imc STUDIO 5.0

imc STUDIO is the common framework uniting various imc software plug-ins to a modular system. A series of imc STUDIO Editions is available that each comprise a number of certain plug-ins as a standard configuration. Additional plug-ins can further extend such editions and are individually licensed.

Edition	Order code

- imc STUDIO Runtime
- imc STUDIO Standard
- imc STUDIO Professional
- imc STUDIO Developer

- imc STUDIO-RUN
- imc STUDIO-STD
- imc STUDIO-PRO
- imc STUDIO-DEV

Available plug-ins:

- imc STUDIO Setup
- imc STUDIO Panel
- imc STUDIO Widgets:
  Automotive, Industrial, Designer, Aviation
- imc STUDIO Sequencer
- imc STUDIO Automation

- imc STUDIO Video
- imc STUDIO Monitor
- imc STUDIO Scripting
- imc STUDIO ProjectManagement
- imc STUDIO DataProcessing
- imc STUDIO PowerQuality

Supported imc measurement device groups:

- imc CRONOS*compact*
- imc CRONOS*flex*
- imc CRONOS-PL/-SL as of 07/2005

- imc C-SERIES
- imc BUSDAQ with serial numbers 13xxxx
- imc SPARTAN with serial numbers 13xxxx

System Requirements

Supported operating Systems

- Windows 8
- Windows 7 (32 bit; recommended: 64 bit)
- Windows Vista (32 bit) as of SP1
- Windows XP (32 bit) as of SP3

Minimum requirements for the PC [1]

- Hyper-threading or Dual Core processor with 2 GHz clock rate
- 2 GB RAM / 4 GB RAM for Windows 7 and 8 (64 bit)
- 10 GB free hard disk space (NTFS format)
- For installation of the software via DVD an appropriate drive is needed
- Color graphics (16-bit color resolution)
- Screen resolution 1280 x 768

[1] A system with minimum requirements is not adequate for connection with multiple devices and complex design tasks with the imc STUDIO Developer. Use such systems preferably only for data monitoring purposes.

Recommended configuration for the PC

- Quad Core processor with 2 GHz clock rate or higher
- 3 GB RAM (32 bit) / ≥8 GB RAM (64 bit)
- 10 GB free hard disk space (NTFS format)
- For software installation via DVD an appropriate drive is needed
- True-Color color output (32-bit color resolution)

- Screen resolution: 1280 x 1024 or more
- Windows 7 or 8 (64 bit)

Licensing

- License activation is performed using the imc LICENSE Manager.
- An additional second activation is allowed. Find details in the imc LICENSE Manager documentation.
- The Edition imc STUDIO Runtime is a restricted version, free of charge. The trial demo version (offering full functionality of imc STUDIO Developer Edition) is for free as well. Both require activation.

Additional imc Software Products (optional)

- **imc FAMOS**
  Some imc STUDIO plug-ins (Automation, Sequencer, Panel) are able to integrate imc FAMOS for data analysis purposes (executing sequences). imc FAMOS is a imc software for complex analysis, display and presentation of signals on the PC ("offline"): www.imcfamos.com
  imc FAMOS must be separately purchased and licensed for the PC. Details on imc FAMOS are available in the software documentation. To execute ready to run sequences for analysis in imc STUDIO, imc FAMOS Runtime, Professional or Enterprise is required.

- **imc Online FAMOS Professional**
  Some imc STUDIO plug-ins require devices having imc Online FAMOS Professional.
  imc Online FAMOS, or its Professional version, is the software which processes data within the measurement device ("online"). imc Online FAMOS Professional must be purchased and licensed **along with the device**.

- **imc SENSORS**
  imc STUDIO Setup can use the imc SENSORS database. imc SENSORS is a ready-to-go, universal database application for administering and editing sensor information. In particular, the entries in the sensor's technical data sheet as well as its calibration values are processed and managed. Along with these values for smart sensors (TEDS) defined in IEEE 1451.4, selections of additional sensor properties can be entered.

