User manual

iGuard®*LE*

The digital video recording system

Rev. 2.50

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Preface

We have taken every possible care in preparing this manual. Nevertheless, we are unable to provide any guarantee with regard to content, entirety or quality of the details contained in this manual. The contents of this manual are revised regularly and brought up to latest standards. Furthermore, we are also unable to guarantee that the product will operate fault-free even if the specifications and recommended computer configuration are observed.

Under no circumstances whatsoever are we able to guarantee that a specific application objective can be achieved with the purchase of this produsee

Liability for immediate damages, subsequent damages and damages to others resulting from the purchase of this product is excluded within the terms of existing legislation. Liability under any circumstances is restricted to the product price.

Furthermore we exclude any liability for any possible increase in telephone costs due to unwanted connections during the use of iGuard® RemoteView and/or iGuard®*LE*.

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IDS Imaging Development Systems GmbH grants the purchaser the right to use the software herewith. Copying the software in any form whatsoever, with the exception of a backup copy, is strictly forbidden.

Use MJPEG-Codec from MainConcept GmbH Aachen (© 1999 MainConcept GmbH) for video compression if using a FALCON series framegrabber.

Security

We mention that the content of this manual is not a part of an earlier treatment. All guarantees are based on your license treatment, when you bought the system.
If you need further information or if you have special problems which are not mentioned in this manual, you can contact your installer or the address listed below.

The installation and maintenance must be done by qualified persons.

The correct and secure function of this system is based on careful transport, correct storing, installation and maintenance.

Data Security

You can also store data of persons. Please take care of legislative order concerning data security.

The system and any storage media as floppy-discs, CDs, removable disks etc. should also only be reachable for you or authorised persons.

Environment
Please take care of the correct use of this system. Otherwise guarantee cannot be granted.

Avoid direct sun, wetness and shock.

The following environment is necessary:

Use:
Temperature: 0° C to 60° C

Non use
Temperature: -20° C to 80° C

Installation and maintenance
The installation, maintenance and, if necessary, repairing must be done by qualified persons.

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Contacting us

Visit our web site where you will find all the latest drivers and information about our software and hardware products as well as our partners and distributors.

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1. Introduction

Thank you for your decision to purchase iGuard®*LE*. iGuard®*LE* is a digital video recording system for the surveillance of rooms, premises, buildings, production workshops, critical public areas or any outdoor areas where security is important. Recording is possible with up to 8 cameras at the same time. A simultaneous display of all cameras for live surveillance is possible at the same time as recording. Basically the system allows two different operational recording modes which may also be combined with each other:

- **Longtime recording** analogous to the operation of a standard video recorder, which however has an option for recording of only motion pictures
- **event-triggered recording**, that is the recording of alarms with their pre-history via a ring buffer

In case of event-triggered recording the system is controlled through digital inputs which can be connected with any form of event triggering sensors. In addition, the system allows a logical operation of external sensors with an internal generated digital input. Motion detection with the connected cameras which then operate as video sensors is already integrated into the software.

This means that the system is fully customisable so to speak and allows all forms of configurations according to date, time, connected periphery, ambient conditions and plausibility routines. External reactions to occurring alarms are controlled through digital outputs.

iGuard®*LE* therefore offers the best possible customisation to your application, both with regard to your various different alarm triggers such as for instance cameras, light barriers etc., and also in case of alarms to control your various external devices such as for instance sirens, alarm systems, lighting etc.. By defining different alarm configurations, you also have the opportunity to adjust the video recording to the actual surveillance task in question and thereby maximise the performance of your system.

In addition, iGuard®*LE* possesses a well-planned user administration. By issuing a total of 10 user authorisations, it allows for each user to have access to certain functions on an individual basis according to his/her range of tasks; such access may also be denied to others. This enables you to make the best possible adjustment to your particular requirements.

Finally, iGuard®*LE* is developed in terms of clarity and comprehensibility of the windows and dialogs. Most buttons are provided with easy to understand symbols that are placed at suitable points within the window. This allows for intuitive operation of the program. However, if questions do arise, the online help is available at any time.

The delivery includes, free of charge, the iGuard® RemoteView and iGuard® Player programs in addition to the iGuard®*LE* program itself. Using iGuard® RemoteView, you have the opportunity to remote access (via LAN or ISDN) the system in order to revise the recorded videos and to watch camera-pictures live. Here iGuard® RemoteView functions as a client accessing iGuard®*LE* as a server. When operating iGuard®*LE* with separate hard discs, iGuard® RemoteView enables you

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to carry out local playback on an external PC. iGuard® Player allows you to replay video recordings or exported AVI sequences.

We would like to wish you every success with this produsee Please do not hesitate to contact us as manufacturer or your individual installer at any time if you have any further questions.

About this manual:
A complete version of this manual can be found in Adobe Acrobat format (PDF) on the iGuard®*LE* CD. This is the most recent version, unless changes have been made after the printing of this manual. All subsequent alterations have been included as far as possible.

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2. Prerequisites

2.1. Operating system

iGuard®*LE* was developed for operation with Microsoft Windows 2000® and Windows XP®. The desktop resolution must be at least 1024x768 pixel with 15/16-bit colour resolution. We recommend a resolution of at least 1280x1024 with 15/16-bit colour resolution.

The additional programs iGuard® RemoteView and iGuard® Player can be operated in Windows 2000® and Windows XP®.
The operating systems Windows 95/98, Windows ME and Windows NT will no longer be supported.

2.2. Hardware

The following video compression boards or framegrabbers are used by IDS Imaging Development Systems GmbH depending on model design:

- FALCONplus with 1 or 2 board operation (4/8 video inputs)
- FALCONquattro (4 video inputs)

The video data is stored on local hard disks. The use of removable hard discs is possible, too. Saving to optical drives such as DVD-RAM, DVD-/+R, DVD-/+RW, CD-R/W is possible direct from iGuard®*LE* with the writer program NERO 6.0 or higher installed (see *3.5.13 Export to CD / DVD*).

FALCON attributes

- The following restrictions apply for the operation of a FALCON:
- Setting the compression factor is possible, though it cannot be met exactly. Fluctuations in image size > 100 % are possible.
- Camera signal failures are detected. A test whether the signal is present again, however, is only carried out for technical reasons on the FALCON cards in conjunction with a camera test. A camera test is carried out every 10 minutes.

2.3. Resolution and file format

The files stored by iGuard®*LE* have the extension .IGD and are compliant to the AVI-fileformat. The resolution of the stored images is 384x288 Pixel by using normal resolution and 768x288 Pixel by using high resolution.

2.4. Conversion

As of version 2.35, iGuard®*LE* automatically converts the configurations of the preceding version to the current version. Nevertheless, we would like to emphasise that you should check your configuration without fail after an update.

NOTE:
A conversion of older versions (earlier than version 2.35) is not possible. It is also not possible to take over settings for ring recordings and scenarios from the preceding versions (earlier than version 2.50). These are deleted during the conversion.

3. iGuard® *LE*

This chapter exclusively describes the start-up and function of iGuard®*LE*. chapter *3.1 Fast start*, is concerned with the start-up of iGuard®*LE*. Important terms and the method of operation are explained in chapter *3.2 Operation*
Chapters 3.3 to 3.5 then deal in detail with the various functions of iGuard®*LE*. Essentially, iGuard®*LE* has three different modes of operation: “display mode”, “configuration mode” and “playback mode”.

Display mode (see chapter *3.3 Display mode*):
After starting iGuard®*LE*, you will be in “display mode”. From here, after successful login to the system, it is possible to access the “configuration-“ and “playback modes”, insofar as you have the appropriate user authorisation to do so. “Display mode” is intended for operating or surveillance staff while the system is in operation. The cameras and all incoming events are displayed and recorded here. It is also used for flexible live surveillance of all cameras.

Configuration mode (see chapter *3.4 Configuration mode*):
All system settings are carried out in this mode. The opportunity exists to issue user authorisations (cf. *3.4.11 User management*). The configuration of the system and the “display mode” as well as the definition of recording modes can be defined here. As recording modes can be chosen

- **longtime recording**
- **event-triggered recording**

This ensures that the system can be flexibly adapted to cover the widest possible range of applications. The definition of the recording (cp. *3.4.6 Configuration of the recording*) should be carried out with all necessary care, as these determine when alarms will be activated and what reactions these should lead to. Access to the “configuration mode” is restricted to users with the „Configuration“ right.

Playback mode (see chapter *3.5 Playback*):
The playback and/or revision of recordings is carried out in this mode. It is based on an extremely high performance database and allows fast and easy tracking of received alarms and their respective video sequences with all relevant additional information. It is also possible to save important pictures in currently used formats or even whole video sequences in AVI files as „evidence “. Access to the “playback mode” is only possible with the „Playback“ user right.

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3.1. Fast start

3.1.1. Licensing

With your user's manual you will find a registration card with your personal licensing number, the product-key. This number forms a part of the license agreement. The product-key is needed to install the drivers for the FALCON card and to install iGuard®*LE*.

