

CVB Connect, CVB Movie and CVB Driver for LabView™ are among the latest of the tools in the Common Vision Blox image processing library. Here is a short overview of the features afforded by these software tools.

■■■■■ CVB Connect

Increasingly, the individual components of modern production systems are interconnected via networks with ever increasing bandwidth. At the same time, there is a trend away from proprietary industrial bus systems towards Ethernet with the TCP/IP protocol. In the meantime, connectors, cables and switches have become available which are capable of standing up to the rigors of a tough industrial environment.

Even industrial image processing systems are increasingly being connected to networks of this type in order to transfer the evaluation results to a process control computer or to a diverter unit.

CVB Connect provides the ideal solution for transferring camera images across a network. CVB Connect makes it possible to send image data obtained from a CVB-compatible image capture device directly across the network. On the image source side, a special server control handles network communication tasks as and when required.

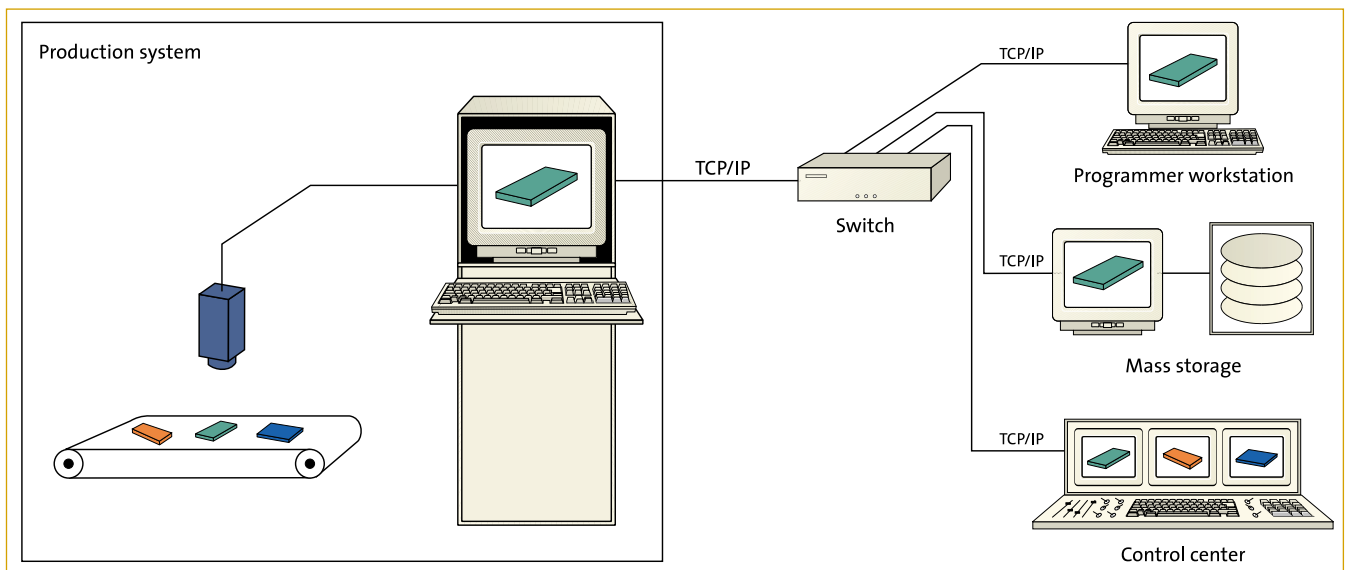
On the image receiving side, you only need to ensure that the required CVB application has loaded the CVB Connect tool network driver instead of the driver for a local image source. These drivers then contacts the image server using the specified IP address of the computer. This gives the client computer complete control of the frame grabber on the server. This means that it can, for example, activate or deactivate the grab function, modify the trigger modes

or switch the ports in the same way as it would if it were using a local capture device. On the server side, the settings that can be made by the client can also be restricted for security reasons. It is even possible for a single server to service a number of clients.

The use of the TCP/IP protocol allows any medium which supports a TCP/IP protocol to be used as the network (the simplest case being Ethernet). TokenRing networks or Wireless-LAN architectures may, of course also be used. The fact the image data is transferred in uncompressed form means that the greater the bandwidth you have available to you, the better.