Overview of the functions of imc STUDIO editions

Funcionality	Description	imc STUDIO Edition Runtime	Standard	Professional	Developer
Configuration	**imc STUDIO Setup**				
Setup	Device configuration (setup tables and guided assistants)		●	●	●
	Customizing of tables		●	●	●
	Combined parameters, meta data, pictures, doc etc.			●	●
Layout editor	Free design of custom setup menus (GUI)				●
Visualization	**imc STUDIO Panel**				
Panel	Customized visualization of data, including printable pdf reports with measured data		●	●	●
	Individual design and layout, repository		●	●	●
Widgets	Gauges and control elements (basic selection)		●	●	●
	Extended selection and styles (Automotive, Industrial, Designer)			●	●
Full screen view	Hidden menus and restricted access (via full screen panel)			●	●
Data browser	Management of stored data: browse, search and filter		●	●	●
	Structuring according to meta data		●	●	●
Runtime functionality	Execute but not modify all functions (incl. widgets, full screen)	●	●	●	●
Administration	**imc STUDIO Framework**				
Project management	Experiment templates			●	●
	Administration and grouping of experiments within projects			●	●
	Display of meta data while selecting experiments		●	●	●
Meta data	Augmenting data with descriptive meta information		◉	●	●
	Defining custom meta data (additional table columns for experiments and channels)			●	●
User Administration	Access control, roles and rights management			●	●
Customizing of menus	Custom functions for menus and ribbons		●	●	●
Automation	**imc STUDIO Sequencer, imc STUDIO Automation**				
Panel control elements	Interactive launch of actions via panel control elements		◉	●	●
Sequencer	Batch generator, workflow automation			●	●
Automation	Design of real-time teststand automation (2)			o	●
Runtime functionality	Execute but not modify (Sequencer, Automation) (2)	●	●	●	●
Custom solutions	**imc STUDIO Sequencer, imc STUDIO Scripting, imc STUDIO DataProcessing**				
External applications	Launch external code (DLL) and executables (exe)		◉	●	●
Scripting	Integration of custom specific user code				●
	incl. accessing external hardware (actuators, lab equipment and devices etc.)				
Runtime functionality	Execute but not modify scripts	●	●	●	●
DataProcessing	DLL-interface for custom specific processing of data streams	●	●	●	●
Data analysis	**Extension**				
imc FAMOS	Create automated analysis sequences, extensive post processing	o	o	o	o
imc FAMOS Runtime	Execute analysis sequences (instant post processing)	o	o	o	o
imc Online FAMOS	Real-time analysis on data streams (device based platform and license)	o	o	o	o
imc STUDIO PowerQuality	Powergrid analysis (EN 50160, IEC 61000-4-30)	o	o	o	o
Additional data sources	**Extension**				
imc STUDIO Video	Synchronized video acquisition	o	o	o	o
Monitoring	**Extension**				
imc STUDIO Monitor	Multi-client monitoring and visualization	o	o	o	o
Administration	**Extension**				
imc SENSORS	Sensor database integration	o	o	o	o

● : Included,   ◉ : Subset of full feature set,   o : Optional extra

Runtime and Standard Edition can execute, but not modify, configurations created with higher editions of imc STUDIO

(2) requires additional device based license imc Online FAMOS Professional

Plug-in imc STUDIO Setup

imc STUDIO Setup is the integrated user interface for the complete configuration of all measurement parameters along with its saving in a system configuration. This user interface can be adapted to the particular intended application. This provides the ability to link particular settings options to the user's specific level of authorization. Similarly, any interface elements which are not needed can be hidden. As a result, the training required of a user to operate routine experiments is kept to a minimum.

All familiar hardware properties of imc measurement devices are completely supported.

Special functions and applications:

- Uniform operating software for imc's Ethernet-compatible measurement devices; (see requirements of the measurement device [1])
- imc STUDIO Setup automatically recognizes the measurement system's capabilities and offers correspondingly adapted configurations (low training requirements – high measurement reliability)
- Setting up a system configuration ("Experiment") is possible without even having a measurement device physically available ("offline")
- Configures auto-start for autonomous autarkic measurement operation (Diskstart/Autostart)
- Supports sensor recognition by means of TEDS conforming IEEE 1451.4.