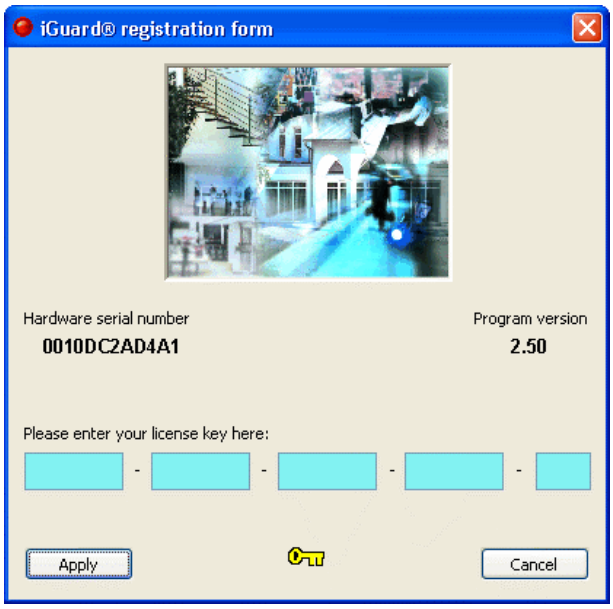

Figure 1: iGuard®LE registration form

NOTE:
Please keep your licensing numbers in a safe place. So that we may keep you informed about further developments and new versions, please send your carefully completed registration card back to the address given on it. You will then be entered into our customer database.

3.1.2. Starting iGuard®LE

The registered version of iGuard®*LE* can be called up via the menu *Start → Program* of Windows or using the link on your desktop which was created during installation.

After iGuard®*LE* is started and you will automatically be in "display mode". This mode is the control center. This is where all cameras are displayed and the output of all alarm and status signals takes place.

Following initial installation and first start, iGuard®*LE* enters all local hard discs on the list of the discs to be used for recording. The partition where the operating system is installed is removed from the list automatically if there is at least one further local partition.

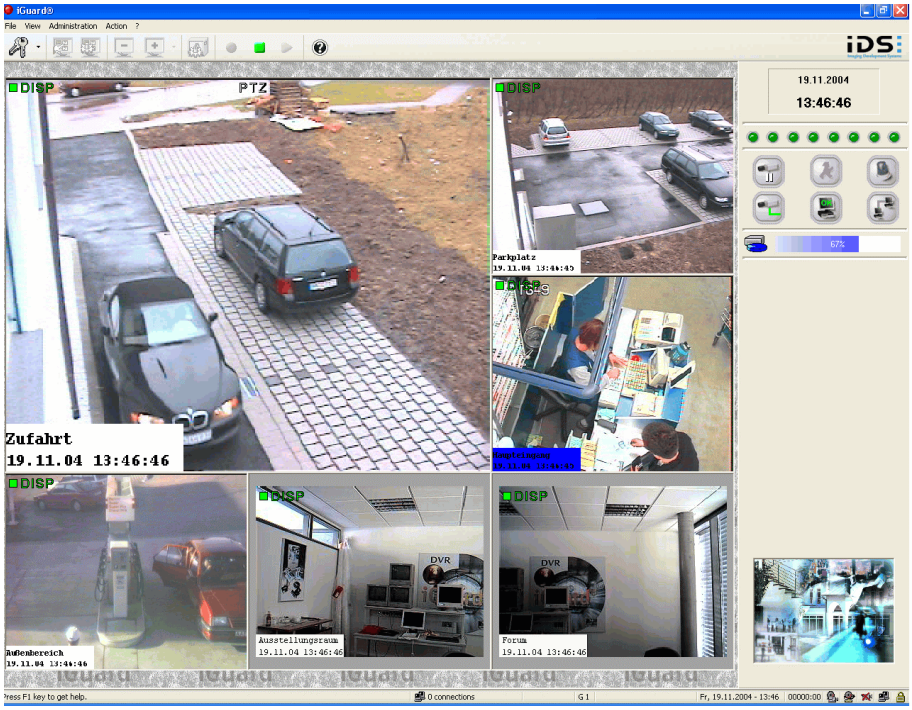

Figure 2: iGuard®LE -Start dialog

When starting iGuard®*LE* for the first time, all cameras found by an automatic check of video inputs should be displayed. If this is not the case, one of the following reasons is possible:

- an error occurred during the installation of the hardware or iGuard®*LE*
- the camera‘s connection to hardware is faulty
- the camera is not sending any signal

In the first case, it is essential that the installation is repeated.

3.1.3. Login

First of all, you must log in. To do this, choose the menu *File → Login* or click on the corresponding button in the symbol bar.
Alternatively, you can use a drop-down menu which can be opened using an arrow symbol to the right of the log-in button to display the user names of the last 5 successful registrations and select a user name. This function is not available during first log-in as the list only shows a history. The list is empty if no-one has registered yet.
This opens the iGuard®*LE* log-in dialogue box where you have to enter user name and password. Entering user name is not required if using the drop-down menu. The password, however, still has to be entered manually.
This function is not available in iGuard® RemoteView.

Thereupon the “Login dialog” box shown below will open, into which you will enter the user name and the password.
When first starting iGuard®*LE*, enter the following name and password:

- User name: Administrator
- Password: Administrator (displayed as ***)

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NOTE:
Please take note of capitalisation.

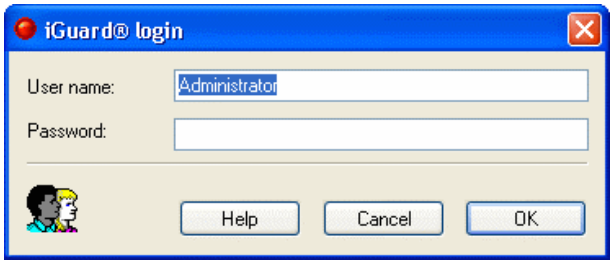

Figure 3: iGuard®LE -Login

We advice to change the administrator‘s password. The user name „Administrator“ cannot be deleted.

The “user manager” needed to alter the password can be found in the “configuration mode”. You can get there by choosing between two ways:

- menu *File → User manager*. Therefore you need the authorisation ”User management”.
- menu *Administration → Configuration*. In “configuration mode” you can get to the “user manager” by. menu *User manager* or via the corresponding button in the symbol bar ( ). Therefore you need the authorisation ”Configuration”.

Then click on the user name and on the button “Modify”. More about the *User management* can be found in corresponding chapter (cp. *3.4.11 User management*).

3.1.4. Initial configuration

First of all, please configure your system. The initial configuration is very important.

Please adapt the configuration to your local conditions. Before starting this it is advisable to write down where the cameras are located and the names/descriptions you want to give your cameras. In addition to this, you should also have noted which cameras have been connected to which physical inputs on the FALCON board. The details can be found on each connecting cable (break-out cable) behind the BNC plug connector.
The configuration data is saved in the file **iGuard.dat**. The file is saved in the working directory and has the file attribute "read-only". It includes all configured settings of the application, the hardware as well as the configuration of the recording. Furthermore the configuration data can be imported and/or exported via the “Import configuration / Export configuration*” buttons* within the *Information* page of the “configuration mode”.
Apart from this all defined users with their user authorisations as well as the validity of their user authorisations are saved within the file **iGuard Users.dat**.

A detailed description of the “configuration mode” can be found in chapter 3.4 *Configuration mode* of this user manual.

3.1.5. iGuard® *LE* as demo version

You can also run iGuard®*LE* without a FALCON board and configure all dialogs. Recording is not possible without the video capture hardware. A special hardware simulation enables you though to test the functional capabilities of iGuard®*LE* despite the lack of hardware.

NOTE:
The license dialogue is always after start in demo-mode. iGuard®*LE* starts in demo-mode if the license dialogue is aborted.

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3.2. Operation

With iGuard®*LE*, it is possible to record video sequences from separate cameras with the help of suitable hardware (e.g. a FALCON board). Signals which are fed into the recording system from outside are used to control the operation of the iGuard®*LE* application during this process.

The following recording modes are available:

- Longtime recording
- Ring recording

All configured cameras operate initially in longtime recording mode and supply live images. Time settings and events assigned to the respective cameras determine whether the cameras are recorded or not.

3.2.1. Longtime recording

Longtime recording is a recording mode where, as with a standard video recorder, videos are saved on the hard disc until this is completely full. After that, the oldest pictures will be overwritten continuously. As an option the recording of only motion pictures can be adjusted. This feature allows to save plenty of hard disc space without losing important video data and/or events.

An event-controlled interruption of long-term recording is available through configuration of recording parameters of the configured cameras (see 3.4.6 *Configuration of the recording*).
If a defined event occurs, long-term recording is interrupted, event-controlled recording is carried out according to configuration and long-term recording re-starts again upon completion.

