvb.SharedProjection` leading to unrecoverable exceptions was fixed in the `iCVCEdge.dll`.
- A possible memory overwrite (and access violation) when passing a NULL pointer to `GetProjection/GetNormProjection` has been fixed.

	Win32	Win64
CVCEdge.dll	2.4.0.189	2.4.0.189
CVEdge.ocx	1.2.4.597	1.2.4.597
iCVCEdge.dll	2.2.1.271	

### Changes with CVB version 11.0

Starting with Common Vision Blox 11.0, the Edge tool will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

### Fixes:

- Depending on the placement of the search area, it was possible for the `OSFindFirstEdge` function to hit uninitialized data which can potentially lead to an application crash. This is now fixed.

	Win32	Win64
CVCEdge.dll	2.3.5.89	2.3.2.64
CVEdge.ocx	1.2.2.82	1.2.2.85
iCVCEdge.dll	2.0.1.92	2.0.1.82

### Changes with CVB version 10.2

The CVC Edge tool has been prepared for the up coming 64 bit release of Common Vision Blox and therefore the DLL and the ActiveX control have been rebuilt.

In the `CVCEdge.dll` a memory leak occurring with dongle serial numbers > 50000 has been fixed.

Thread safety of the tool has been improved.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

CVCEdge.dll	2.2.0.40
CVEdge.ocx	1.1.3.29
iCVCEdge.dll	1.0.2.0

### Changes with CVB version 10.1

CVCEdge.dll and CVEdge.ocx have been relinked with an updated dongle protection library that permits remote desktop access to applications built with it.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

CVCEdge.dll	2.1.1.0
CVEdge.ocx	1.1.2.0
iCVCEdge.dll	1.0.2.0

### Changes with CVB version 10.0

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.0.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

CVCEdge.dll	2.1.0.0
CVEdge.ocx	1.1.0.1
iCVCEdge.dll	1.0.2.0

### Changes in Version 2.1.3

The function FindBestEdge returned invalid results when used in 'Don't care Polarity' mode.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

CVCEdge.dll	2.0.1.4
CVEdge.ocx	1.0.0.2

### Changes in Version 2.1.2

When detecting edges in an AOI from top to bottom the returned x coordinate of the edge doesn't match the left or right coordinate of the search area.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

CVCEdge.dll	2.0.1.2
CVEdge.ocx	1.0.0.7
CVCEdgeX.ocx	1.0.0.2

### Changes in Version 2.1.1

A bug in the TSxxx and CSxxx functions caused inconsistent x positions for edges that have been detected vertically (horizontal edges).

Typically only the y component of such an edge detection would be used, so that the standard user wasn't effected by this bug.

The Execute method of the Common Vision Edge Control returned FALSE if using the EDGE\_PAIR / THRESHOLD\_SUB function, even if it found the edge pair.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

CVCEdge.dll	2.0.1.0
CVEdge.ocx	1.0.0.7
CVCEdgeX.ocx	1.0.0.2

### Changes in Version 2.1

#### New

- The new version supports bit depths of more than 8 bit per pixel
- A new function OSFindBestEdge returns the position of the strongest edge with sub pixel accuracy (refer to Manual).
- The new managed wrapper supports all .NET languages.  
Add a reference to CVBRoot\LIB\NET\icvcEdge.DLL to your .NET application.
- A new Common Vision Edge Control (cvEdge.ocx) has been added for user under Visual Basic, Visual C++, C++Builder, Delphi and iTuition.  
It supports all edge detection methods of the library as well as high dynamic bit depths.  
The previous Edge Control (cvcEdgeX.ocx Version 1.0.0.2) is still shipped with product but use of the new Edge ActiveX Control (cvEdge.ocx) is recommended.
- New tutorials with source code for  
Delphi: DelphiEdgeOCX  
VC: VCEdgeOCX  
VC.NET unmanaged and CS.NET  
C++Builder

**Fixed Bugs**

- A bug in the function OSFindEdgePair caused edges not to be detected while they could be detected using the OSFindFirstEdge function.
- A bug in all OSxxx and all CSxxx functions caused shifted edge positions if the AOI was rotated. Small rotations caused greater shifts.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are

cvcEdge.dll	2.0.0.5
cvEdge.ocx	1.0.0.5
cvcEdgeX.ocx	1.0.0.2

**Changes in version 2.0**

- The new version supports the ThinkEye TE-100 camera.
- A new set of functions supports edge detection based on the second derivative.
- User defined filter algorithms can be implemented with a new set of projection functions. Projections can be filtered with a user defined filter kernel.
- Detailed information about the new functions can be found in the manual of Edge.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

cvcEdge.dll	2.0.0.2
cvcEdgeX.ocx	1.0.0.2

**Changes in version 1.6**

- There are no technical changes in the new version of the Edge Tool. Only preparations for the port to the ThinkEye TE-100 have been implemented.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

cvcEdge.dll	1.3.1.3
cvcEdgeX.ocx	1.0.0.1

**Changes in version 1.5**

- Due to a bug the tool couldn't find edges if the AOI had negative values. This happens e.g. if the origin is moved.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Edge tool are:

cvcEdge.dll	1.3.1.0
cvcEdgeX.ocx	1.0.0.1

### 1.2.7 GEVServer

## GEVServer Release Notes

For a detailed description see the GigE Vision Server documentation in the CVB Manual.

### Changes in CVB version 13.2

- Added GSNI\_EventID for GSNGet/SetInfoAsInteger.
- Fixed dead-lock on WRITEREG while stopping transfer.
- A means for resetting the block ID has been added.

	Win32	Win64	Linux
CVGEVServer.dll	3.6.3.1059	3.6.3.1059	3.603.1059
iCVGEVServer.dll	3.9.2.3		N/A

### Changes in CVB version 13.0

- Switched to VC14 compiler.
- The message channel is now flushed periodically to avoid allocating too many system resources on the IP stack implementation level.
- Fixed a deadlock that could occur when the CCP was written while the server is stopped.
- Improved acquisition stop handling.

	Win32	Win64	Linux
CVGEVServer.dll	3.4.0.797	3.4.0.797	3.400.797
iCVGEVServer.dll	1.4.0.411		N/A

### Changes in CVB version 12.1

- RGBA, BGRA and BGR color formats are now handled properly.

	Win32	Win64	Linux
CVGEVServer.dll	2.6.4.4	2.6.4.4	2.801.116

iCVGEVServer.dll	1.4.0.300	N/A
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### New in CVB version 12.0

- The code has been optimized to implement a zero-copy strategy that greatly reduces CPU load while GigE Vision Server is running.
- GigE Vision Server now supports packet resend.
- The GigE Vision Server now implements a message channel.
- The GigE Vision Server is now capable of sending arbitrary GEV compatible image data as well as chunk data.

	Win32	Win64	Linux
CVGEVServer.dll	2.6.2.385	2.6.2.385	2.601.370
iCVGEVServer.dll	1.4.0.241		N/A

### Changes in CVB version 11.2

- The function GSRemoveNode no longer returns an error after successful completion.
- GEVServer now works fine even if both ends of the communication use the socked driver.
- A potential crash that could occur when a GSStop is called while a client is about to connect has been eliminated.
- Fixed payload size calculation (e.g. wrong values for Mono8 images)
- GenApi Nodes:
  - Added Cust::BitMaskMax and Cust::Compression under a Std::Root category to properly display them in the CVB GenApiGrid.
  - Removed unnecessary imposed access mode read-only from Std::Width and Std::Height and set min/max values to better inter-operate with third-party receivers.
  -

	Win32	Win64
CVGEVServer.dll	1.4.6.118	1.4.6.118
iCVGEVServer.dll	1.4.0.171	1.4.0.171

### Changes in CVB version 11.0

Starting with Common Vision Blox 11.0, the GigE Vision Server will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

The GigE Vision Server complies to the GigE Vision standard 1.2 except for the IP address assignment which is handled by the operating system.

Connection handling, device control and image streaming are fully standard compliant. It fully complies to GenICam standard 2.1.

#### Changes:

- The 5000 frames limit is now replaced with a watermark in the image if the license is not valid.
- Default feature names/behavior is adapted to the GenICam Standard Features Naming Convention (SFNC) 1.4.
- Added color formats BGR8, BGRA8 and RGBA8 to improve streaming performance for different RGB memory layouts.
- Added GEV test data for test packet mechanism to verify that streaming data is sent correctly.
- Added GEV firewall traversal registers.
- Added sanity checks to catch doubly defined enum entry values and symbolics in Enumeration nodes.

#### Fixes:

- With the previous version, if the client software connecting to the GigE Vision Server was using the JAI GigE Vision SDK a Server Stop/Start cycle resulted in broken streaming.
- If the previous version of the GigE Vision Server received a unroutable (network-wise) GVCP Packet it crashed.
- Timestamp values were wrong sometimes due to a bug in the MaskedIntReg.
- Fixed an error in feature node serialization to XML for special XML characters.

	Win32	Win64
CVGEVServer.dll	1.3.2.58	1.3.1.53
iCVGEVServer.dll	1.1.0.38	1.1.0.0

#### Changes in CVB Version 10.2

A service release of the GigE Vision Server tool was published introducing the following changes:

- Fixed CCP timeout problem on multiprocessor systems (not multi core).  
Timer units now always have microsecond granularity with millisecond resolution.  
This also affects timestamp features and inter packet delay.
- Fixed wrong endianness in ReadReg acknowledge packet.
- Added more communication error reporting to comply to GEV Validation Framework.
- Added TLParamsLocked feature to Std::Root category to improve configuration in some third-party transport layers.

CVGEVServer.dll	1.2.6.1
iCVGEVServer.dll	1.0.0.0

**New in CVB Version 10.1 SP1**

A service release of the GigE Vision Server tool was published introducing the following changes:

- Images with 12 bits per pixel (monochrome) are now handled properly by the GigE Vision Server.
- The GigE Vision Server now also permits the use of Multicast destinations with demo licenses.
- A heap corruption problem that occurred when a GSNODE handle was released after the owning GEVSRV instance has been fixed.