Channel settings:

- All inputs and outputs of a measurement system can be set using one single user interface (analog inputs/outputs, digital inputs/outputs, field-bus channels, virtual channels, etc.)
- Per-channel configuration (e.g. name, sampling interval, measurement duration, input range, characteristic curve correction, filters, and much more.)
- Capture of imc CRONOS*flex* channel data in 24-bit
- Opening independent curve windows, which are not connected with the imc STUDIO Panel

Data processing:

- Data storage set on a per-channel basis
- Saving of measured data in a different file format (imc Format Converter,e.g. ASCII, EXCEL and more)
- Storage location on the PC and / or the device or on a network server
- Each trigger event can be saved to a separate data file
- Channels can also be parameterized for internal processing only (data not saved)
- CAN Log data in the file format: Vector(CANAlyser) possible

File Manager:

- Enhances the Windows Explorer®
- Enables copying and deleting of files and folders from the devices internal storage to a PC.

Trigger-Machine:

- Either directly started or triggered measurement
- Starting and/or stopping by trigger
- 48 independent triggers possible
- Pre-triggers adjustable
- Various definable events (thresholds, time-in-range, signal edges, etc.)
- Logical conjunctions of multiple events can form complex trigger conditions
- Number of trigger releases freely selectable (multitrigger)
- Event-driven digital output

Balancing and taring function:

- Setting of the scaling and balancing performed on a per-channel basis and the results are displayed

for the current experiment.

Application-oriented functions (optional):

- Device display (internal display or with hand-held terminal)
- Display configuration / Display Editor
- Timer start
- Autostart / Diskstart
- Synchronized measurement with multiple devices
- Real-time clock (DCF 77 or GPS radio clock for synchronization of sampling clocks and absolute time)
- Exchange of display variables via the network
- imc Online FAMOS: for device based immediate real-time signal analysis (digital filtering, control commands, closed-loop control, FFT, order-tracking) as well as real-time control.
- Synthesizer and PID-controller module
- Process vectors
- Synchronous Tasks, imc Online FAMOS Professional necessary

Supported interfaces of imc measurement devices:

- Ethernet (LAN)
- Modem, external modem for PPP remote access (analog, ISDN, GSM)
- WLAN
- Field-busses (CAN + protocols, ARINC, LIN, FlexRay, AFDX, XCP on Ethernet, J1587)
- CANSAS configuration via imc STUDIO Setup, Vector database import (optional)
- Device configuration via FTP
- imc REMOTE LinkSecure: Device access by means of imc LINK via secure https access (for imc devices of serial number 14xxx)
- imc REMOTE WebServer 2.1: Provides platform-independent remote access to imc measurement devices

Maximum channel count per device

Type	CRPL/SL/*compact* C-SERIES, SPARTAN, BUSDAQ	CRONOS*flex*
All **active** channels in total incl. their monitor channels	512	
Active Analog inputs incl. their monitor channels	198	128
Analog inputs (active + passive)	240 (+240 Monitor channels)	
Field-bus channels (active + passive) incl. their monitor channels	1000	
Incremental counter channels	16 (+16 Monitor channels)	
DIO-Ports + DAC-Ports (modules with analog outputs)	16	
Process vector variables	800	

Additional imc STUDIO software options for devices:

Components	Order code	CRPL/SL/*compact*/*flex*, C-SERIES	SPARTAN, BUSDAQ
imc DEVICES		✓	
imc Online FAMOS	DEV*/OFA	✓	o
Update from imc Online FAMOS to imc Online FAMOS Professional	DEV*/OFA-UP	o	
imc Online class-counting	DEV*/ONLCLASS	o	
imc Online order tracking	DEV*/ONORDER	o	
Vector database interface	DEV*/VEC-DATB	o	
ECU protocols for CAN Interface	DEV*/ECUP	o	
imc CANSAS configuration	CAN/CONSOFT	o	

* DEV is to be replaced with the device's order code abbreviation.

imc DEVICES: Device Driver, Firmware and Web-Server.
                            Also: alternative but limited and restricted form of operating software. Comprises a subset of functions such as storage, trigger configuration, messaging etc.

imc Online FAMOS: imc Online FAMOS offers a large number of real-time functions for pre-processing. The pre-processing is performed by a digital signal processor (DSP) in the device.