3.2.2. Ring recording

The configured cameras continue operating in ring recording mode until a configured event occurs. Ring in this case means that the recording is been carried out within a loop, therefore the recorded videos will permanently be overwritten (first in/first out principle). The recording duration is determined by the size of a ring buffer. The oldest pictures will be overwritten at the end of a defined period. Therefore, there are always only as many pictures saved as defined by the size of the ring buffer, irrespective of the period during which the ring recording is active. If no ring recording is to be carried out, this can be set by entering a duration of "0" when defining the duration of the pre-trigger (see 3.4.6 *Configuration of the recording*).

If an alarm occurs, ring recording stops immediately and alarm recording according to configuration is started so that the data recorded before the alarm is attached to the start of the ring recording and saved. So the pictures of the ring recording always show the history of an alarm (pre-trigger).

The ring recording uses a ring buffer for recording the picture data. A file is being created for each camera. A max. of 200 pictures are saved in each file during ring recording.

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3.2.3. Alarm sensor (detector)

An alarm sensor is typically a trigger input of the hardware (FALCON- or optocoupler board). An alarm sensor is being triggered by an external signal on which a record can be started.

Each camera is available as a further alarm detector in conjunction with the motion detection of a camera.

NOTE:
Referring to the configuration, alarm sensors as for example light barriers, or cameras with activated motion detection can also be understood as alarm detectors.

3.2.4. Switch output (actuator)

A switch output is a digital output of the hardware (FALCON- or optocoupler board) which can be used in order to control an external device (e.g. siren, alarm system, door opener, lights).

3.2.5. Motion detection (camera as video sensor)

The last picture of a camera is constantly being compared with the current picture of the same camera. If there is a change in the picture content in a pre-set manner, iGuard®*LE* recognises a movement in the picture. This process is called "Motion Detection" and can be activated for each individual camera.

Motion detection can be used to activate an alarm record and/or record the picture from a camera only if there is a change in the picture's content. In the first case the camera itself is being used as an alarm detector also. Considerably less storage space is required in the case of the latter because only those pictures are saved where there has been a change in the content of the picture.

Parameters for the motion detection have to be adjusted separately for each camera. In addition, it is also possible to define sections of the video picture where motion detection should not or should only be carried out. This enables movements to be ignored, e.g. movement of trees caused by wind and particular attention to be given to areas of special interest.

3.2.6. In the event of an alarm

iGuard®*LE* checks whether there is a recording configuration for a camera for the signalled event. If this is the case, recording is started in accordance with the stored configuration.

- If several events occur at the same time which would result in recording with the same camera, iGuard®*LE* decides on the further procedure according to the stored recording configuration. The following rules apply in this case:
- for recordings in the same recording mode (e.g. motion recordings), current recording continues until all events have been processed;
- long-term recordings are interrupted by a movement or alarm contact;
- motion recordings are interrupted by an alarm contact;

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- alarm recordings with normal priority are interrupted by an alarm contact with raid priority (cp. *3.4.3 Configuration of the alarm sensors (detectors)*).

Recordings are recorded in the log book and stored in a database if the option "log book entry" has been activated (3.4.6 *Configuration of the recording*).

The log book is integrated into the user interface of the replay mode and can be displayed or hidden per option. Only the abbreviated version with the last events to have occurred are shown in display mode. An acoustic alarm can also be sounded parallel to this.

3.2.7. Databases

iGuard®*LE* uses databases in order to save messages and information about the recorded video data.
The dBASE format is being used as database. This format is widespread and suitable for industrial use. The iGuard®*LE* databases that are used have the file ending "VDB" for **V**ideo **Database**.

A second database (message database) is being used in order to save the received messages. When iGuard®*LE* is started, the database is read out and the entries written in the logbook. This ensures the latest messages to be seen after restarting iGuard®*LE*.

It is also possible to use various functions in the databases within the “playback mode” using the menu *Database* or by pressing the right mouse button (see chapter *3.5.14 Processing the database*)

3.2.8. Please-wait-dialog

A progress dialog is automatically displayed (also applies for iGuard® RemoteView!) after a certain time from the start of an action. This shows:

- the expected (= estimated) remaining duration of an action in min. and sec. (with precision to 5 sec.)
- a light to dark progress bar symbol for the previously completed part of the action (relative to the overall process) as well as the corresponding percentage data
- a switch button for aborting the action

The remaining time display always relates to the remaining time for all parallel running activities. Fluctuations in the display are possible because the estimated remaining time is calculated from the already existing elapsed time and the progress achieved within that period of time. The calculated time can vary from the actual time particularly in the case of changing transmission speeds of data transmission (ISDN) connections.

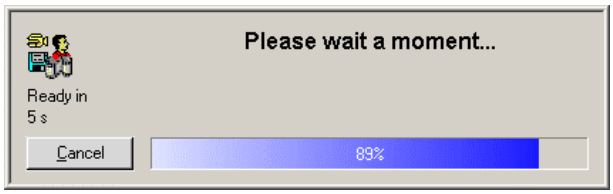

Figure 4: Remaining time display iGuard®LE/iGuard® RemoteView

3.3. Display mode

The display mode represents the start surface of iGuard®*LE*. It is displayed automatically after starting the program and is used simultaneously as surface for live monitoring of camera images.

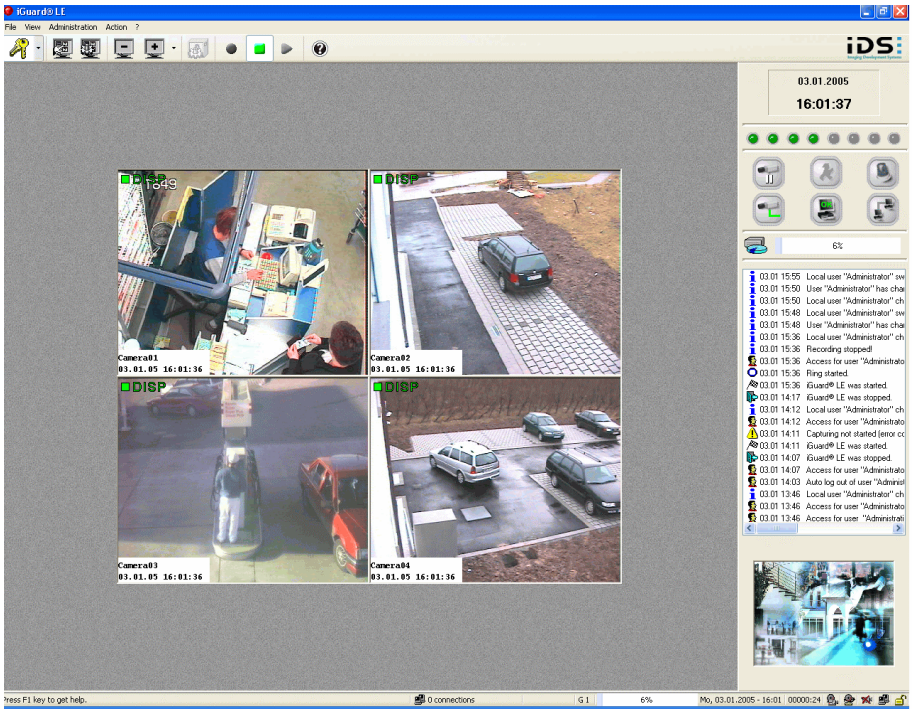

Figure 5: iGuard®LE "displaymode"

The interactive bar at the side can be displayed or not using the *Display View → System information* menu.
The status of all switching outputs is displayed in the interactive bar under the clock with date display (see *3.4.4 Configuration of the switch outputs*).

Figure 6: Status of all switching outputs in "display mode"

Beneath this, there are 6 status displays whose appearance can change depending on the operating state (see *3.3.11 System condition and system informations*). If the mouse indicator rests on a status LED, a popup tool-tip shows the name of the switch output.

Underneath those 6 status symbols, there is a graphic display of the filling level of the recording hard discs. Tool-tips also display further information about the status of the hard discs in this case as well.

If a user is registered with the system, a kind of log book is shown underneath the hard disc display. This provides the user with the possibility of reading the last logbook entries at speed. The extensive (longer) logbook can also be displayed as in the past in the playback level (see *3.5 Playback*).

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The status displays in a dialog bar and the status display in the status line (both can be switched off) at the lower edge of the application are partially redundant and, therefore, displayed twice. On the playback or configuration level, however, the dialog bar is not visible, i.e. in this case the status line represents the only source of information.
It can be activated using the *View → Status line visible* menu.

Figure 7: Symbol bar in "display mode"

"Configuration mode" and "Playback" can be called up from the menu *Administration*. In the display mode, the selection of the playback function is also possible direct by selecting the appropriate button ("Play") in the above displayed toolbar. Likewise, access to user management is also possible using the *File* menu if the registered user has appropriate authorisation.