CVGEVServer.dll	1.2.3.0
iCVGEVServer.dll	1.0.0.0

**New in CVB Version 10.1**

Starting with Common Vision Blox 10.1, GEVServer is a new tool of the Common Vision Package.

The GigE Vision Server complies to the GigE Vision standard 1.0 except for the IP address assignment which is handled by the operating system.

Connection handling, device control and image streaming are fully standard compliant.

It fully complies to GenICam standard 1.1.0.

**Known limitations:**

- Packet Resend is not implemented
- Message Channel is not implemented
- Remote IP assignment is not possible (LLA, DHCP, static and persistent IP)  
IP management is done by the operating system
- Supported color formats:
  - Mono8
  - Mono10 (for 9 and 10 bits per pixel images)
  - Mono12 (for 11 and 12 bits per pixel images)
  - Mono16 (for 13 to 16 bits per pixel images)
  - RGB8
- IFloat and derived nodes are missing (IFloat, IFloatReg, SwissKnife and Converter)
- MaskedIntReg and IntConverter nodes are missing
- Unnecessary nodes (will not be implemented):  
IIDC 1394 nodes: DcamLock, SmartFeature, ConfRom, TextDesc and IntKey  
Grouping nodes: StructRect and Group element

A header and library file exist for Visual C/C++ and Borland C Builder 6.

Also a .NET assembly for .NET 2.0 or higher is provided.

CVGEVServer.dll	1.0.1.1
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iCVGEVServer.dll

1.0.0.0

**1.2.8 GPU Processing****GPU Processing Release Notes****Changes in CVB version 13.0**

- Switched to VC14.
- CVDirect3D.dll has been adapted to the new internal interface structure introduced in Common Vision Blox 13.00.000.

Note that as the only supported 64 bit operating system is currently Windows 7 x64 the only Shader Model usable in 64 bit applications is Shader Model 2.0 (3.0 is currently only supported on Windows XP).

Remember to install the DirectX runtimes on your system (available here: <https://www.microsoft.com/en-US/download/details.aspx?id=34429>).

	Win32	Win64
CVDirect3D.dll	2.0.3.724	2.0.3.724
iCVDirect3D.dll	2.4.0.734	2.4.0.734

**Changes in CVB version 11.0**

Starting with Common Vision Blox 11.0, GPUprocessing will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

Note that as the only supported 64 bit operating system is currently Windows 7 x64 the only Shader Model usable in 64 bit applications is Shader Model 2.0 (3.0 is currently only supported on Windows XP).

Remember to install the DirectX runtimes on your system.

The runtime installer is located in the folder \Redist\Runtime Setups\Microsoft and it works for both, 32 and 64 bit operating systems.

	Win32	Win64
CVDirect3D.dll	1.6.4.277	1.6.4.277
iCVDirect3D.dll	2.4.0.300	2.4.0.300

**Changes in CVB version 10.2**

A service release of the GPUprocessing tool was published introducing the following changes:

**New functionality**

- The tool now supports 32bit floating point textures.
- A new function called D3DRenderText allows text output to textures (refer to the manual).
- A new function called D3DBltRect allows AOI copying between textures (refer to the manual).

**Fixed Bugs**

- The image data was corrupted when uploading 16bit images to 16bit textures on the GPU memory.  
The bug has been fixed.
- GPUprocessing now initializes the internally used graphics device using the D3DCREATE\_FPU\_PRESERVE flag to prevent problems that might arise from the modification of the FPU control word that is carried out when creating without this flag.

CVDirect3D.dll	1.5.0.60
iCVDirect3D.dll	2.1.0.0

**Changes in CVB version 10.1 SP1**

A service release of the GPUprocessing tool was published introducing the following changes:

- In the previous release, GPU variables were only applied for the first texture in a TextureEntrance but not for the downstream steps of a processing pipeline.

CVDirect3D.dll	1.3.0.3
iCVDirect3D.dll	2.0.0.1

**Changes in CVB version 10.1**

Starting with Common Vision Blox 10.1, GPU Processing is a new tool of the Common Vision Package.

This initial version supports Microsoft DirectX 9.0c October 2005.

Unfortunately Microsoft, in an effort to support DirectX 9.0c under Vista, came up with several new versions whose version numbers are identically set to 9.0.c although the functionality changed notably, specially for the pixel shader version 3.

CVB GPU processing relies on the correct DirectX version to be installed for shader model 3 support and you should carefully make sure that your computer has the October 2005 version installed to get the best possible results using shader model 3, as downgrading the DirectX version may otherwise require a reinstallation of the operating system.

In order to prevent unwanted side-effects, the Common Vision Blox Setup does not automatically install DirectX on your computer!

A runtime installation of the DirectX 9.0c (October 2005) runtimes is located on the Common Vision Blox DVD in the directory \Redist\Runtime Setups\Microsoft.

You may use this runtime setup to use the CVB GPU processing package on any target machine.

For development purposes however we recommend downloading the [DirectX SDK from Microsoft](#) as this comes with a documentation of the High Level Shader Language (HLSL).

CVDirect3D.dll	1.3.0.2
iCVDirect3D.dll	2.0.0.1

### 1.2.9 LightMeter

#### LightMeter Release Notes

##### Changes with CVB version 13.0

- Added Ubuntu 18.04 Linux build.

	Win32	Win64	Linux
LightMeter.dll	2.6.1.783	2.6.1.783	2.601.783
DrawGraph.dll	1.6.1.807	1.6.1.807	N/A
CVCLightMeter.ocx	1.6.1.2177	1.6.1.2177	N/A
CVCDrawGraph.ocx	1.6.3.791	1.6.3.791	N/A
iLightMeter.dll	3.9.2.3		N/A

##### Changes with CVB version 13.1

- Added Linux build.

	Win32	Win64	
LightMeter.dll	2.6.0.717	2.6.0.717	2.600.717
DrawGraph.dll	1.6.0.710	1.6.0.710	1.6.0.764
CVCLightMeter.ocx	1.6.0.1965	1.6.0.1965	N/A
CVCDrawGraph.ocx	1.6.2.744	1.6.2.744	N/A
iLightMeter.dll	2.2.1.697		N/A

**Changes with CVB version 13.0**

- Attempts to build histograms on floating point valued images are now blocked (LightMeter.dll).
- Limited number of grid lines on the property page to 128 (CVCDrawGraph.ocx).

	Win32	Win64
LightMeter.dll	2.2.2.651	2.2.2.651
DrawGraph.dll	1.6.0.710	1.6.0.710
CVCLightMeter.ocx	1.6.0.1743	1.6.0.1743
CVCDrawGraph.ocx	1.6.2.688	1.6.2.688
iLightMeter.dll	2.2.1.697	

**Changes with CVB version 11.2**

- Changing the background color in the CVCDrawGraph.ocx's property page will now update the actual appearance of the control.
- The default colors for background and foreground for the DrawGraph have been changed to ButtonFace/ButtonShadow.
- The LightMeter.dll now internally clamps the area of interest to the image coordinates to prevent problems when AOIs are (at least partially) outside the image.

	Win32	Win64
LightMeter.dll	2.2.1.260	2.2.1.260
DrawGraph.dll	1.6.0.279	1.6.0.279
CVCLightMeter.ocx	1.6.0.736	1.6.0.736
CVCDrawGraph.ocx	1.6.0.289	1.6.0.289
iLightMeter.dll	2.2.1.298	

**Changes with CVB version 11.1**

- The LMExecute function no longer returns TRUE if no image to be processed is available (as a Side effect, the LightMeter OCX's Execute method also correctly returns FALSE now if no image can be processed).

	Win32	Win64
LightMeter.dll	2.1.3.56	2.1.3.55
DrawGraph.dll	1.5.3.67	1.5.1.57
CVCLightMeter.ocx	1.5.2.77	1.5.2.80
CVCDrawGraph.ocx	1.5.1.71	1.5.1.74
iLightMeter.dll	2.0.0.90	2.0.0.77

**Changes with CVB version 11.0**

Starting with Common Vision Blox 11.0, LightMeter will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

**Fixes:**

- In the previous versions, Magic Number handling was fault for Magic Numbers in serial number range from 50000 to 299999.

This has been fixed.

	Win32	Win64
LightMeter.dll	2.1.1.37	2.1.0.28
DrawGraph.dll	1.5.3.67	1.5.1.57
CVCLightMeter.ocx	1.5.2.77	1.5.2.80
CVCDrawGraph.ocx	1.5.1.71	1.5.1.74
iLightMeter.dll	2.0.0.90	2.0.0.77

**Changes with CVB version 10.2**

The CVC LightMeter tool has been prepared for the up coming 64 bit release of Common Vision Blox and therefore the DLL and the ActiveX control have been rebuilt.

There were no changes to the programming interface or the functionality of the tool.

In the LightMeter.dll a reference count leak when setting the image to work on to zero/NIL has been fixed.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll	1.4.3.12
DrawGraph.dll	1.4.2.38
CVCLightMeter.ocx	1.4.0.14
CVCDrawGraph.ocx	1.4.1.34
iLightMeter.dll	1.0.1.0

**Changes with CVB version 10.1**

The Lightmeter.dll and the DrawGraph.dll have been relinked with an updated dongle protection library that permits remote desktop access to applications built with it.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll	1.4.2.0
DrawGraph.dll	1.4.1.0
CVCLightMeter.ocx	1.4.0.1
CVCDrawGraph.ocx	1.4.0.0
iLightMeter.dll	1.0.1.0

### Changes with CVB version 10.0

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

There are no changes to the Tool itself.

A few function signatures in the iLightMeter.bas header file have been fixed.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll	1.4.1.1
DrawGraph.dll	1.4.0.1
CVCLightMeter.ocx	1.4.0.1
CVCDrawGraph.ocx	1.4.0.0
iLightMeter.dll	1.0.1.0

### Changes in version 1.3.4.1

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.3.4.1
DrawGraph.dll	1.3.5.1
CVCLightMeter.ocx	1.3.3.0
CVCDrawGraph.ocx	1.3.3.0

### Changes in version 1.3.3.1

The DrawGraph.DLL (Version 1.3.3.1) fixes a bug that occurs when it is used with dongles with a serial number  $\geq 50000$ .