Online class-counting: Extension for imc Online FAMOS: Rainflow counting for fatigue analysis
Online order tracking: Extension for imc Online FAMOS: order tracking analysis of rotating machinery
Vector database interface: Import of *.dbc CAN configuration files
ECU protocols: Support for complex ECU protocols (CAN-Bus)
imc CANSAS
configuration software: Assistant for the configuration of imc CANSAS modules.

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Plug-in imc STUDIO Panel

The imc STUDIO Panel provides, in addition to the familiar imc curve window, a wide scope of new graphical display possibilities.

It is possible to create report pages for documentation of measurement and analysis results.

Special functions and applications

- The layout of the report pages can be designed freely and be exported in PDF (report mode).
- Compositions of imc STUDIO Widgets in freely configurable pages (dialog mode)
- Special imc STUDIO Widgets can be assigned to commands.

Basic functions

- Creation of multiple pages in which display and control elements such as curve windows, potentiometers, scales, state indicators can be positioned in any arrangement.
- Loading and saving of individual curve window configurations
- Synchronized navigation through the data sets in multiple curve windows along one scaled time axis

Data Browser

- Current and saved measurements
- Structured according to channel category
- Searching and filtering
- Navigation by means of tree diagram, selection of either fixed or variable channels for visualization purposes
- All available channels and variables can be linked with Widgets
- Opening of independent curve windows not associated with the imc STUDIO Panel
- Declaration of variables

imc STUDIO Widgets

- imc Curve window
- Control elements such as state indicators, edit boxes, numeric inputs, buttons, switches etc.
- Extended Widgets are available in three pre-defined styles (Automotive, Industrial, Designer)
- A repository is available in which settings for the Widgets can be saved

Extra functions

- Loading and saving of pages
- Loading and saving of curve window configurations
- Integration of text boxes within the pages for entering comments
- Copying of pages and Widgets
- Multi-selection of Widgets and various options for orientation and anchoring
- Saving of pages and curve window configuration in a freely selectable repository
- Widgets can be grouped

Plug-in imc STUDIO Sequencer

imc STUDIO Sequencer is the plug-in to create an automated measurement workflow. A sequence of actions is designed by means of a graphical Editor in an action table. Alternatively, command sequences can be coupled with events. Global, pre-defined system events as well as user-defined events can be used.

For the purpose of performing analysis by means of imc FAMOS, interaction between imc STUDIO and imc FAMOS is possible. The prerequisite is installation of an imc FAMOS version of 6.1 or higher, as a Runtime, Professional or Enterprise Edition (see Additional imc software products).

Plug-in imc STUDIO Automation

imc STUDIO Automation allows the implementation of real-time control for test stand automation. Definition and configuration of the control structures and routines is performed on the PC with graphic oriented environment provided by this plug-in. The resulting routines are automatically compiled to code which is directly executed on the measurement device itself. Execution involves the real-time capable platform imc Online FAMOS.

For the purpose of performing analysis by means of imc FAMOS, interaction between imc STUDIO Automation and imc FAMOS is possible. The prerequisite is installation of an imc FAMOS version of 6.1 or higher, as a Runtime, Professional or Enterprise Edition (see Additional imc software products).

Special functions and applications:

- Real-time capable process control (state-based control model)
- Trace info (tracking of current states during execution)
- Limit value monitoring (background supervision of thresholds)
- Exception raising and error handling
- Graphically oriented definition of the state model (Drag & Drop)
- Additional integration of PC interactions (running Sequencer commands, calling Panel-pages and applying imc FAMOS functions to channel data)
- Quick and easy design of individual user interfaces (GUI) by means of Drag & Drop

Measurement device requirements:

- The same hardware prerequisite apply as for imc STUDIO 5.0.
  An extra device option is required: imc Online FAMOS Professional

Features

- Graphical display of the task flow
- Up to five parallel, synchronized tasks can be performed per measurement device, in real-time with selectable cycle intervals of 100 µs to 1 s.