3.3.1. Login

After starting the program, you first have to authenticate yourself. This can either be done via the menu *File → Login* or directly by selection of the button from the symbol bar. After successful login, you may, according to your user type (which determines the authorisations assigned to you in the "user management", call up or execute all other program dialogs, functions and modes. The two most powerful user types are the „Administrator" and the „Installer". Only the „Administrator" or a user with administrator authorisation has got the possibility of setting all iGuard®*LE* parameters. Thereagainst, the "Installer" has got restricted configuration possibilities.
When first starting iGuard®*LE*, enter the following name and password:

- User name: Administrator
- Password: Administrator (displayed as ***)

NOTE:
Please take note of capitalisation.
Without a successful login only the online help will be available within SISTORE MX Pro; all other functions will not be available. Ending the program via the **menu** *File → End* will also not be possible.

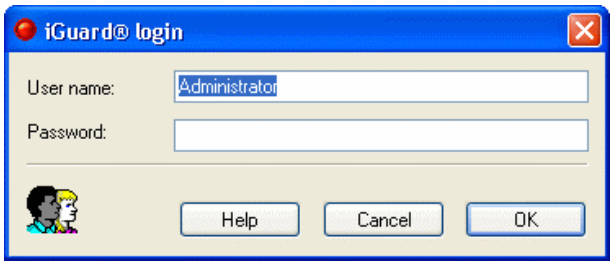

Figure 8: iGuard®LE login

NOTE:
Without a successful login only the online help will be available within iGuard®*LE*; all other functions will not be available. Ending the program via the menu *File → End* will also not be possible.
Installation of Acrobat Reader is necessary for online help.

Every attempt to log into iGuard®*LE* is recorded and can be checked in the log book. The user name and the time of registration is stored. The password is not saved. A record is also made of whether the user obtained access to iGuard®*LE* or not.

3.3.2. Logbook in displaymode

All relevant messages in service like e.g. Alarm messages, start and stop of recordings, user login/logout, malfunctions etc. are protocolled in a logbook. In the displaymode, the logbook is shown in a shortened, non-editable form. The detailed form of the logbook is shown in Playback Mode (see chapter *3.5.1 Logbook*). The log book can be displayed using the *Display View → System information* menu (see *3.3.3 Windows*).

Addition of user comments:
A user can record own comments at any time. These are saved in the log book together with the user's name.
Log book comments can be inserted using the "Action" menu or using the key combination ALT-L. This function is also available in iGuard® RemoteView.

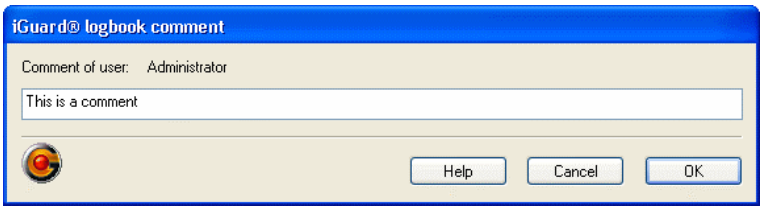

Figure 9: iGuard®LE log book comment

3.3.3. Windows

In “display mode” all camera pictures are each located within one window. Each window has a pre-set size and position. The number of visible camera windows depends on the configuration and the chosen order of the windows. Only those cameras are displayed which have been configured in the “configuration mode” and released for display. The name of the camera, date and time may also be displayed within the camera picture. Position and colour for these text titles can be set in the “configuration mode”.

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Display on/off

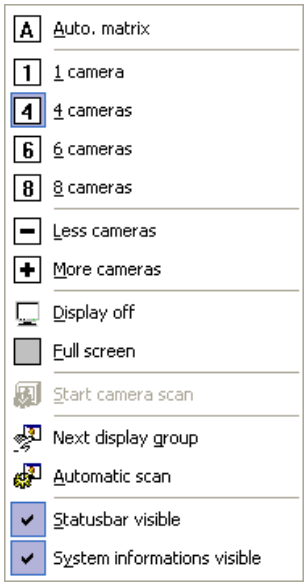

Figure 10: "View"-menu of the "display mode"

Via the menu *View → Display on* in the „display mode" you can turn off the whole display of the camera images, even if a user is logged in.

Full-frame mode

The full-frame mode shows the camera images without status, menu and title bars and can also be activated with CTRL-F as well as by selection in the *View → Full-frame* menu. The full-frame mode can be terminated using the middle mouse button or ESC.
Using the dialog for configuration of the application you can stipulate whether iGuard®*LE* should appear immediately in full-frame mode when starting.
If you move the mouse to the border of the screen a menu bar will appear. You can also leave the full-frame mode with the option "Normal view" in this menu.

Figure 11: Activate border menu

In the Dialog of the configuration of the recording you can define to start iGuard®*LE* in the full-frame mode.

System information

The system information menu with time display, alarm outputs and status reports can be switched off using the "System information visable" dialog.

3.3.4. Screen splits

The camera windows can be displayed equally in a 1-,4-, 6- or 8-split (there are adjustments possible depending on the respective hardware being used). Multiple split display can be set either via the menu *View* and then selected by the corresponding type of split or directly by selecting the “+/-“-button from the symbol bar. Each camera window can be enlarged and displayed centrally. This is done by double clicking the left mouse button within the picture or by clicking the right mouse button for the context-menu (context-menus are always opened by the right mouse-button!). Select “Full Picture”. Return to normal screen is done in the same way. Only one camera window can be displayed in enlarged form at a time.

A camera can easily be displayed in another window: just click the left mouse button on the respective camera picture and drag it to the desired window. When the mouse button is released in the desired output window, the camera picture is displayed in the new window instead of the previous camera picture (i.e. the two camera pictures are interchanged). This allows an easy regrouping of cameras. Several acronyms are displayed in the video frame to identify the mode of operation:

DISP	Camera image is only displayed
DET	Motion detection is activated
REC	Camera is recording

3.3.5. Alarm messages

In the event of an alarm, an alarm text can be specified using recording configuration (cf. *3.4.6 Configuration of the recording*) for each camera and each alarm type (movement, contact with normal priority, contact with raid priority).
This alarm message is displayed on both monitor and replay sides at the bottom edge of the live or replay images.
A user should confirm this message. The message and confirmation are recorded in the log book.
The message disappears if no confirmation is received within 15 minutes. An entry is then made in the log book that the message was not confirmed.
If several messages occur that are not confirmed, only the first message is displayed and registered for each camera.

With alarm messages it is possible to give the user instructions etc. about what further action should be taken by the user in the event of any such alarm.

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Figure 12: Alarm messages in "playback mode"

3.3.6. Output on analogue monitor (appropriate hardware required)

Each camera picture can be manually displayed on an analogue monitor. This can be done by clicking the right mouse button being in the corresponding camera picture and then selecting „Monitor". The automatic output of all camera pictures on analogue monitor can be activated or deactivated via the menu *view → Cameras on monitor*, or by selecting the appropriate button on the symbol bar.
If an alarm occurs where the images of a specific camera are to be switched to the monitor in compliance with configuration (see *3.4.6 Configuration of the recording*), that camera has priority over manual selection. Automatic run-through is interrupted for the duration of event.

3.3.7. Camera groups

If more cameras are released for display than can be displayed simultaneously in a multiple split screen, all cameras are divided into groups. iGuard®*LE* defines these groups independently. The first n camera windows are located in Group 1, the last camera windows to be displayed are in the last group. The groups may be switched through either manually or in an automatic sequence. The groups are shown in order, with the first group being shown again after the last group. The selection of either manual or automatic switching through is carried out via the menu *View → Next Display Group* or *Automatic Scan*, or directly by selecting the appropriate button in the symbol bar. During the enlarged display of a window, switching through camera groups is not possible.

3.3.8. Starting and stopping recording

Starting and stopping of the recording is carried out either via the menu *Action → Start/Stop Recording* or directly by selecting the appropriate button (Rec/Stop) from the symbol bar. The recording action is identified by „REC" in the picture of

the camera in question. If cameras are not recording but are nonetheless displayed, this is indicated by „DISP“ within the picture. When a camera is defined as video sensor (motion detector), movement is displayed by „DET“ in the picture of the camera in question.

Displaying the camera condition as a symbol or as text must be activated in the configuration mode in the “system” tab.

3.3.9. Manually operated recording

Cameras can be switched by the user from live image to record mode using the camera context menu. To do so, the user requires "Start/Stop" authorisation.

Manual triggering uses the same settings for recording as set for motion recording. If no motion recording is installed, the camera records for 10 seconds at the max. frame rate.

Figure 13: Manually operated recording via context menu

3.3.10. New password

In the menu *File → New Password*, you have the opportunity to change your password but you need the authorisation to do so granted by the administrator or user with administrator rights. Once this is the case, the dialog box „New Password“ will be reached. In order to change the password, first enter the old password and than enter the new one into the field below.
This then only needs to be confirmed in the field „Confirmation“ and the dialog can then be ended by pressing OK .