If you are using a dongle with a lower serial number you do not need to update.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.3.3.1
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DrawGraph.dll	1.3.3.1
CVCLightMeter.ocx	1.3.3.0
CVCDrawGraph.ocx	1.3.3.0

### Changes in version 1.3.3

Recompiled for CVB 8.0 SP2.

- The CVC DrawGraph Control has been renamed to Common Vision DrawGraph Control. This has no influence on any existing programs.
- The CVC LightMeter Control has been renamed to Common Vision LightMeter Control. This has no influence on any existing program.

### New features added in this version (for additional information refer to the CVB Manual):

CVCDrawGraph.ocx

GraphCalculation Property

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.3.3.0
DrawGraph.dll	1.3.3.0
CVCLightMeter.ocx	1.3.3.0
CVCDrawGraph.ocx	1.3.3.0

### Changes in version 1.3.2

The CVB image coordinate system is supported now.

Processing speed has been further improved.

Recompiled with CVB 8.0.

### New features added in this version (for additional information refer the CVB Manual):

- CVCLightMeter.ocx
- EntireImage Property
- ResetCS Property
- LightMeter.dll

Support for the DLL-version of the tool added in this release.

This version supports the ThinkEye TE-100 camera.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.3.2.0
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DrawGraph.dll	1.3.2.0
CVCLightMeter.ocx	1.3.2.0
CVCDrawGraph.ocx	1.3.2.0

### Changes in version 1.3.1

The LightMeter.dll is now using the ShareObject function for the image object to be sure that the image is valid all the time.

In addition to that small changes were made to adapt to the 7.2.0 Image Manager.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.3.1.0
DrawGraph.dll	1.3.1.0
CVCLightMeter.ocx	1.3.1.0
CVCDrawGraph.ocx	1.3.1.0

### Changes in version 1.3

This version fixes a bug that the processed area was 1 pixel smaller than the selected area.

### New features added in this version (for additional information refer to the manual):

CVCLightMeter.ocx:

- GetSingleHistogramEntry Method

CVCDrawGraph.ocx:

- New styles valid for GraphStyle Property.
- LabelFont Property
- LabelTextYFormat Property
- ShowTestGraph Property
- AddBufferValue Method
- AddBufferValueVB Method
- AddFIFOValue Method
- AddFIFOValueVB Method
- GetFIFOPosition Method
- SetFIFOPosition Method
- SetAllFIFOPositions Method

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.3.0.0
DrawGraph.dll	1.3.0.0
CVCLightMeter.ocx	1.3.0.0
CVCDrawGraph.ocx	1.3.0.0

### Changes in version 1.2.1

This version fixes a bug when the selected area is outside the image area.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.2.1.0
DrawGraph.dll	1.2.0.0
CVCLightMeter.ocx	1.2.0.0
CVCDrawGraph.ocx	1.2.0.0

### Changes in version 1.2

This version has a optimized performance (aprox. factor 3) when the selected Area is not rotated and the Density is set to 1000.

If these criteria are not met the tool will run with the standard performance.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

LightMeter.dll.dll	1.2.0.0
DrawGraph.dll	1.2.0.0
CVCLightMeter.ocx	1.2.0.0
CVCDrawGraph.ocx	1.2.0.0

### Changes in version 1.1

The main reason for this new release of the LightMeter tool is the new Common Vision Blox Version 7.0.

To be compliant it was necessary to rebuild the tools to support the new Image Manager of Common Vision Blox.

### New features added in this version (for additional information refer to the CVB Manual):

- CVCLightMeter.ocx
- GetSVPixelInLimits Method

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Lightmeter tool are:

CVCLightMeter.dll.dll	1.1.0.0
DrawGraph.dll	1.1.0.1
CVCLightMeter.ocx	1.1.0.1
CVCDrawGraph.ocx	1.1.0.0

### 1.2.10 Manto

## Manto Release Notes

### Changes with CVB version 13.0

- Manto.dll has been adapted to the new internal interface structure introduced in Common Vision Blox 13.00.000.

	Win32	Win64
Manto.dll	1.1.0.0	N/A
Manto.ocx	1.2.1.696	N/A
MantoTeach.exe	1.0.21.0	N/A
MantoMNIST.dll	1.0.0.1	N/A
iManto.dll	2.2.2.405	N/A

### Changes with CVB version 12.0

- Nothing has changed about the Manto tool in the Common Vision Blox 12.0 release. However, with the availability of the Polimago tool (which has a similar set of characteristics but a more extensive set of features) it is likely that this release of Manto is the last one and that future builds of Common Vision Blox will not include Manto any more.

	Win32	Win64
Manto.dll	1.0.23.0	N/A
Manto.ocx	1.2.0.284	N/A
MantoTeach.exe	1.0.20.0	N/A
MantoMNIST.dll	1.0.0.1	N/A
iManto.dll	2.2.2.233	N/A

### Changes with CVB version 11.2

- The following functions from iManto.dll did, when called, cause a marshaling error that did silently terminate the running process:

MCClassIndexToClassID, GetMCControlWord, GetMCComment, GetMCExcludedClass, GetImageListExcludedClass and ImageListClassIndexToClassID.

	Win32	Win64
Manto.dll	1.0.23.0	N/A
Manto.ocx	1.2.0.284	N/A
MantoTeach.exe	1.0.20.0	N/A
MantoMNIST.dll	1.0.0.1	N/A
iManto.dll	2.2.2.163	N/A

### Changes with CVB version 11.0

In Common Vision Blox 11.0, Manto will only be available on the 32 bit platform!

Manto now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

#### Fixes/Changes:

- In cases where very homogeneous surfaces (almost identical gray values on all the pixels) were being investigated, an uncaught floating point overflow exception could occur due to invalid arguments passed to the arctanh function.  
This has been fixed.
- Due to compatibility issues MantoTeach no longer performs license checks.  
This also means that MantoTeach will no longer be able to warn when a file cannot be saved for lack of a license.

	Win32	Win64
Manto.dll	1.0.22.0	N/A
Manto.ocx	1.1.5.55	N/A
MantoTeach.exe	1.0.20.0	N/A
MantoMNIST.dll	1.0.0.1	N/A
iManto.dll	2.0.0.13	N/A

### Changes with CVB version 10.2

- The LoadClassifier method of the Manto OCX now supports the substitution of environment variables like %CVB%

**Known issues:**

- Trying to load a corrupt Sample Image List (e.g. the result of a forcibly interrupted save operation) is still likely to crash MantoTeach.
- When using a sample image list with a very big number of very small images, memory allocation will fail during preprocessing already even though in theory there is enough memory available to accommodate the temporary data required during training.  
The reason for this seems to be the way in which the runtime treats and allocates small blocks of memory and a solution will probably require a re-implementation of the memory management inside Manto.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.20.0
Manto.ocx	1.1.4.28
MantoTeach.exe	1.0.19.0
MantoMNIST.dll	1.0.0.1
iManto.dll	1.0.2.0

**Changes with CVB version 10.1**

- Classifiers with only two classes in conjunction with the search method MCSearch/MCSearchEx did under very rare circumstances lead to a result position outside the region of interest being returned due to an internal overflow during the sub pixel position calculation.  
This has been fixed.
- In Manto Teach a crash could occur when trying to train a classifier from a Sample Image List containing an empty class and a mask image.  
This has been fixed.
- The reaction of Manto Teach to "out of memory" conditions when learning large Sample Image Lists or using a very large amount of virtual transformations has been improved.

**Known issues:**

- Trying to load a corrupt Sample Image List (e.g. the result of a forcibly interrupted save operation) is likely to crash MantoTeach.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.20.0
Manto.ocx	1.1.2.0
MantoTeach.exe	1.0.19.0
MantoMNIST.dll	1.0.0.1
iManto.dll	1.0.2.0

### Changes with CVB version 10.0

The tool version number has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

Furthermore there is a new ActiveX Control, the CV Manto Search Control (Manto.ocx).

Please refer to the Common Vision Blox Manto Manual for all details regarding use and features of the Control.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.18.0
Manto.ocx	1.1.2.0
MantoTeach.exe	1.0.18.0
MantoMNIST.dll	1.0.0.1
iManto.dll	1.0.2.0

### Changes in Version 1.3.1

- A multithreading problem has been solved by linking more recent runtime libraries from Borland.

The execution times of the Manto search functions thereby increased by about 15%.

Please note that in multithreaded execution each thread should use its own classifier which may mean that you will need to load the same classifier several times (once for each thread).

- In previous versions of Manto an erratic entry of the CVB serial number in the registry could lead to a situation where Manto denied the activation of a license.

This behavior has been fixed in the latest versions of the Manto DLL and the MantoTeach application (both bearing version number 1.0.19.0).

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.18.0
MantoTeach.exe	1.0.18.0
MantoMNIST.dll	1.0.0.1

### Changes in version 1.3

- Attention: SILs that have been saved with the newest version of Manto (Version of Manto DLL: 1.0.17.0) cannot be opened any longer with older Versions of Manto (Version of Manto DLL 1.0.14.0 or older)!
- New functions in the Manto DLL: GetImageListEnumeration, SetImageListEnumeration, MCFindCounterExamples, MCReadToken, SetMCSearchCallback, GetSILVersion

- New features in Manto Teach:
  - Support for the new functions of the Manto DLL. Thereby:
  - Assistance in automatically extracting sample images for the excluded class
  - Possibility to create a deterministic classifier
  - Classifier testing with the ReadToken function

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.17.0
MantoTeach.exe	1.0.17.0
MantoMNIST.dll	1.0.0.1

### Changes in version 1.2

- Note: There's no need to recompile applications built with previous versions.  
Only the Manto DLL (Manto.dll Version 1.0.12.0) and Manto-Teach (MantoTeach.exe Version 1.0.12.0) need to be replaced with the newer versions (1.0.14.0 for both).
- New functions in the Manto DLL: GetImageListNumSamplesX, GetImageListItemX.
- New features in Manto Teach:
  - DirectDraw may be enabled or disabled through the menu 'Options' in case there are problems with RGB display
  - color model (monochrome, RGB, RGB 9 planar) may be selected from the 'Options' menu
  - display of the mask image in the SIL tree
  - drag & drop of bitmaps, SILs and classifiers into Manto Teach now possible
  - in the Search Test dialogue the 'To Training' items are now highlighted in the image
  - the SIL tree now is case sensitive with respect to class names

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.14.0
MantoTeach.exe	1.0.14.0
MantoMNIST.dll	1.0.0.1

### Changes in version 1.1.1

- Licensing: The tool can be used by Windows users with none-administrator access (guests) now.