Plug-in imc STUDIO Scripting

The imc STUDIO Scripting is an imc STUDIO plug-in which provides a programming interface (C#, .NET). It comes with the editor SharpDevelop as the development environment.

Along with the ability to freely program routines, Scripting also gives the user access to all major functionalities of imc STUDIO, such as:

- reading and writing of device and channel setups,
- access to the Panel and the Widgets,
- access to the Data Browser: creation, reading and writing of variables,
- processing of channels measurement data with imc FAMOS functions,
- execution of menu actions,
- running Sequencer commands,
- response to events.

The following mechanisms are provided for running scripts:

- as a command
  - in the Sequencer
  - to a Widget
  - in response to events
- in the background
  - linked to a Panel page
  - linked to the experiment or the project

Plug-in imc STUDIO DataProcessing

imc STUDIO DataProcessing is the interface for user-defined DLLs for the purpose of data stream processing.

Plug-in imc STUDIO PowerQuality

This plug-in applies complex power analysis to measurement data, such as those of a current, continuously running measurement. It derives characteristic parameters for powergrid analysis according to EN 50160 (IEC 61000-4-30 Class A).

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Plug-in imc STUDIO Monitor

The imc STUDIO Monitor plug-in allows the connection to one or more measurement devices during a running measurement. Data can be viewed and edited live on multiple workstations. Monitor is a plug-in for imc STUDIO but is actually executed as a separate program. A maximum of three PCs on which imc STUDIO Monitor is installed can be directly connected with a device of SN12xxx, or four PCs can be directly connected with a device of SN13xxx.

Plug-in imc STUDIO ProjectManagement

imc STUDIO ProjectManagement administers all files accruing from both the configuration and data acquisition processes. A database is created in which all configurations (experiments) and measured data are stored. Settings applicable across the experiment boundaries, as well as the experiments themselves are saved in projects. These associated settings are available for all experiments belonging to the respective project. Creating multiple projects allows a clear structure to be maintained.

Basic functions:

- Management of multiple projects and their respective settings
- Export/Import of projects or selected experiments
- Creation of multiple experiment templates with arbitrary default settings

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Plug-in imc STUDIO Video

imc STUDIO Video integrates the acquisition of video data into imc STUDIO 5.0. Simultaneously with the capture of data from imc devices, video data from cameras are recorded and saved. The cameras are connected to the control PC on which imc STUDIO 5.0 is running. The achievable data rate depends on the PC's performance.

Data capture:

- Two measurement channels per camera are available simultaneously: the main channel and the monitor channel
- Main channel for high-speed capture and storage, e.g. for snapshots
- Duplicated monitor channel at low-speed sampling rates, e.g. for long-term measurements
- Independent and redundant resampling for optimized system loading

Visualization:

- A video-widget (window) is provided to display video data on Panel pages.
- Multiple such video windows can be placed on the pages of the imc STUDIO Panel.
- Each video window can be assigned to either a camera's main or monitor channel.
- In the video window, data are displayed even before release of the trigger.

Trigger:

- The main- and monitor channels can each be assigned to different imc measurement device triggers.
- The imc measurement device's triggers are also the triggers for the camera. This means that video channels are triggered at the same time as the associated imc measurement device channels.
- Pre-trigger: As for the imc measurement device channels, it is also possible to configure pretriggers for video channels. This means that the data recorded can also include images relating to situations prior to the trigger events.
- Pre-trigger duration: 0 sec to 10 minutes
- Stop trigger is currently not supported

Synchronization:

- Automatic synchronization of the video- and measurement data
- Synchronization via Ethernet with the imc measurement device
- The achievable accuracy depends on the workload of the entire system.
  Up to dt = [1 frame duration + 20 ms] is achievable.
- The device must be connected with the PC with at least a 100 MBit/s Ethernet line, with a maximum of 1 hub or switch in between.