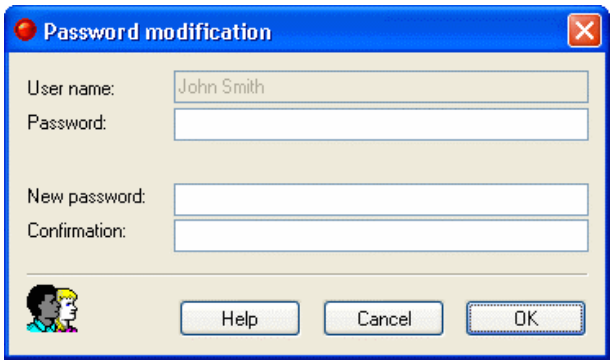

Figure 14: Password modification

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3.3.11. System condition and system informations

- No recording at the moment
- Min. one camera is recording
- No movement
- Movement detected
- No alarm
- Alarm
- Camera connection ok
- Camera breakdown
- System condition ok
- System error
- No active connection to an iGuard®*LE* client
- Connection to an iGuard®*LE* client is online

Shows the actual system date and time. These data is stored in the database together with the video- and audio records.

Status indication of the digital switch outputs

A status display is entered for each switch output (8 x) at the monitor level. Form and colour of the display have a special meaning:

Grey (3rd from left):	switch output not configured, not being used
Green:	switch output inactive
Red:	switch output active
Green/Red surrounded by a rectangular field (4th from left):	This switch output can be activated or deactivated by the user manually. The colour of the display (red, green) shows the active/non-active status.

If the mouse indicator rests on a status LED, a popup tool-tip shows the name of the switch output.

This display shows the free harddisk capacity, reserved for video- and audio data.

3.3.12. Status bar

Figure 15: Status bar

At the bottom of the screen you will find a status bar. You can switch this on or off with the help of the menu *View → Status bar*.

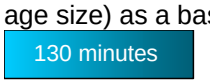
The status bar is divided into 11 fields. The meaning of the fields from left to right is as following:

- Brief help text to the menus (Windows-standard)
- Messages of the application (instructions, errors)
- Currently displayed camera group
- Free storage space of drive(s) being used and the minimum required free space (see below in this chapter)
- Date and time
- Application running time in hours and minutes
- Symbol showing whether a camera has detected a motion
- Symbol showing whether iGuard®*LE* is currently recording an alarm
- Symbol showing an activity or a fault in hardware
- Symbol showing there is an active connection with a remote playback PC
- Login/logout symbol showing the user status

The available disk capacity is shown in four stages in the status line, 2 of these are shown as a graph display.

Stage 1: The disc capacity which is already occupied is shown as a percentage in the form of a blue bar.

Stage 2: As stage 1, but showing the estimated remaining recording time. This is an estimate because the system does not display the actual remaining recording time but, instead, measures the data volume that can still be saved and displays it as an estimated available remaining recording time. The system uses the actual settings (frame rate, image size) as a basis for this estimate.



Stage 3: Shows in text form the designation of the hard disc where current recording is taking place, the disc's available capacity and its maximum capacity.

Stage 4: Shows in text form the available capacity and the maximum capacity of all hard discs authorised for recording.

The display form set last is stored and used automatically again when iGuard®*LE* is restarted. This does not apply to iGuard® RemoteView.

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3.4. Configuration mode

In the “configuration mode”, you can setup the display, functionality and operation of the application. Furthermore, this is where the hardware and event configuration takes place specifying the complete process for the recording and reaction to occurring alarms. In addition, all users to work with the system can be setup within the “configuration mode” with their individual authorisations and passwords. The configuration mode can be called up in the menu *Administration → Configuration*.

Change to the “configuration mode” is possible if the recorder is set to “stop”. In this case no surveillance takes place. The images are only shown on the monitor. For surveillance the recorder must be set to “rec”.

The modal Configuration dialog (sheet), which can be called up in the menu *Administration → Configuration,* consists of different „pages“. The page turning is done by „tabs“. The number of pages to be seen depends on the authorisations of the logged on user and the hardware upgrading of the system.

NOTE:
The parameters and their effects on iGuard®*LE* are described as follows. The description bases on the assumption of a user with administrator authorisation. The number of visible configuration points depends on the issued authorisation rights.

3.4.1. System configuration

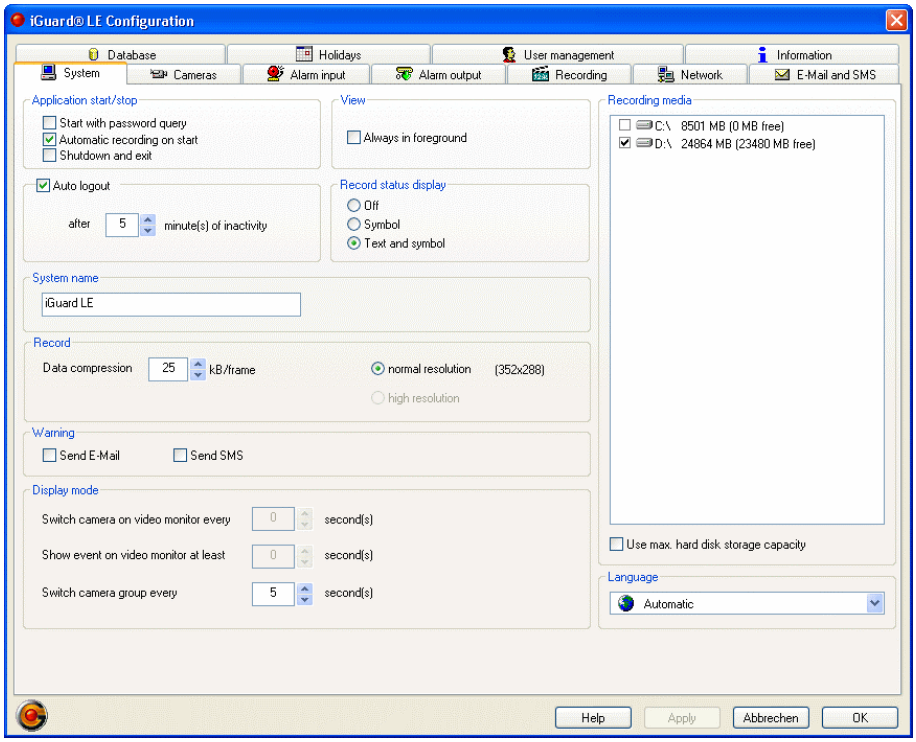

Figure 16: System configuration

View

- Always in foreground
  Selecting „iGuard always in foreground“ has the effect that the application will always be displayed in the foreground and cannot be overlaid by any other Windows application program, unless this has also been configured in similar fashion. This function is only available after re-starting iGuard®*LE*.

Extended log book entries

If extended entries are activated, an entry is made in the log book when printing and storing individual images or when exporting sequences.

Recording media

This is used to specify the disc drives where video data is to be recorded. iGuard®*LE* supports both recording on separate hard discs as well as hard disc partitions. We recommend, however, a physical separation of the operating system and the application from the recorded video data, i.e. the recording on physically separated hard discs. The directory structure and datafile names are pre-set and cannot be

Use hard-disc capacity to maximum

In order to ensure the stability of the system, 15 % of the hard-disc capacity is reserved for the resources required by the operating system.
This restriction can be deactivated to allow the hard-disc capacity to be used to its maximum. This, however, can result in the system becoming unstable and unus-

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able. This option is not set as standard in the case of new installations. If updating an older installation, this option is activated following the update and has to be de-activated by the user.

NOTE:
We do not recommend activating this option.

Application start/stop

- Start with password query
  It is possible, in this dialog field, to stipulate whether authorisation of the users is or is not required to start the program.
- Automatic recording on start
  In addition, the option exists within this selection to define whether iGuard®*LE* should begin ring recording immediately after starting or whether recording of the camera pictures has to be started manually. Manual control is carried out in "display mode" via the corresponding buttons, „Rec" or „Stop", on the symbol bar or via the menu *Action → Start/Stop Recording*.
- Shutdown and exit
  iGuard®*LE* shuts the operating system down when the application is terminated if this option has been marked.

Auto Logout

In this field it is possible to set whether an automatic logout should occur due to a long period of inactivity by the user. If this is to happen, the corresponding control box must be activated. The period of time after this logout is to occur must also be set.
An imminent auto-logout is indicated for about 1 minute by a flashing lock symbol in the status bar.
If a user action takes place during this period, the auto logout is extended and the symbol does not flash anymore.

NOTE:
If iGuard®*LE* currently is operated in the "playback mode" the auto logout function is active, the "playback" then will be ended and you will be logged out because of inactivity. There will be no auto logout when you currently operate iGuard®*LE* in the "configuration mode".

System Name

A name has to be entered here. The system name is primarily used for identifying the system if using remote access. For example, you can enter the location of the system here.