### Changes in version 1.1

The new version exports some new functions (refer to manual):

- GetImageListExcludedClass
- SetImageListExcludedClass

- MantoColourTransform
- MCSearchResultRef
- MCSearchAllEx

furthermore the SearchResults class has been introduced to encapsulate search results for use in Visual Basic.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Manto tool are:

Manto.dll	1.0.4.0
MantoTeach.exe	1.0.4.0
MantoMNIST.dll	1.0.0.1

### 1.2.11 Match3D

## Match3D Release Notes

### Changes with CVB version 13.2

- Adapted license verification code.
- Changed .Net Framework dependency to version 3.5.
- MatchDownsampledPointClouds() in *iCVMATCH3D.dll* has been fixed to longer longer return a partially uninitialized transformation.

	Win32	Win64	Linux
CVMatch3D.dll	1.4.1.374	1.4.1.374	1.401.374
iCVMATCH3D.dll	3.9.2.3		N/A

### Changes with CVB version 13.1

Starting with Common Vision Blox 13.1, Match3D is a new component of the Common Vision Blox Package.

It is a tool for aligning 3D point clouds in 3D space using an ICP algorithm.

	Win32	Win64	Linux
CVMatch3D.dll	1.2.0.212	1.2.0.212	1.200.212
iCVMATCH3D.dll	1.0.0.37		N/A

## 1.2.12 Minos

## Minos Release Notes

## Changes with CVB version 13.2

- Creating a classifier from a training set that contains an empty class will no longer cause problems.

	Win32	Win64	Linux
MinosCVC.dll	3.4.3.821	3.4.3.821	3.403.821
MinosX.ocx	1.2.1.0	1.2.1.0	N/A
TeachNT.exe	1.0.16.0	1.0.16.0	N/A
iMinosCVC.dll	3.9.2.3		N/A

## Changes with CVB version 13.1

- In the MinosCVC.dll shipped with Common Vision Blox 13.00.000 a call to NumMTSClasses triggered an access violation due to a malformed unicode string comparison. This has been fixed.
- With the MinosCVC.dll shipped with Common Vision Blox 13.00.000 loading a classifier with unicode characters could trigger an access violation due to a missing zero termination. This has been fixed.
- Two access beyond array bounds situations have been fixed, improving the stability of the LearnCLFFromMTS call.
- Parameter reporting in GetCLFLCS has been fixed.
- A name clash (FilterLaplace) between the *CVFoundation.dll* and the *MinosCVC.dll* has been fixed. Use FilterLaplace3x3 from now on.

	Win32	Win64	Linux
MinosCVC.dll	3.4.2.732	3.4.2.732	3.402.732
MinosX.ocx	1.2.1.0	1.2.1.0	N/A
TeachNT.exe	1.0.16.0	1.0.16.0	N/A
iMinosCVC.dll	2.6.1.715		N/A

## Changes with CVB version 13.0

- MinosCVC.dll has been adapted to the new internal interface structure introduced in Common Vision Blox 13.00.000.
- Unicode capability has been added.

- Learning a classifier from an empty MTS will no longer lead to an access violation.
- The hill-climbing algorithm for Minos searches has been modified to prevent it from veering off in situations where the "quality relief" is completely flat.
- The Win32 setup now also installs the C++ build of MinosCVC.dll

	Win32	Win64	
MinosCVC.dll	3.2.3.630	3.2.3.630	3.203.630
MinosX.ocx	1.2.1.0	N/A	N/A
TeachNT.exe	1.0.16.0	1.0.16.0	N/A
iMinosCVC.dll	2.4.0.604		N/A

### Changes with CVB version 12.1

- A problem in the 64 bit implementation of the learning routines that did lead to apparently different classifier behavior between 32 and 64 bit has been fixed.
- A malformed range check in the 64 bit implementation of the learning routines was fixed. This malformed range check could in some cases lead to a premature interruption of the learning phase without before finishing the classifier generation.

	Win32	Win64	Linux
MinosCVC.dll	1.0.18.2	2.6.7.0	2.610.20
MinosX.ocx	1.2.1.0	N/A	N/A
TeachNT.exe	1.0.16.0	1.0.16.0	N/A
iMinosCVC.dll	2.2.3.421		N/A

### Changes with CVB version 12.0

- In the 64 bit build of Minos the implementation of the correlation functions is now thread safe. Please note that this is not true for the 32 bit build. If you require a thread safe implementation of the correlation functions also for your 32 bit application please contact [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).
- Also limited to the 64 bit build of Minos is the correction of a problem in the Consistency check functions: The consistency checks did also pick up on patterns that are located inside a region marked as a "don't care" area.
- The function SetMTSGlobalAdvance was broken in the 64 bit build and did always behave as if the GA parameter had been set to True. This is now fixed.
- In the 64 bit build the model images are now updated every time a model property changes or a new instance has been added (just like in the 32 bit build).
- A classifier created with LearnCLFFromMTS will now by default use normalized quality feedback (in previous builds, classifiers created by LearnCLFFromMTS had no defined quality measure

which made and a call to `SetCLFQualityType` was required before the classifier could actually be used.

- Saving a Minos Training Set no longer requires a valid Minos license (warning: Saving a classifier still requires a valid Minos license!).
- Fixed a malformed integrity check that led to `GetCLFModelData` failing every time it was called (64 bit build only).
- `GetCLFSize` now reports the correct classifier size in the 64 bit build as well.
- The function `LoadMTSFile` no longer checks if the file to be loaded has the extension `*.mts` and fails if it hasn't.
- The function `LoadMTSFile` no longer crashes on legacy MTS files (Win64 only; Win32 version still loads Legacy files).

	Win32	Win64	Linux
MinosCVC.dll	1.0.18.2	2.6.4.280	2.601.261
MinosX.ocx	1.2.1.0	N/A	N/A
TeachNT.exe	1.0.16.0	1.0.16.0	N/A
iMinosCVC.dll	2.2.3.348		N/A

### Changes with CVB version 11.2

- In previous version, files generated with the function `WriteMTSFile` were not readable because the 64 bit build did write too many bits into the size descriptors, effectively rendering the saved file unreadable.  
The problem did not show when working with `TeachNT.exe` because this is still a 32 bit application, even when installing Common Vision Blox for the x64 platform.
- In situations where very big patterns with poor contrast have been trained, the sub pixel calculations used by `SubPixelOptimum` could in rare cases lead to significantly wrong results due to a diverging denominator in the parabolic approximation.  
This situation is now detected properly and the sub pixel correction offset is restricted to the range  $[-0.5, 0.5]$  in x and y direction.
- In CVB 11.0 and 11.1 a change in the `CVCDisp.dll` led to Minos being unable to acquire images from a `*.vin` driver.  
This has been fixed.
- In the 64 bit build of the `MinosCVC.dll` a problem has been fixed that could lead to classifiers differing from the results obtained under 32 bit and, in some cases, even to a crash of the `LearnCLFFromMTS` function.
- In the 64 bit build of the `MinosCVC.dll` the function `CLFSetGlobalAdvance` did report an error and not do what was expected regardless of the circumstances.  
This has been fixed.
- The 64 bit implementation of the function `WriteMTS` has been fixed - in previous versions, MTS files saved through the 64 bit implementation of `WriteMTS` could not be loaded any more (please

note that this only affected MTS files written using the 64 bit build of the MinosCVC.dll.  
MTS files written using TeachNT.exe were unaffected.

- String marshaling in the .Net wrapper has been fixed on the functions CLFComment, CLFMTSName, GetModelName and MTSComent.

	Win32	Win64
MinosCVC.dll	1.0.16.0	2.2.10.169
MinosX.ocx	1.2.1.0	N/A
TeachNT.exe	1.0.16.0	1.0.16.0
iMinosCVC.dll	2.1.1.122	

### Changes with CVB version 11.1

- A bug in the managed-unmanaged marshaling of the filter functions in iMinosCVC.dll has been fixed.
- In the x64 build of CVB 11.0 an uncaught exception could occur when calling LearnCLFFromMTS on an MTS in which an entire image has been trained as a model.  
This has been fixed.

	Win32	Win64
MinosCVC.dll	1.0.16.0	2.2.10.169
MinosX.ocx	1.2.1.0	N/A
TeachNT.exe	1.0.16.0	1.0.16.0
iMinosCVC.dll	2.1.1.122	

### Changes with CVB version 11.0

Starting with Common Vision Blox 11.0, Minos will be available on the 32 and 64 bit windows platform.

It now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

#### Changes:

- Due to compatibility issues TeachNT no longer performs license checks.  
This also means that TeachNT will no longer be able to warn when a file cannot be saved for lack of a license.  
However, MinosCVC.dll will point out this situation.

#### Known Limitations:

- The Minos ActiveX controls are currently not available on the 64 bit Windows platform.

- TeachNT.exe is currently not available as a 64 bit binary.  
Instead, a 32 bit binary is currently being installed and used on the 64 bit Windows platform for generating the classifiers.

	Win32	Win64
MinosCVC.dll	1.0.16.0	2.2.2.87
MinosX.ocx	1.2.1.0	N/A
TeachNT.exe	1.0.16.0	1.0.16.0
iMinosCVC.dll	2.0.0.108	2.0.0.98

### Changes with CVB version 10.0

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

- A problem in the MinosX.ocx that led to access violations when the option "AccumulateToMTS" was used has been fixed.
- A serialization problem affecting all of the MinosX controls has been fixed.
- A wrong declaration of GetImageListSymmetries in the iManto.bas header has been fixed.
- The consistency check dialog in TeachNT.exe will now close properly (inability to close it was caused by a problem in the CVCIImg.dll).