Advisory notes:

- For compatibility issues and stable operation, the combination of the camera and camera driver is crucial. The combinations supported are reflected in the table below. The table is necessary because, unfortunately, both cameras and drivers (especially in combination) are not always flawless. Any combinations other than those listed can lead to unstable operation of the entire system and is therefore neither recommended nor supported by imc.
- Systems with cameras from different manufacturers are not recommended, since the drivers could also interact uncontrollably.
- For maximum cable length between the control PC and camera, please refer to the respective technical specs for the camera.
- There are many cameras and frame grabbers available, that come with "DirectShow" Drivers. Operating such devices with imc STUDIO is at the user's own responsibility. imc can only support cameras listed in the table below.

Data throughput:

- The data transfer rate is specified as the frame rate (frames per second).
- Frame rate: Typically 60 fps achievable.
- The frame rate is based on pictures of the size 640 * 480 pixels with 1 Byte per Pixel in Bayer encoding, meaning 300 kByte per frame. This results in 17.5 MByte per second being continually written to the data storage medium.
- With the computer equipped accordingly, in Bayer format up to 100 fps can be achieved for 640 * 480 pixels or 200 fps for 320 * 240 pixels.
- The data transfer rate stated is aggregate. When multiple cameras are used, they split the transfer rate. Thus, a camera with 60 fps has about the same transfer volume as two cameras with 30 fps apiece. One camera at full resolution of 640 x 480 generates about the same data volume as four cameras with 320 x 240 resolution.
- With other encoding (such as RGB instead of Bayer), the data volume is increased threefold. This means the achievable frame rate is reduced to one third.
- With triggered data recording (all video channels not assigned to any 1-Trigger), the achievable frame rate is cut in half due to higher demands on the system made by the circular buffer memory used.

Prerequisites for achieving maximum frame rate:

- Windows 7 operating system. The performance of XP and Vista is lower in certain areas.
- Hard drives: Sold State Disk (SSD) or 3.5" SATA hard drives (at least 5400 revolutions per minute) configured as Raid 0 [1]. Please note that 2.5" hard drives are much slower. Particularly in notebooks, slower hard drives are often installed.
- The data carrier may only be filled to a maximum of 70%. Note that writing to a harddisk that is almost full results in significantly reduced writing speed.
- The data carrier may not be fragmented. Note that high writing speed is only achieved if the write head is not forced to excessive displacements.
- Hard drive controller: This must allow data throughput in write mode. Please note that during measurement operation mode, not only video files have to be written, but other data as well!
- Processor: Quadcore with 2.4 GHz (or in case of using Intel I7, two processor cores should be sufficient)
- Interface to camera: 1 GBit Ethernet, Firewire A or B or USB as of Version 2.0
- No virus scanner for video files
- No backup tool (or synchronization tool) in use during the measurement
- No additional programs running on the computer. Also services such as hard drive defragmentation or file indexing may not be running during measurement.

[1] A RAID system consists of multiple hard drives connected together in Stripe-Mode (RAID 0). This increases the capacity as well as the data throughput. It is also possible to connect more than two hard drives, but eventually the hard drive controller imposes limits on the data throughput.

Crucial parameters for optimum framerate performance:

- The maximum frame rate is determined by the camera's technical specs.
- The performance capacity of the interface to the camera, e.g. 400 MBit/s for Firewire A.
- The hard drive controller's and its PC interface and driver
- Processor and mainboard chip set
- The hard drive's maximum writing speed
- Compression

Data storage:

- The video files are saved on the PC's hard drive in the same folder as the stored data for the measurement.
- The size of the video files is only limited by the hard drive.