Record status display

With the „Record status display" option you may achieve a symbol and text overlay into the live image (DISP, REC, DET, PTZ) .

Storage requirement (compression)
Within iGuard®*LE* you have the possibility to set the storage requirements for three separate resolutions. This is done In the „Storage requirement“ field (compression)“. The data compression size is, at the same time, a measure for the image quality. The greater the compression (small number) the poorer the picture quality.

The definition of the storage requirement per image has to be accurately considered, because the two most important criterions – resolution/compression of the images and the existing hard disc capacity – should be optimised.

Compression settings can be carried out step-free in Kbytes stages.
Image size and resolution (pixel) are in direct linear relationship to each other. This is why the compression stage always shows a value that is dependent on the selected resolution.

Warnings
- E-Mail/SMS
  With „Send E-Mail“ and/or „Send SMS“ you can have sent an e-mail or SMS in case of a fault (e.g. camera missing). The respective sending function must be set, of course (see *3.4.8 Configuration of E-Mail, SMS* messages).

NOTE:
Warnings will only be sent to a main user..

Display Mode
If you have also connected an analogue video monitor parallel to the VGA monitor (also FALCONplus Rev. 5.0 or later and FALCONquattro Rev. 2.1 or later) it is only possible to display one camera on this at a time. In the field “Switch camera on video monitor every … second(s)” the time interval after which the system will switch to the next camera can be entered. A camera will only be displayed if it is activated in the *Configuration of the cameras* (cp. *3.4.2 Configuration of the cameras*).

In the field “Show motion on video monitor at least” you can determine how long the images will be shown on the monitor, if a motion is detected.

A *camera group* is a group of cameras which can be displayed simultaneously on the VGA screen. A quad-split display, for example, shows four cameras. If, however, a total of 10 cameras are connected, there are three camera groups whereby the last group contains only two cameras. These three camera groups are displayed in series when you have activated the automatic camera group change within the “display mode”. Enter the required group change interval time in the field “Switch camera group every … second(s)”. The switching times for the settings mentioned can be set to between 1 and 600 seconds.

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Language
This is where you stipulate the language in which iGuard®*LE* is to operate. iGuard®*LE* finds all installed languages and lists them in a combobox. Other languages can be installed at any time. You can now select a specific language or – as before – use the automatic language selection. If using the automatic language selection option, iGuard®*LE* starts in the language specified as local language. The automatic option usually provides the best results and that is why it is also set as default.

If you are going to use a different language to the one defined in the operating system, make sure that the standard dialogs (e.g. *File → Open, File → Save*) or standard interfaces ("Help", "Abort", "OK") still appear in the language which is set in the operating system. The reason for this is that these elements or dialogs are displayed by the operating system itself, i.e. they cannot be influenced by iGuard®*LE*.

3.4.2. Configuration of the cameras

This dialog represents the link between the physical camera input and a name used within iGuard®*LE*. During the operation of iGuard®*LE* only the camera name is used (typically a description of the installation place of the camera).

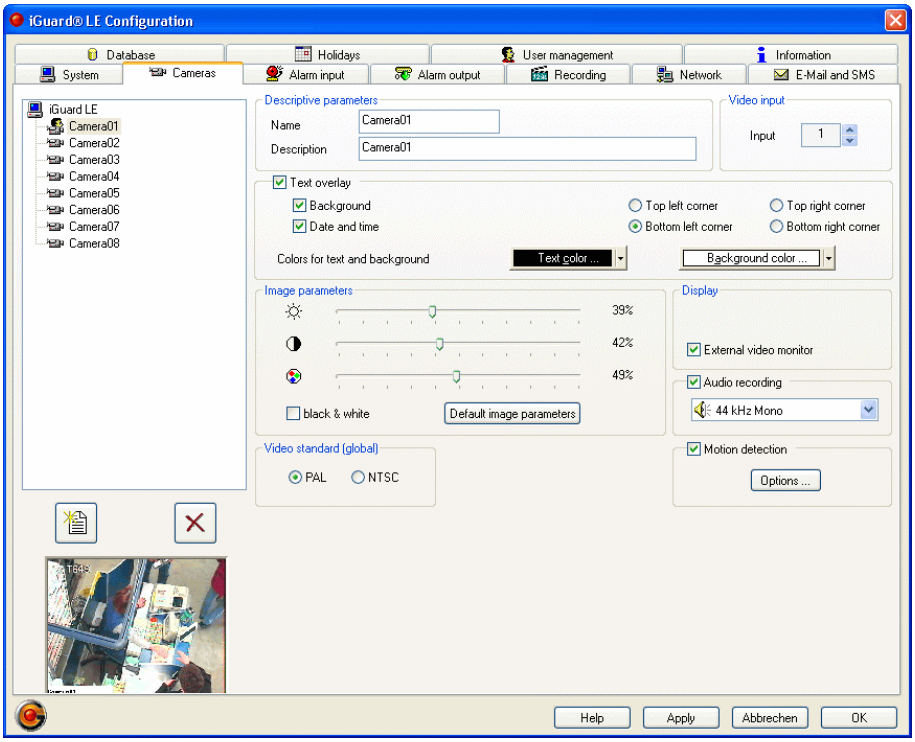

Figure 17: Configuration of the cameras

Descriptive Parameters

- Name
  A name for the camera can be entered here. A maximum length of 16 characters is permitted. The name is being used both in the tree structure as well as being displayed in the camera picture. A precondition for its display in the respective camera picture is that the function has been enabled in the field "Text overlay".
- Description
  It may be desirable to save additional information besides the camera name. For this purpose, up to 64 characters can be entered in the input field "Description". This additional information only serves for a more detailed description and for documentation. It is only displayed in the camera selection list in iGuard® RemoteView.

Video input

Selection of the physical video input where the respective camera is connected to the FALCON board being used. These are marked accordingly on the supplied connecting cable. The FALCONplus has 4 BNC sockets, the FALCONquattro up to 16 BNC sockets.

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Text overlay
This is where you can define whether the camera name and the time and date are to be displayed in the video image. The colour of the text background as well as the text for each connected camera can also be changed. The default setting is black lettering on a white background. The text is either displayed in one of the four corners of the screen. We recommend to put the text field of each camera image into the same corner, providing no decisive details then would be concealed.

Image parameters
These settings can be set separately for each camera. Settings for image brightness, contrast and colour saturation are possible. The colour saturation is only advisable in combination with connected colour cameras.
Select "Standard image parameters" to re-set the selected camera to standard settings.

NOTE:
If b/w cameras are connected, you have to activate the "black & white" control box! The value for colour saturation is then set to 0 and the regulator can no longer be moved. As with the other image parameters, this control box can also be activated separately for each camera.

The aforementioned settings can also be carried out using a context menu on the monitor level. This is reached by clicking on the image of the required camera with the right mouse button. Via the menu *Settings → Image Parameters*, the corresponding dialog opens up.

Display
Here you can define for each camera if it is to be displayed on an analogue video monitor and/or on the VGA monitor depending on the user level. In some cases it may be desirable that the camera pictures being recorded cannot be viewed by the operators. For instance, if the cameras are used to record thefts committed by the staff. The pictures of cameras used for such purposes are recorded, but are usually not displayed on a monitor.

Audio recording (single channel)
A preconditon for an audio recording is a compatible sound card incl. correctly intalled drivers. iGuard®*LE* does not install any drivers for any sound cards. The iGuard®*LE* CD does not include any drivers either. The audo section of our FALCON cards cannot be used. The sound card must support the selected sampling rate. The audio mixer must be set correctly via the operating system so that the recording functions (recording level, selection of the correct input, e.g. line in or microphone in).

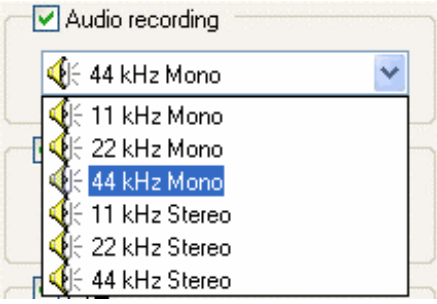

Figure 18: Audio recording settings

Supported functions:

- Recording in mono and stereo with different sampling rates
- Synchronous playing with local playback (server or iGuard® RemoteView)
- Setting playback volume

Video mode (global)

The choice of video mode (PAL or NTSC) is carried out globally for all cameras. It is not possible to use a mixture of PAL and NTSC cameras. Settings are carried out during configuration of the camera.

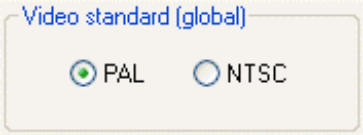

Figure 19: Choice of the video mode (global)

Motion detection

This is where you can activate or deactivate a motion detection on each camera (using the camera as a video sensor). A camera that has been activated as a video sensor camera is being marked with the symbol shown above within the tree structure of the system configuration. If you have activated motion detection, press the "Options" button to reach the “configuration menu” for motion detection.