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

MinosCVC.dll	1.0.15.0
MinosX.ocx	1.2.1.0
TeachNT.exe	1.0.15.0
iMinosCVC.dll	1.0.2.0

### Changes with CVB version 1.5.6

A bug in the Delphi runtime (VCL) caused problems when using more than one ActiveX control developed in Delphi in the same application at the same time.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.15.0
MinosX.ocx	1.1.7.0
TeachNT.exe	1.0.15.0

### Changes with CVB version 1.5.5

In the SearchX control, the limitation of the property "Locality" to 20 pixels maximum has been removed.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.15.0
MinosX.ocx	1.1.6.0
TeachNT.exe	1.0.15.0

### Changes with CVB version 1.5.4

An issue regarding the licensing of the tool has been fixed that might lead to problems under certain conditions.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.15.0
MinosX.ocx	1.1.5.0
TeachNT.exe	1.0.15.0

### Changes with CVB version 1.5.3

The registration dialog didn't allow registration of the tool for CVB serial numbers greater than 9999.

This was only possible using the CVB SysInfo tool.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.14.0
MinosX.ocx	1.1.5.0
TeachNT.exe	1.0.14.0

### Minos .Net Compiler support with CVB 8.0.3

CVB 8.0.3 comes with the necessary Minos header files and wrapper dlls for the actual Microsoft .Net compilers.

As usual they are installed to the CVB directory ..\Lib\Net.

Further information regarding programming CVB and the .Net compilers could be found in the CVB Manual in the chapter .Net Programming hints.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.12.0
MinosX.ocx	1.1.5.0
TeachNT.exe	1.0.12.0

**Service Pack 1 of CVB 8.0 Service Pack1 for CVB 8.0 contains a new version of the Minos Control (MinosX.ocx version 1.1.5.0).**

The new Control has no changes in functionality, only the name of the component which you import in your development environment changed to Common Vision Minos Control respectively Common Vision Minos Search Control, Common Vision QuickTeach Control, Common Vision Minos Filter Control, Common Vision Minos Coordinator Control and Common Vision Minos Correlate Control.

Furthermore the new Control supports the context sensitive F1 help for properties, methods and events.

This version supports the ThinkEye TE-100 camera.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.12.0
MinosX.ocx	1.1.5.0
TeachNT.exe	1.0.12.0

**Changes with CVB version 1.5.2**

- Licensing

The tool can now be used by Windows users with none-administrative privileges (guests) now.

- Reference counting

In the previous versions of CVB and Minos the functions `ShareObject`, `ReleaseObject` and `RefCount` could be used with Minos Objects (CLF, MTS und SearchResults).

By porting the Image Manager libraries to the ThinkEye TE-100 platform this historical connection between the Image Manager and Minos became obsolete.

`ShareObject`, `ReleaseObject` and `RefCount` can't be used with any of the Minos objects anymore.

Instead of this the Minos library now exports the functions `ShareClf`, `ReleaseClf`, `ShareResults`, `ReleaseResults`, `ShareMts` and `ReleaseMts` that can be used as a replacement for the functions named above.

This means that any application that uses `ShareObject`, `ReleaseObject` or `RefCount` needs to be ported to the new version.

Users of the Minos ActiveX control who do not use any of the functions can use the new version of the Minos ActiveX control which is already ported to the new Minos and Image Manager

libraries. Only users of the Minos DLL are affected by this update and they should consider the port carefully and only if they want to use the feature of the new licensing mentioned above.

Porting an existing code is done in the following steps:

- Search within your source code for all calls to `ReleaseObject`
- Verify if the function is called with an image object as a parameter, in this case replace `ReleaseObject` by `ReleaseImage`.
- If it is called with a Minos Training Set (MTS) object replace `ReleaseObject` by `ReleaseMts`.
- If it is called with a Minos Classifier (CLF) replace `ReleaseObject` by `ReleaseClf`.
- If it is called with a Minos Search Result (RESULTS) replace `ReleaseObject` by `ReleaseResults`.
- Search within your source code for all calls to `ShareObject`
- Verify if the function is called with an image object as a parameter, in this case replace `ShareObject` by `ShareImage`.
- If it is called with a Minos Training Set (MTS) replace `ShareObject` by `ShareMts`.
- If it is called with a Minos Classifier (CLF) replace `ShareObject` by `ShareClf`.
- If it is called with a Minos Search Result (RESULTS) replace `ShareObject` by `ShareResults`.
- Search within your source code for all calls to `RefCount`
- Verify if the function is called with an image object as a parameter, in this case you can keep the call as it is, otherwise you remove the code and use the `ShareXXX` function that returns the actual reference count.

For some reasons it might be useful to ensure which version of the Minos DLL is installed on the system.

You can use the code below to check if Minos version greater or equal 1.5.2 is installed on the system:

## VC

```

BOOL IsMinos152()
{
    HINSTANCE hLib;
    BOOL(__stdcall *pFunc) (void *param);
    BOOL bRes = false;
    if (hLib = LoadLibrary("MINOSvc.DLL"))
    {
        pFunc = (BOOL(__stdcall *) (void *param)) GetProcAddress(hLib, "ShareMts");
        if (pFunc) bRes = true;
    }
    FreeLibrary(hLib);
    return bRes;
}

```

## VB

```

Function IsMinos152() As Boolean
Dim Library As Long
Dim Func As Long
    IsMinos152 = False
    Library = LoadLibrary("minoscvc.dll")
    If (Library <> 0) Then
        Func = GetProcAddress(Library, "ShareMts")
        If (Func <> 0) Then IsMinos152 = True
        FreeLibrary Library
    End If
End Function

```

## Delphi

```

Function IsMinos152(): Boolean;
var Lib: LongInt;
    Func: Pointer;
begin
    IsMinos152 := false;
    Lib := LoadLibrary('minoscvc.dll');
    If (Lib <> 0) Then
        begin
            Func := GetProcAddress(Lib, 'ShareMts');
            If (Func <> nil) Then IsMinos152 := True;
            FreeLibrary (Lib);
        end;
    end;
End;

```

Using this function you can write intelligent code to handle the ShareXXX and ReleaseXXX functions.

- File format

Due to the changes described above the file format of the Minos Training Set (MTS) changed as well.

The new version of the Minos Teach program can still read old MTS files, but it saves them in a new format which can't be read by previous versions.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.12.0
MinosX.ocx	1.1.4.0
TeachNT.exe	1.0.12.0

## Changes with CVB version 1.5.1

The new version stores the registration information's under HKEY\_LOCAL\_MACHINE while the previous version uses HKEY\_CURRENT\_USER.

This allows an easier change of the user name.

The new version still supports the old location if the new key cannot not be read.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.6.0
MinosX.ocx	1.0.4.0
TeachNT.exe	1.0.6.0

### Changes with CVB version 1.5

The register dialog of the previous version allows only Magic Numbers with a maximum length of 4 characters.

This bug is fixed in this new release.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Minos tool are:

minosCVC.dll	1.0.6.0
MinosX.ocx	1.0.3.0
TeachNT.exe	1.0.6.0

## 1.2.13 Movie

### Movie2 (Movie) Release Notes

#### Changes with CVB version 13.2

##### Changes:

- Movie2.dll now supports raw video recording into a proprietary container file format that Common Vision Blox can read from and write to. This format has been optimized for high speed recording, making it possible to achieve 2GB/s and more depending on the storage system that is being used.

	Win32	Win64
Movie2.dll	2.6.0.1143	2.6.0.1143
Movie2.ocx	2.2.1.1170	2.2.1.1170
iMovie2.dll	3.9.2.3	
MovieInteractive2.exe	1.7.2.2311	1.7.2.2311

MovieInteractive2PlugIn.dll	1.7.2.2311	1.7.2.2311
MIAPaoiCut.dll	1.7.2.2311	1.7.2.2311
MIAPBayerConversion.dll	1.7.2.2311	1.7.2.2311
MIAPFrameSkipping.dll	1.7.2.2311	1.7.2.2311
MIAPHistoTrigger.dll	1.7.2.2311	1.7.2.2311
MIAPNormalization.dll	1.7.2.2311	1.7.2.2311
MIAPResize.dll	1.7.2.2311	1.7.2.2311

### Changes with CVB version 13.1

#### Changes:

- Movie Interactive 2 now uses TextOut for generating destructive image time stamps.

	Win32	Win64
Movie2.dll	2.5.1.1033	2.5.1.1033
Movie2.ocx	2.2.0.1077	2.2.0.1077
iMovie2.dll	2.4.2.942	2.4.2.942
MovieInteractive2.exe	1.7.1.2054	1.7.1.2054
MovieInteractive2PlugIn.dll	1.4.0.2019	1.4.0.2019
MIAPaoiCut.dll	1.4.0.2054	1.4.0.2054
MIAPBayerConversion.dll	1.4.0.2054	1.4.0.2054
MIAPFrameSkipping.dll	1.5.1.2054	1.5.1.2054
MIAPHistoTrigger.dll	1.4.0.2054	1.4.0.2054
MIAPNormalization.dll	1.4.0.2054	1.4.0.2054
MIAPResize.dll	1.4.0.2054	1.4.0.2054

### Changes with CVB version 13.0

#### Changes:

- Switched to VC14.
- Added Unicode support.

#### Known Limitations:

- As the TextOut tool is not available on the Win64 platform, it is not possible to embed timestamps (or other textual data) in the \*.avi files recorded with MovieInteractive2.