Parameterizing:

- Resolution in pixels
- Video-format (e.g. Bayer or RGB)
- Capture rate in frames per second (fps)
- Pretrigger duration
- Recording duration
- Trigger assignment
- Camera parameters such as brightness, contrast, color, exposure etc.
- Compression

Camera/driver table

Supported and tested cameras:

Camera manufacturer	Camera model	Connect.-type	Driver manufac.	Driver version	Operating system	Limitations / Remarks
Imaging Source	DFK 21BF04	1394-Fire Wire A	Imaging Source	4.1.1.1	Windows XP / Windows Vista/ Windows 7	
Imaging Source	DFK 21BG04.H	Gigabit-Ethernet	Imaging Source	1.0.0.513	Windows XP / Windows Vista/ Windows 7	no recognition of plugging/unplugging exposure automatically regulated in response to frame rate
Imaging Source	DFK 31AF03-Z2	1394-Fire Wire A	Imaging Source		Windows 7	
Allied Vision	Marlin F-033C	1394-Fire Wire A	Allied Vision		Windows XP / Windows Vista/ Windows 7	few camera settings available
Basler [2]	Scout scA640-120fc	1394-Fire Wire B (A compatible)	Basler		Windows XP / Windows Vista/ Windows 7	no recognition of plugging/unplugging
Basler	Scout scA640-120gc	Gigabit-Ethernet	Basler		Windows XP / Windows 7	no hot-plug recognition
Basler	Ace acA640-90g	Gigabit-Ethernet	Basler		Windows XP / Windows 7	Sensor: 1/3" Sony ICX424 PoE (Power over Ethernet) no hot-plug recognition
Basler	Ace acA640-100g	Gigabit-Ethernet	Basler		Windows XP / Windows 7	Sensor: 1/4" Sony ICX618 PoE (Power over Ethernet) no hot-plug recognition
Basler	Ace acA645-100g	Gigabit-Ethernet	Basler		Windows 7	Sensor: 1/2" Sony ICX414

Camera manufacturer	Camera model	Connect.-type	Driver manufac.	Driver version	Operating system	Limitations / Remarks
						PoE (Power over Ethernet) no hot-plug recognition
Microsoft	LifeCam Cinema	USB 2.0	Microsoft	3.20.240.0 (XP)	Windows XP / Windows Vista/ Windows 7	MJPEG compression
Microsoft	LifeCam HD-6000 for Business	USB 2.0	Microsoft	6.1.7600.16543	Windows 7	MJPEG compression
Microsoft	LifeCam Studio	USB 2.0	Microsoft	6.1.7600.16543	Windows 7	MJPEG compression
Logitech	HD Webcam C615	USB 2.0	Microsoft [3]	6.1.7600.16543	Windows 7	MJPEG compression
Logitech	QuickCam Pro 9000 Webcam	USB 2.0	Microsoft [3]	5.1.2600.2180 (XP)	Windows XP / Windows Vista/ Windows 7	MJPEG compression tilt/ pan listed but no functionality
Logitech	C600 Webcam	USB 2.0	Microsoft [3]	6.1.7600.16385 (W7)	Windows 7	MJPEG compression

[2] In order to achieve the full frame rate with FireWire B cameras from the company Basler, it is necessary to increase the camera's packet size to 8192. This is done under the heading Transport-Layer in the camera Properties, by means of the manufacturer-specific application (tool). Please contact your camera manufacturer for detailed information on the camera settings and other settings.

[3] Please use the supported and tested Microsoft driver, do not use the Logitech driver

Framegrabber-Driver-Table

Framegrabber manufacturer	Frame-grabbertype	Connect.-type	Driver manufac.	Driver version	Operating system	Limitations / Remarks
Imaging Source	DFG/USB2-it	USB 2.0/ PCI/PCIe	Imaging Source	1.1.0.3	Windows 7	video format with color min. 2 Byte per Pixel (compression recommended)
Blackmagic Design	Intensity Pro	PCIe	Blackmagic Design	8.0.1.0	Windows 7	can also record directly from the HDMI port, but then the frame rate must be set exactly
Enciris Technologies	LT-102-PCIE	PCIe	Enciris	1.40	Windows 7	Hardware Video compression WV1 (H264 similar)

Compression Tabelle

Compression manufacturer	Type	Version	Operating system	Limitations / Remarks
Pegasus Imaging	PICVideo (Motion-JPEG)	3 and 4	Windows 7	Note: external license necessary (demo version is not enough) as default a compression of ca. 1:12 will be set