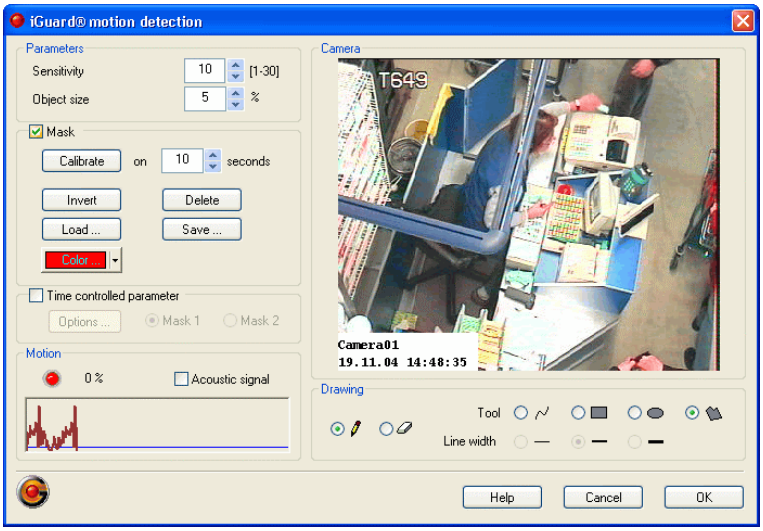

Figure 20: Configuration dialog for the motion detection

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- Parameters
  Define motion detection using the input fields "Sensitivity" and "Object size". Object size refers to the percentage size in relationship to the overall image or the stipulated mask (image section).
  The system reacts more sensitively to movements the lower the treshold of the sensitivity and the lower the choice of object size.
- Mask
  In the field “mask”, select
  - if the motion detection should only be carried out within a defined mask the way that certain areas of the picture are to be excluded
  - or if the motion detection is to be carried out throughout the whole picture

  After enabling the use of a mask, you can generate masks both manually and automatically. Call up automatic mask generation using the "Calibrate" button. Enter the number of seconds the calibration shall take. Selecting automatic mask generation deletes the previously defined mask. For this reason, please remember to save masks if they are going to be needed for later use. Saving, loading and manually deleting masks is carried out using the appropriate buttons in the field “Mask”.

  With the "Invert" button, you can invert the function of previously defined masks (areas which had previously been excluded from motion detection are now relevant for motion detection while formerly relevant areas are now excluded from motion detection).

  Defined masks are not displayed in the camera pictures in “display mode”. The mask is only displayed in this dialog, otherwise it is not visible.
- Time control parameters
  Switching over between two motion parameter datasets (mask, sensitivity, object size) is possible (e.g. day/night, weekend operation) using a time switch. All the blue marked areas in the "Time switch" dialog relate to configuration "Mask 1" and all white marked areas to "Mask 2". "Mask 1" is used if no time switch has been activated.

  The dialog for setting time control can be reached through the "Options" button.

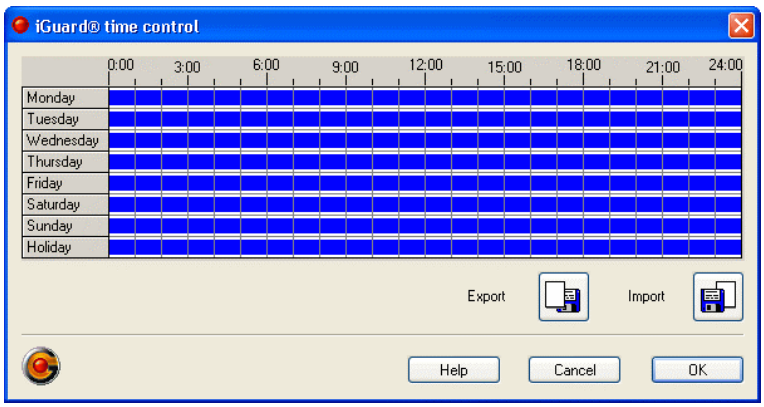

Figure 21: Time control (configuration of the cameras)

You can activate each camera by stipulating a time control within specific time periods.
Use the left mouse button to set active moments in time (blue) and the right mouse button to delete them (white). You can also press the mouse button and

drag them with the mouse. Double click the left mouse button in a field to mark the complete field and use the right mouse button to delete the marking of the complete field again. A field covers a period of 1 hour and is divided into 4 parts of 15 minutes.This means that only time steps of 15 minutes are possible.
Click a day of the week with the left or right mouse button to process the complete day. Click the field above a day of the week to set or delete all entries.
Click the column at the top to set the complete hour on all days active/inactive.

Via corresponding buttons there's an export/import possibility for the time control

- Motion
  The field "Motion" assists you with the calibration of the video sensor. A detected movement is displayed by a red LED. An acoustic signal can also be activated in addition to the display. Furthermore a small diagram showing the number of pixels (in percent) over the time that have been changed. A horizontal blue line marks the threshold value of the set object size. This analogue display allows easy assessment of the action of the video sensor system (movement, object size, time).
- Drawing
  The field "Drawing" is used for selecting tools for the above mentioned manual mask definitions. After setting the "Mask" flag, you can generate a mask with the help of a pen and the definition of different forms (the free-hand line, rectangle, ellipse and polygon).
  Areas can be "erased" manually using the rubber. The strength of the line can also be varied if using the free-hand line.
  After having made all options return to the camera definition using the OK or Cancel button.

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3.4.3. Configuration of the alarm sensors (detectors)

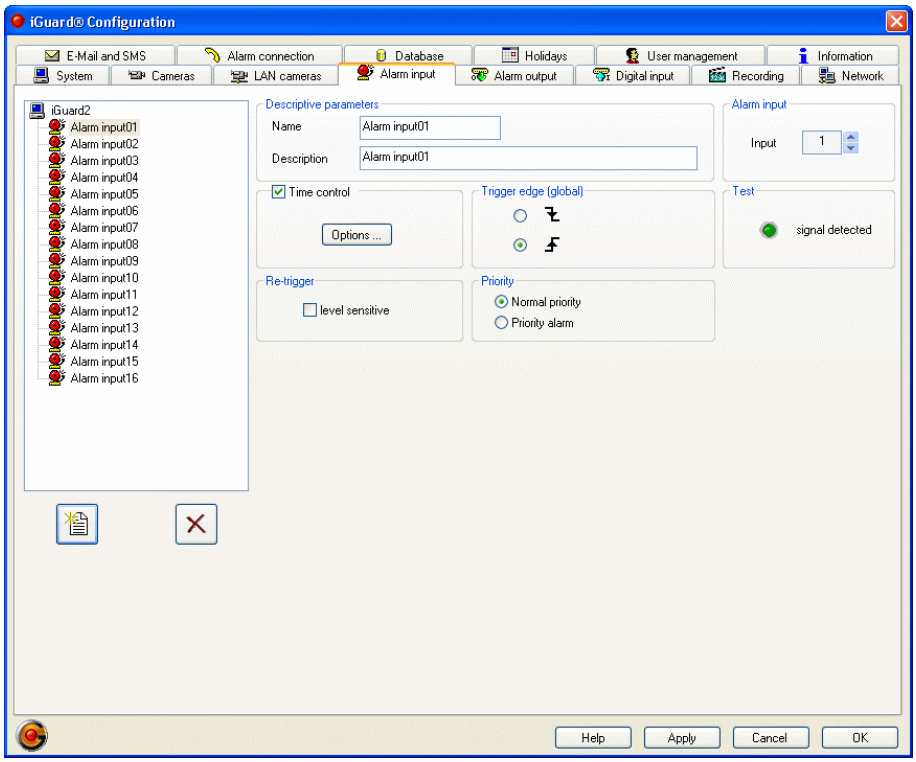

Figure 22: Configuration of the alarm sensors (detectors)

Descriptive parameters

- Name
  This is where you can enter a name for the alarm sensor. A maximum of 16 characters can be entered. This will appear then on the left hand side in the tree-structure.
- Description
  It may be desirable to save additional information to just the alarm sensor names. A total of 64 characters are available for this in the provided input field "Description".

Alarm Input

In this field, you assign a chosen alarm sensor to an actual existing physical trigger input on the FALCON board. The FALCONplus has 4 alarm inputs and the FALCONquattro has 4 alarm inputs.

Time control

It is possible to activate the alarm sensors within specific time periods by a time plan. Once you have activated the time control, click the "Options" button to enter the “configuration menu” for the time control.

The active and inactive period is entered using the mouse.