	Win32	Win64
Movie2.dll	2.4.1.947	2.4.1.947
Movie2.ocx	2.2.0.992	2.2.0.992
iMovie2.dll	2.4.2.827	2.4.2.827
MovieInteractive2.exe	1.6.0.1626	1.6.0.1626
MovieInteractive2PlugIn.dll	1.4.0.1626	1.4.0.1626
MIAPaoiCut.dll	1.4.0.1626	1.4.0.1626
MIAPBayerConversion.dll	1.4.0.1626	1.4.0.1626
MIAPFrameSkipping.dll	1.5.1.1626	1.5.1.1626
MIAPHistoTrigger.dll	1.4.0.1626	1.4.0.1626
MIAPNormalization.dll	1.4.0.1626	1.4.0.1626
MIAPResize.dll	1.4.0.1626	1.4.0.1626

## Changes with CVB version 11.2

### Changes:

- In some situations, the Movie2 tool did emit a message box indicating lack of a license even though a valid license is available on the system.  
This happens if one of the runtimes loaded into the process changes the accuracy at which the FPU and SSE units carry out floating point calculations by means of modifying the respective unit's control register.  
This behavior is known to occur with the Embarcadero Delphi runtimes as well as some older versions of Direct3D.  
As a workaround, the Movie tool now resets the SSE and FPU control registers to default values prior to verifying the tool Magic Number.
- Movie2GetNumDroppedFrames now returns the correct result since it internally now also reads out GRAB\_INFO\_NUMBER\_IMAGES\_LOST\_LOCKED.
- The browse button on the property page of the Movie2 OCX has been fixed.

### Known Limitations:

- As the TextOut tool is not available on the Win64 platform, it is not possible to embed timestamps (or other textual data) in the \*.avi files recorded with MovieInteractive2.

	Win32	Win64
Movie2.dll	2.2.4.81	2.2.2.65
Movie2.ocx	2.0.4.175	2.0.4.178
iMovie2.dll	2.0.0.77	2.0.0.67

MovieInteractive2.exe	1.2.1.35	1.1.2.18
MovieInteractive2PlugIn.dll	1.2.0.50	1.1.0.43
MIAPaoiCut.dll	1.2.0.36	1.1.0.29
MIAPBayerConversion.dll	1.2.0.29	1.1.0.22
MIAPFrameSkipping.dll	1.2.0.26	1.1.0.19
MIAPHistoTrigger.dll	1.2.0.27	1.1.0.20
MIAPNormalization.dll	1.2.0.27	1.1.0.21
MIAPResize.dll	1.2.0.26	1.1.0.20

### Changes with CVB version 11.1

#### Fixes:

- In the previous release of MovieInteractive2 a problem occurred when recording sequences of files, and the issued file name was also part of the destination path.

#### Known Limitations:

- As the TextOut tool is not available on the Win64 platform, it is not possible to embed timestamps (or other textual data) in the \*.avi files recorded with MovieInteractive2.

	Win32	Win64
Movie2.dll	2.2.4.81	2.2.2.65
Movie2.ocx	2.0.4.175	2.0.4.178
iMovie2.dll	2.0.0.77	2.0.0.67
MovieInteractive2.exe	1.2.1.35	1.1.2.18
MovieInteractive2PlugIn.dll	1.2.0.50	1.1.0.43
MIAPaoiCut.dll	1.2.0.36	1.1.0.29
MIAPBayerConversion.dll	1.2.0.29	1.1.0.22
MIAPFrameSkipping.dll	1.2.0.26	1.1.0.19
MIAPHistoTrigger.dll	1.2.0.27	1.1.0.20
MIAPNormalization.dll	1.2.0.27	1.1.0.21
MIAPResize.dll	1.2.0.26	1.1.0.20

### Changes with CVB version 11.0

Movie2 now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

When running without a valid license, the duration of the recorded \*.avi file is no longer limited, but the recorded AVI file will be watermarked with the Common Vision Blox logo.

As of Common Vision Blox 11.0, the previous version of **Movie (marked deprecated in the release of Common Vision Blox 10.2 - see release notes below) is no longer being distributed.**

Customers still wanting to use the outdated version need to stay on Common Vision Blox 10.2.

#### Fixes:

- In some cases, where width and height were at odds with the requirements of DirectShow, a crash of the Movie2.dll did happen when starting AVI recording.  
This did typically happen when recording Bayer-converted images and has been fixed.
- The previous version of MovieInteractive2 was unable to record into any other single image format than \*.bmp (\*.avi files were unaffected by this!).  
This has been fixed.
- The previous version of the Movie2.ocx did cause an access violation when trying to record text meta data into an \*.avi file in one of the .NET languages.
- The MovieInteractive2 Plugin that does histogram normalization did in the last release always hand on the unprocessed image.  
This has been fixed.
- When recording monochrome AVI files the palette was offset by 12 bytes, resulting in the colors in the palette being 0, 0, 0, 0, 1, 2, 3, ..., 252.  
This effect is barely visible to the eye, but will result in slightly modified pixel values when the AVI file is being used in software outside Common Vision Blox.  
Note that the actual pixel values have always been recorded correctly, and if such a file was being used inside Common Vision Blox no error was visible because Common Vision Blox disregards the palette when reading monochrome AVI files.

#### Known Limitations:

- As the TextOut tool is not available on the Win64 platform, it is not possible to embed timestamps (or other textual data) in the \*.avi files recorded with MovieInteractive2.

	Win32	Win64
Movie2.dll	2.2.4.81	2.2.2.65
Movie2.ocx	2.0.4.175	2.0.4.178
iMovie2.dll	2.0.0.77	2.0.0.67
MovieInteractive2.exe	1.2.0.26	1.1.2.18
MovieInteractive2PlugIn.dll	1.2.0.50	1.1.0.43
MIAPaoiCut.dll	1.2.0.36	1.1.0.29
MIAPBayerConversion.dll	1.2.0.29	1.1.0.22
MIAPFrameSkipping.dll	1.2.0.26	1.1.0.19
MIAPHistoTrigger.dll	1.2.0.27	1.1.0.20
MIAPNormalization.dll	1.2.0.27	1.1.0.21

MIAPResize.dll	1.2.0.26	1.1.0.20
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## Changes with CVB version 10.2

### Movie2

In Common Vision Blox 10.2 version 2 of CVB Movie was introduced, henceforth called Movie2.

Due to several improvements and architectural changes that have been made, **Movie2 is not code compatible with CVB Movie**, but it overcomes some of the limitations of the previous version:

- the recorder initialization and de-initialization process has been made simpler and more robust; apart from the creation function (CreateMovie2Recorder) only Movie2StartRecording, Movie2StopRecording and (optionally) Movie2PreStartRecording are now necessary to control the state of the AVI recorder object
- with Movie2 frame-accurate recording has finally become possible thanks to an architectural change and a more granular control over the synchronization options between the acquisition part of an application and the recording to disc
- a wider range of frame rates for playback of the recorded AVI file has become available with Movie2, as it allows the specification of the replay frame rate rather than the specification of an only millisecond-precise frame time as in the previous version
- Movie2 supports the recording of textual data along with the video stream into a standard AVI container; the tool also comes with tutorials showing how to access these data in an application
- the support for variable-framerate-recording has been removed to make the programming interface simpler (variable-framerate-recording is not supported by the AVI container, therefore maintaining the extraneous functions involved for this feature made no sense)
- the customized color plane ordering by means of the functions SetRedPlane, SetGreenPlane and SetBluePlane has been removed in favor of a slight increase in the performance of the copy process involved in recording the video stream; input images are now always assumed to have a Red-Green-Blue plane order
- the .Net wrapper for Movie2 (iMovie2.dll) now employs an object oriented approach for easier integration of the tool into a .Net application
- a new MovieInteractive2 application has been created as an extensible and flexible replacement for the tool MovieInteractive
- the internal architecture has been modified to enable support for different streaming formats in the future (currently Movie2 still uses Microsoft's DirectShow infrastructure as the foundation of its implementation and therefore basically supports the same range of codecs as CVB Movie and the AVI file format as the container format for the recorded files)

As Movie2 is not code compatible with the previous version, we also include the "classic" CVB Movie tool in the 10.2 release of Common Vision Blox.

It is however highly recommended that new applications henceforth be based entirely on Movie2 as all future development are going to be performed on the newer version.

Also, only Movie2 will be available on the 64 bit release of Common Vision Blox.

As the basic usage concept of the CVB Movie recording tool has not been changed, anyone familiar

with the previous version is likely to find the transition to Movie2 very straightforward.

As usual, CVB Manual gives detailed information about the programming interface.

If you require assistance please feel free to contact your local distributor or the support of Stemmer Imaging.

Movie2 is using the same Magic Numbers as the classic version of CVB Movie.

This means that everybody who in the past purchased a license for CVB Movie is entitled to use Movie2 from now on at no additional cost.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie2 tool are:

Movie2.dll	2.1.1.16
Movie2.ocx	2.0.2.96
iMovie2.dll	1.0.0.5
MovieInteractive2.exe	1.0.0.0
MovieInteractive2PlugIn.dll	1.0.0.0
MIAPaoiCut.dll	1.0.0.0
MIAPBayerConversion.dll	1.0.0.0
MIAPFrameSkipping.dll	1.0.0.0
MIAPResize.dll	1.0.0.0

### Movie (deprecated)

The only change to the classic CVB Movie tool concerns the utility "MovieInteractive":

- minor changes have been made to the graphical user interface
- it is now possible to specify the time span over which recording should take place
- the Common Vision Blox GenApi Grid has been added to MovieInteractive so that the parameters of GenICam compliant cameras may now be changed from within MovieInteractive
- MovieInteractive may now be used with a USB hand switch (order code "CVX Hand switch") to control start and stop of the video recording
- a bug in the handling of the acquisition ring buffer has been fixed
- first time starting the MovieInteractive Demo Error loading image file occurs, problem fixed
- problem in hardware timestamp according to HDD Recording fixed
- 

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.2.0
CVAVIRec.ocx	1.0.1.0
CVBSourceDS.ax	1.0.2.1
MovieInteractive.exe	1.0.6.0
iCVAVIRec.dll	1.0.1.0

**Changes with CVB version 10.1**

The "MovieInteractive" tool has been expanded:

- It is now possible to use an USB hand/ foot switch to start and stop the recording to hard disc.  
In the other case to write the images from the RAM memory into an avi file to hard disc.  
The key short cut STRG + R can be pressed to start/ stop recording or write images from RAM memory to hard disc into an avi file.
- timestamp for avi files in bayer format and converted to RGB has been added.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.2.0
CVAVIRec.ocx	1.0.1.0
CVBSourceDS.ax	1.0.1.2
MovieInteractive.exe	1.0.4.0
iCVAVIRec.dll	1.0.1.0

**Changes with CVB version 10.1**

The "MovieInteractive" tool, newly introduced in Common Vision Blox 10.0, has been expanded to now support converting Bayer-filtered input automatically into RGB images including White Balancing. This is particularly useful when working with cameras or frame grabbers that do not perform this conversion on their own either due to lack of processing hardware or for performance reasons.