Areas of application for CVB Connect:

- Transfer of image data during application development from a server to a computer in a different location which has no capture hardware or which is outside the production system
- Monitoring of current production by transferring the image to a computer in the control center
- Transfer of a pre-processed image to a number of computers for further parallel processing
- Transfer of errored images for archiving on special mass storage media
- Remote maintenance of the software and the frame grabber settings
- Access to a single image source from a number of computers (e.g. training rooms)



■■■■■ CVB Movie

With DirectShow™, part of the DirectX™ platform, Microsoft Windows™ provides powerful support for multimedia applications, for example, for recording and playing video sequences in compatible file formats.

CVB Movie serves to connect Common Vision Blox, the standard library for industrial image processing, to MS DirectShow the multimedia standard for Windows operating systems.

CVB Movie allows you to record video sequences directly to the hard drive in the form of AVI files. The file can then be played using the CVB Image Manager or any other playback program. Since CVB Movie already makes use of the DirectShow video codecs available in the system during the recording process, a wide range of storage formats can be used. Depending on the video codec selected, it is even possible to save video files that have been compressed using the most recent compression algorithms. Obviously, the video codecs used must be available on both the recording and the playback systems. As well as the continuous recording of a video sequence from a CVB-compatible image source, the video file can

also be used to archive individual images which can be attached to an AVI file as required.

CVB Movie has a wide-range of possible uses:

- Decoupling of the time an image is recorded from the subsequent evaluation of that image
- Recording of memory-intensive image sequences directly to hard drive
- Recording of portable, compressed video sequences, for example, to be sent by email for feasibility studies
- Archiving of individual errored images on an installation in a single, compressed file for efficient transfer of errored images during remote maintenance of the installation

For recording of very rapid, or time-critical processes you should also bear CVB Sequence in mind. This tool records a sequence in uncompressed form in the main memory of the computer. This achieves very high speed recording, but the process is limited to relatively short recording times due to the amount of main memory available.

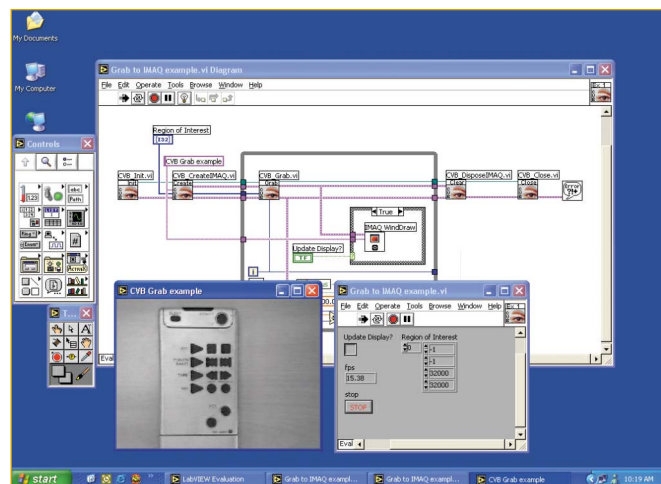
Windows, DirectShow and DirectX are registered trademarks of Microsoft.

■■■■■ CVB Driver for LabView™

CVB Driver for LabView™ can be used in conjunction with the CVB Image Manager to allow hardware-independent image recording from CVB to be used in the context of the LabView™ software from National Instruments. All the image sources supported by CVB, including the network driver from CVB Connect, can be made available to LabView™ users with this driver and can then be further processed using the normal methods and image processing algorithms available in this program.

This tool is further evidence of the commitment of Common Vision Blox to offering users the greatest possible flexibility and independence when designing their image processing systems. An important factor in favor of Common Vision Blox is the hardware independence arising from the support provided for products from a whole range of vendors.

In Common Vision Blox, an »abstracted CVB image« is generated from each captured image. This means that any downstream software development based on this image can be completely decoupled from the technology used to capture the image. Thus, as far as software development is concerned, it is of no relevance whether a standard camera, a high-resolution camera or even a line-scan camera is used. All that is required is to load the appro-



appropriate driver in order to adapt your application to the image capture hardware that is currently available. You can even change the hardware at a later point. This gives you security when planning and developing industrial applications. This independence taken a step further by the CVB Driver for LabView™, as this tool enables access to an abstracted CVB image in LabView™.

LabView™ is a registered trademark of National Instruments.

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