For this feature CVB BayerToRGB Tool is used.

Also a problem in the usage of the CLAllSerial Dll of Camera Link acquisition devices has been resolved.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.2.0
CVAVIRec.ocx	1.0.1.0
CVBSourceDS.ax	1.0.1.2
MovieInteractive.exe	1.0.3.0
iCVAVIRec.dll	1.0.1.0

**Changes with CVB version 10.0**

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

The default synchronization mode for AddFrame has been changed: In previous versions, AddFrame returned immediately while the image was being copied in the AVI stream in the background.

If the subsequent image arrived too fast, this could lead to a situation where images were lost and not written to the stream.

Now, by default the AddFrame method does not return before the complete image has been copied and sent into the AVI processing pipeline.

A new Movie Interactive Application is added to the Movie package.

The program allows recording to hard disc or recording via RAM and writing the streams as AVI-file as well as loading and replaying sequences.

It uses the CVB Textout Tool for the Timestamp option.

For details see the CVB Movie Manual (refer CVB manual) chapter Movie Interactive Application.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.2.0
CVAVIRec.ocx	1.0.1.0
CVBSourceDS.ax	1.0.1.2
MovieInteractive.exe	1.0.0.0
iCVAVIRec.dll	1.0.1.0

## Version 1.1 (CVB 8.0 Service Pack 3)

### Fixed Bugs

- A problem in the integration of Movie into iTuition has been fixed.

### New Functions

- A new acquisition mode for grabbers with IGrab2 interface has been added (see documentation of SetAcquisitionMode for details).

- 

### .Net support

- Movie supports the MS.NET Compiler.  
The cvAVIRec Control and also the cvAVIRec Library ( from CVB 8.0.3b on ) are supported.
- The setup includes also a new tutorial for CS.Net (CSharp) with sourcecode.  
For further information please have a look at the CVB Manual.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.1.0
CVAVIRec.ocx	1.0.1.0
CVBSourceDS.ax	1.0.1.0

## Version 1.0 (CVB 8.0 Service Pack 1)

### Fixed Bugs

- A minor bug in the DirectShow filter CVBDShowSource.ax was fixed.  
This bug did lead to problems, when images from RGB sources were streamed, if the color ordering was different from BGRBGRBGR...  
Another consequence of this bug was that the color plane settings were ignored.

### New Functions

- No functionality added.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.0.0
CVAVIRec.ocx	1.0.0.1
CVBSourceDS.ax	1.0.0.2

## Version 1.0

Initial Release. No Bugs known and no functionality added.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Movie tool are:

CVAVIRec.dll	1.0.0.0
CVAVIRec.ocx	1.0.0.1
CVBSourceDS.ax	1.0.0.0

## 1.2.14 Polimago

### Polimago Release Notes

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#### Changes with CVB version 13.2

- Starting with CVB version 13.2 Polimago is available in Linux.
- Added PMInterpretSpecification() method to *Polimago.dll*.
- Added InterpretSpecification() method in *iPolimago.dll*.

- `PMOpenSearchClf()` will no longer run into an access violation when trying to load a file that is not a search classifier.
- Images with nonlinear memory arrangement (hitherto incompatible with Polimago) will now be linearized automatically prior to processing.
- `SilCreateDataTypeImageEx()` and `SilAddNamedImageItem()` have been added to the *Sil.dll* to make fringe handling easier (fringe handling is not needed for Polimago and is therefore unnecessarily confusing).
- The *Sil.dll* is now capable of properly loading and saving an empty Sample Image List.
- Support for Linux has been added.

	Win32	Win64	Linux
Polimago.dll	3.0.5.5	3.0.5.5	3.5.5
iPolimago.dll	3.9.2.3		N/A

### Changes with CVB version 13.0

- Increased the processing speed of the preprocessing filters used in learning as well as classification, increasing overall performance .
- Fixed a problem that led to a lockup when the grid step size was chosen too small in `PMGridSearch`.
- The function `PMOpenSearchClf` no longer crashes when trying to load a non-existent file.
- Functions for testing a learning data access callback structure have been added.
- Learning with a data access callback structure from just two images now works.

	Win32	Win64
Polimago.dll	2.4.1.310	2.4.1.310
PolimagoLib.dll	1.0.1.0	1.0.1.0
iPolimago.dll	1.6.2.527	1.6.2.527

### Changes with CVB version 12.1

- Fixed a pointer truncation in the Win64 build that could lead to crashes during training or search.
- Fixed a problem with uninitialized variables in the Win64 build.
- Added the possibility to carry out training on a user-defined database.
- Added new tutorial that demonstrates pose estimation in C#.

	Win32	Win64
Polimago.dll	1.6.4.6	1.6.4.6
PolimagoLib.dll	1.0.0.6	1.0.0.6
iPolimago.dll	1.4.4.174	1.4.4.174

**Changes with CVB version 12.0**

Starting with Common Vision Blox 12.0, Polimago is a new component of the Common Vision Blox Package.

It is a tool for fast classifying a potentially polymorphic pattern and/or determine its rotation, scale and potentially 3D pose state.

	Win32	Win64
Polimago.dll	1.4.5.81	1.4.5.81
PolimagoLib.dll	1.0.0.2	1.0.0.2
iPolimago.dll	1.0.0.68	1.0.0.68

**1.2.15 ShapeFinder****ShapeFinder Release Notes****Changes with CVB version 13.2**

- Starting with Common Vision Blox 13.2, a CUDA-based version of the SF.dll is available for the Windows x64 platform as well as for the nVidia Tegra TX1 system. On the Windows platform, the SF\_cuda.dll is installed into the %CVB% directory. It may either be used by renaming it to "SF.dll" (it is drop-in compatible with the regular SF.dll) or - if you are developing with C/C++ - by linking your application versus SF\_cuda.lib in the %CVB%\Lib\C directory. For getting the TX1 build please contact [support@stemmer-imaging.de](mailto:support@stemmer-imaging.de).

	Win32	Win64	Linux
SF.dll	3.0.8.363	3.0.8.363	3.7.268
SF_cuda.dll	N/A	3.0.0.0	N/A
CVShapeFinder2Se arch.ocx	1.6.2.567	1.6.2.567	N/A
SF2TeachNET.exe	11.1.7142.19197	11.1.7142.19197	N/A
iSF.dll	3.9.2.3		N/A

**Changes with CVB version 13.1**

- Using scale limits in the TSymmetryParams structure that are more restrictive than the scale limits embedded in the classifier no longer leads to results being missed.

	Win32	Win64	Linux
SF.dll	3.0.7.268	3.0.7.268	3.7.268
CVShapeFinder2Search.ocx	1.6.1.514	1.6.1.514	N/A
SF2TeachNET.exe	11.1.6754.26295	11.1.6754.26295	N/A
iSF.dll	3.4.0.584		N/A

### Changes with CVB version 13.0

- Starting with Common Vision Blox 13.00.000 the ShapeFinder tool will also be available for the x64 build of Common Vision Blox.  
For this to be possible, the tool has effectively been rewritten using C++.  
The Delphi and the C++ build generally will yield the same results when using the same classifiers on the same data, with the following two exceptions:
  - Result qualities and position may differ slightly for those results that lie close enough to an image boundary for features to reside outside the image.
  - The exact sorting order for results with identical quality may differ between the Delphi and the C++ build as the sorting algorithms used are different.
- In the 32 bit Linux builds the release build shows a small rounding error that may lead to the results of GetSFImage differing slightly between the Windows and the Linux build. However, the result of GetSFImage is more of cosmetic value - the actual classification results are not affected.

	Win32	Win64	Linux
SF.dll	3.0.3.178	3.0.3.178	3.203.630
CVShapeFinder2Search.ocx	1.6.1.446	1.6.1.446	N/A
SF2TeachNET.exe	11.1.6256.3929	11.1.6256.3929	N/A
iSF.dll	3.4.0.465		N/A

### Changes with CVB version 12.0

- In iSF.dll the GetSFComment function has been modified to properly handle the string returned from unmanaged code.

	Win32	Win64
SF.dll	2.0.22.0	N/A
CVShapeFinder2Search.ocx	1.2.0.248	N/A
SF2TeachNET.exe	11.1.5683.29983	N/A
iSF.dll	3.2.2.240	N/A

**Changes with CVB version 11.2**

- A bug in the treatment of color images in ShapeFinder has been fixed:  
When passing color images with interleaved memory layout to the SF2Search function and using a correlation-based fine processing step ("Precision Boost" set to "Low" or "High") the position and quality results were different from when copying the same color plane into a different image before passing it to SF2Search.  
Now ShapeFinder verifies the assumptions about memory layout and reports the correct result.

	Win32	Win64
SF.dll	2.0.22.0	N/A
CVShapeFinder2Search.ocx	1.2.0.173	N/A
SF2TeachNET.exe	11.1.5074.26081	N/A
iSF.dll	3.2.1.166	N/A

**Changes with CVB version 11.0**

In Common Vision Blox 11.0, ShapeFinder will only be available on the 32 bit platform!

Shapefinder now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

Two issues in the VB.NET ShapeFinder 2 Teach Example has been fixed:

- Models can now be opened by double-clicking a SF2 file
- In some cases an uncaught exception occurred when loading a workspace file, depending on the settings made therein.

These exceptions are not handled properly.

	Win32	Win64
SF.dll	2.0.20.0	N/A
CVShapeFinder2Search.ocx	1.1.2.0	N/A
SF2TeachNET.exe	2.2.4156.15533	N/A
iSF.dll	3.0.0.19	N/A

**Changes with CVB version 10.2**

A faulty interpretation of the VPATs of rotated images has been fixed (this did lead to problems with drivers that do support the RotateImage setting).

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.18.0
cvShapeFinder2Search.ocx	1.1.2.0

SF2TeachNET.exe	2.0.3629.21147
iSF.dll	2.0.1.0

### Changes with CVB version 10.1

The following issues have been addressed in the new version of ShapeFinder

- On the ShapeFinder2 Search OCX's the "Correlation Threshold" property was previously ignored with a PrecisionBooster setting of "Low".  
This error has been fixed.
- The ShapeFinder2 Search OCX has been relinked with an updated dongle protection library that permits remote desktop access to applications built with it.
- A minor mistake in the way the Overlay Plugins are being used has been changed in the ShapeFinder Teach application (AddOverlayObject was used previously instead of AddOverlayObjectNET; however, under the circumstances in which ShapeFinder Teach uses it this did not really make a difference).

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The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.17.0
cvShapeFinder2Search.ocx	1.1.2.0
SF2TeachNET.exe	2.0.3278.27660
iSF.dll	2.0.1.0

### Changes with CVB version 10.0

The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.

- Learning objects in a very thin rectangular AOI could produce an access violation in previous versions.
- Loading a corrupted SF2 model could produce an exception in the previous versions.
- A memory leak in the learning functions has been fixed.
- Thread-safety has been improved.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.17.0
cvShapeFinder2Search.ocx	1.1.0.1
SF2TeachNET.exe	2.0.3075.22694
iSF.dll	2.0.1.0

**Changes in version 2.1.0**

- Extensions have been made for the new SF2 Teach program.  
The features of a found object for instance can be displayed as an overlay at the found position according to the found scaling and rotation.  
The image of the object used for the coarse search can now be displayed. This is done by using a new DLL function called PyramidImage.
- The SF2 Teach program supports now Drag And Drop for the EMU file format.
- You can now add a string comment to a model. The comment is stored together with the model in the same file and can be retrieved afterwards.  
Refer to SetSFComment and GetSFComment in the manual.
- The new function CreateSF2Ex can be used to limit the zoom factor of the search.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.11.0
cvShapeFinder2Search.ocx	1.0.0.6
SF2TeachNET.exe	2.0.x.x.

**Changes in version 2.0.2**

- An issue regarding the licensing of the tool that might lead to problems under certain conditions.
- The previous versions generated a bitmap file with the name 'xfsz.bmp' when learning new objects.
- In the previous versions the SF2 search function crashed depending on the settings of the rotation- and scale invariance.
- In the previous versions the SF2 search function couldn't find objects if the reference point was far away to the center of the feature window.  
It specially happened when searching for very big objects in small areas.
- The creation of models with don't care points has been sped up.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.6.0
cvShapeFinder2Search.ocx	1.0.0.6
SF2TeachNET.exe	2.0.x.x

**Changes in version 2.0.1**

- The new version fixes a bug regarding the returned quality of the object been found.  
When using the Precision Booster the quality could increase the maximum value of 1.0 or reach values near 0.0 (even if the object was obviously the same).

- The Visual Basic definition of the CreateSF2 function changed caused by a structure misalignment in the previous version.
- The new function SF2SearchEx allows the user to specify angle- and scale limits for the search task.
- The SF2 Teach program now supports Drag And Drop for image and SF2 model files.
- The registration dialog didn't allow registration of the tool for CVB serial numbers greater than 9999. This was only possible using the CVB SysInfo tool.

Furthermore there is a new Tutorial in the CVB Shapefinder Manual available.

It shows how to use Shapefinder2, e.g. how to use the Teach-program step by step and other useful hints.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.2.0
cvShapeFinder2Search.ocx	1.0.0.4
SF2TeachNET.exe	2.0.x.x

### Changes in version 2.0

- rotation- and scale- invariant pattern searches
- enhanced sub-pixel accuracy
- simplified programming interface with an easier implementation of training and execution
- new tutorials for the use of Shapefinder 2 with VB.Net, Delphi, VB, VC and C++Builder
- new: SearchControl for Shapefinder cvShapeFinder2Search.ocx
- new: Teach program in .Net for Shapefinder2: SF2TeachNET.exe

The new library is backward compatible to previous versions of Shapefinder, but the new classifiers can be used exclusively with the new functions.

To use the Teach application of Shapefinder V 2.0 and higher the Microsoft .NET runtime needs to be installed on your system.

You can find a version of this runtime on the CVB CD in the directory\WinTools\MicrosoftRuntimes\NET Framework Runtime.

Other localized versions of the .NET Runtime are available from Microsoft under [www.microsoft.com](http://www.microsoft.com).

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	2.0.0.0
cvShapeFinder2Search.ocx	1.0.0.3
SF2TeachNET.exe	2.0....

**Shapefinder .Net Compiler support with CVB 8.0.3**

CVB 8.0.3 comes with the necessary Shapefinder header files and wrapper dlls for the actual Microsoft .Net compilers.

As usual they are installed to the CVB directory ..\Lib\Net.

Further information regarding programming CVB and the .Net compilers could be found in the CVB Manual in the chapter .Net Programming hints.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	1.0.12.0
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**Changes in version 1.0.3**

- Licensing: The tool can be used by Windows users with non-administrator access (guests) now.
- Sample program "VCSearchAll" to detect several times the same objects.  
The relevant source code can be found in the Tool's Manual in the chapter "Practice of Operation".

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	1.0.12.0
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**Changes in version 1.0.2**

- Version 1.0.3.0 of the SF.dll fixes a memory leak in the function CreateSelectedSF.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	1.0.3.0
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**Changes in version 1.0.1**

The new version stores the registration information under HKEY\_LOCAL\_MACHINE while the previous version uses HKEY\_CURRENT\_USER.

This allows a more consistent licensing across different user accounts.

The new version still supports the old location if the new key cannot not be found.

- The coordinate system of the model image was incorrect.  
This didn't affect the processing but the display.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the Shapefinder tool are:

SF.dll	1.0.1.0
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## 1.2.16 Spectral

### Spectral Release Notes

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#### Changes with CVB version 13.2

- Starting with Common Vision Blox 13.2, "CVB Spectral" is a new tool for processing and handling hyperspectral image data. For details about the tool's capabilities and features please consult the [tool's documentation](#).

	Win32	Win64	Linux
CVSpectral.dll	1.0.6.8	1.0.6.8	1.6.8
iCVSpectral.dll	3.9.2.3		N/A

## 1.2.17 TextOut

### TextOut Release Notes

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#### Changes with CVB version 13.2

Starting with Common Vision Blox 13.02.000 the TextOut tool will also be available for the Ubuntu 18.04 builds of Common Vision Blox.

	Win32	Win64	Linux
TextOut.dll	3.2.2.219	3.2.2.219	3.202.219
FontGenerator.exe	1.1.0.1	1.1.0.1	N/A
FontGeneratorW.exe	1.1.0.1	1.1.0.1	N/A
iTextOut.dll	3.9.2.3		N/A

#### Changes with CVB version 13.1

Starting with Common Vision Blox 13.01.000 the TextOut tool will also be available for the Linux builds of Common Vision Blox.

	Win32	Win64	Linux
TextOut.dll	3.2.1.144	3.2.1.144	3.201.144
FontGenerator.exe	1.1.0.1	1.1.0.1	N/A
FontGeneratorW.exe	1.1.0.1	1.1.0.1	N/A
iTextOut.dll	3.9.1.57		N/A

### Changes with CVB version 13.0

Starting with Common Vision Blox 13.00.000 the TextOut tool will also be available for the x64 build of Common Vision Blox.

	Win32	Win64
TextOut.dll	3.0.1.52	3.0.1.52
FontGenerator.exe	1.1.0.1	1.1.0.1
FontGeneratorW.exe	1.1.0.1	1.1.0.1
iTextOut.dll	2.4.0.439	

### Changes with CVB version 11.1

- In Common Vision Blox 11.1, TextOut will only be available on the 32 bit platform!
- In the iTextOut.h file from the Common Vision Blox 11.00.001 release a comma was missing, resulting in a syntax error when this file was included.

	Win32	Win64
TextOut.dll	2.1.0.1	N/A
FontGenerator.exe	1.1.0.1	N/A
FontGeneratorW.exe	1.1.0.1	N/A
iTextOut.dll	1.1.0.1	N/A

### Changes with CVB version 11.0

- In Common Vision Blox 11.0, TextOut will only be available on the 32 bit platform!
- TextOut now uses the new licensing infrastructure introduced in Common Vision Blox 11.0, nullifying any effect of the license queries on processing time.

	Win32	Win64
TextOut.dll	2.1.0.1	N/A
FontGenerator.exe	1.1.0.1	N/A

FontGeneratorW.exe	1.1.0.1	N/A
iTextOut.dll	1.1.0.1	N/A

### Changes with CVB version 10.0

- The tool version has changed due to a major change in the setup architecture introduced with Common Vision Blox version 10.0.
- There are no changes to the Tool itself.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the TextOut tool are:

TextOut.dll	2.0.0.1
FontGenerator.exe	1.1.0.1
FontGeneratorW.exe	1.1.0.1
iTextOut.dll	1.0.1.0

### Changes in version 2.0

- Textout now supports unicode. Please refer to the tool's documentation for detailed description.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the TextOut tool are:

TextOut.dll	2.0.0.0
FontGenerator.exe	1.1.0.1
FontGeneratorW.exe	1.1.0.1

### Changes in version 1.1.1

- Added .NET support.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the TextOut tool are:

TextOut.dll	1.0.1.1
FontGenerator.exe	1.0.0.1

### Changes in version 1.1

- The TextOut.dll has been modified to support Windows-Users with none-administrative privileges now.

The file versions of the ActiveX control(s), executable(s) and DLL(s) that are currently part of the TextOut tool are:

TextOut.dll	1.0.1.1
FontGenerator.exe	1.0.0.1

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