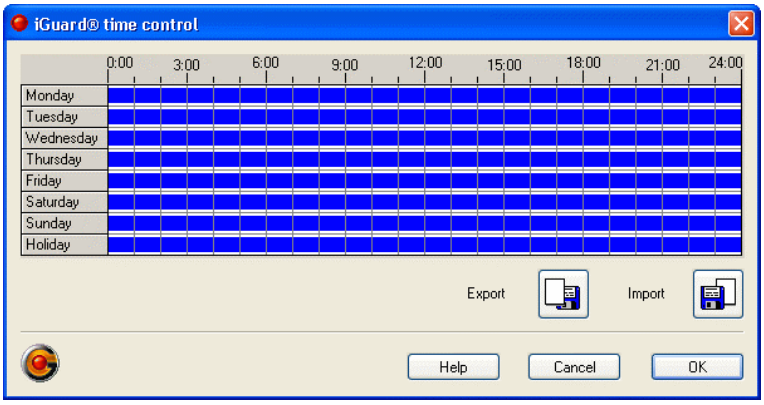

Figure 23: Time control (configuration of the alarm inputs)

Exporting and importing is possible. You can open the dialog for editing holidays using the button on the right.

Switching edge (global)
The switching edge set here for the trigger inputs (alarm sensors) is valid for all connected alarm sensors and can consequently be changed globally. The switch edge defines whether the alarm is normally loaded with a voltage signal and drops to 0 volt in the event of an alarm (high → low) or vice versa (low → high).
Here we recommend to look up information concerning the connections of the respective hardware in the corresponding chapters of the installation manual.

Test
In the „Test“ field it is possible to check whether the alarm source has been properly connected and is functioning. In the case of an alarm being triggered the little light will light up green for a brief period. This function is suitable for test purposes or when connecting a new alarm source.

Re-Trigger level sensitive
If a signal alarm is to be retained, the re-trigger of the alarm recording configuration can be set to "level control" (= active / non-active). In this case, recording is continued for as long as the level of the alarm is active. This function can be activated in particular with make and break contacts (NO and NC contacts) as well as limit switches because with these alarms recording is not only required to be "triggered" at a flank but also during a situation (level).

Priority
An alarm sensor can either be assigned normal or high priority (raid priority). Different recording parameters are available for recording configuration for each of the two priority levels (cp. *3.4.6 Configuration of the recording*).
An alarm with raid priority ends current recording of an alarm with standard priority immediately. Motion recordings are also interrupted immediately. The alarm with raid priority, however, cannot be interrupted by a standard priority alarm or a motion.

NOTE:
It is not possible to timecontrol alarm sensors with priority alarm.

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3.4.4. Configuration of the switch outputs

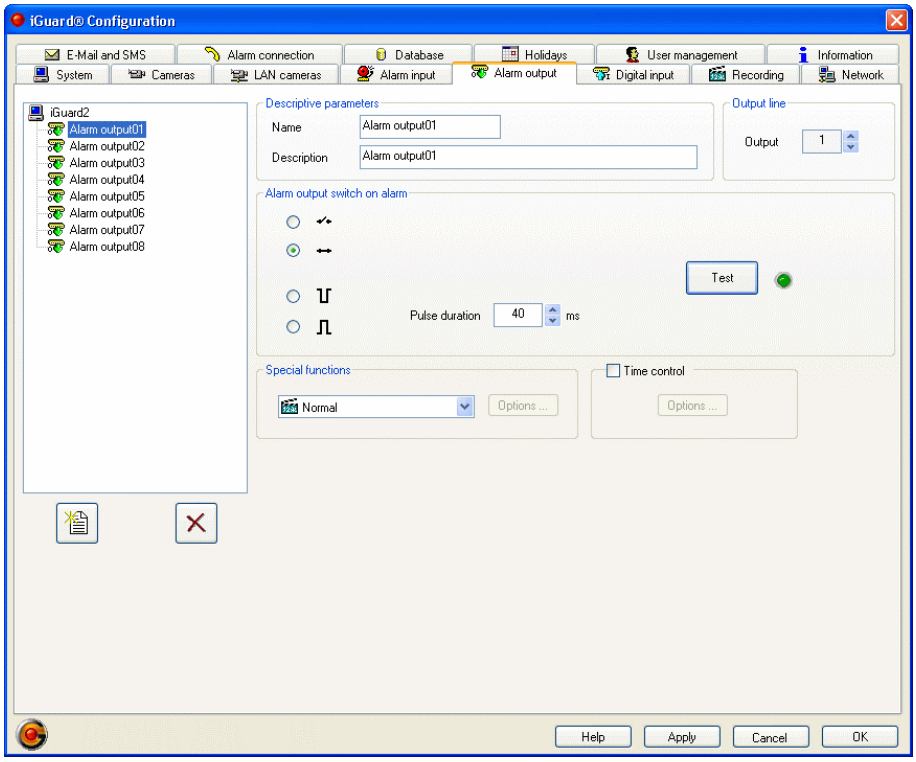

Figure 24: Configuration of the switch outputs

Descriptive Parameters

- Name
  This is where you can enter a name for the alarm sensor. A maximum of 16 characters can be entered. This will appear then on the left hand side in the tree-structure.
- Description
  It may be desirable to save additional information to just the switch output names. A total of 64 characters are available for this in the provided input field "Description".

Switch output

Use this field to assign a chosen switch output to an actual existing physical digital output on the FALCON board. There are 8 switch outputs available.

Alarm output switch on alarm

Here, you can allocate each switch contact with instructions on how to react in the event of activation. The following options are available:

- open switch
- close switch
- switch pulse negativ
- switch pulse positiv

It is possible to specify pulse duration using the "Pulse duration" field for the outputs that supply a switch pulse.

The option “Test“ enables you to test the functionality of the configured settings in case of an alarm.

Special functions

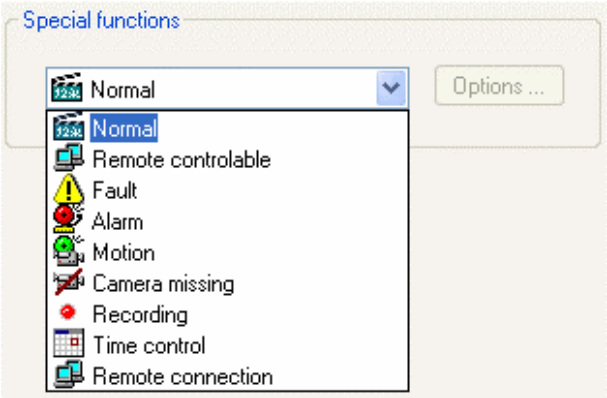

Figure 25: Configuration switch outputs special functions

- Normal
  "Normal/Standard" means event-related. The switch output is used for recording and does not have any special function.
- Remote control
  The switch output is activated by event control.
  If you have "Remote control" authorisation, you can activate appropriately configured switch outputs using the interactive bar in display mode.
  This shows a list of all switch outputs (see *3.3 Display mode*). Switch outputs which can be remote-controlled are highlighted with a grey surround.

Figure 26: Status indication of the switch outputs

  This bar is also visible in iGuard® RemoteView.

  Switch outputs configured with "Pulse positive/ negative" cannot be deactivated as the pulse length was stipulated during configuration and should not be changed manually.
- Error
  The switch output is activated in the event of a fault.
- Alarm
  The switch output is activated as long as an alarm recording is being processed.
- Motion
  The switch output is activated as soon as a camera has detected a movement. It remains active for 1 second. If, within this second, it detects another movement the activation period of the switch output is extended accordingly.
  Camera missing
  The switch output is activated if at least 1 camera signal has failed.
- Recording
  The switch output is switched on and off periodically whilst the recording is running.

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- Time control
  The time control functions like a time switch. You prescribe a time plan analogue to the *Time control* known from the camera configuration and the alarm input configuration (cp *3.4.2 Configuration of the cameras*). The switch output is activated during active phases (colour blue), otherwise it is deactivated (colour white).

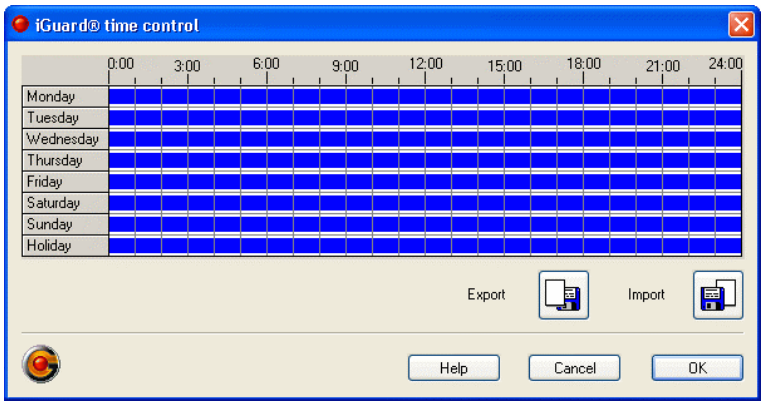

Figure 27: Time control of a switch output

- Remote-connection
  With this special function, the switch output is activated as soon as at least one connection exists to an iGuard® RemoteView client.

A switch output with a special function is no longer available for the configuration of the recording (cp. *3.4.6 Configuration of the recording*).

3.4.5. Watchdog

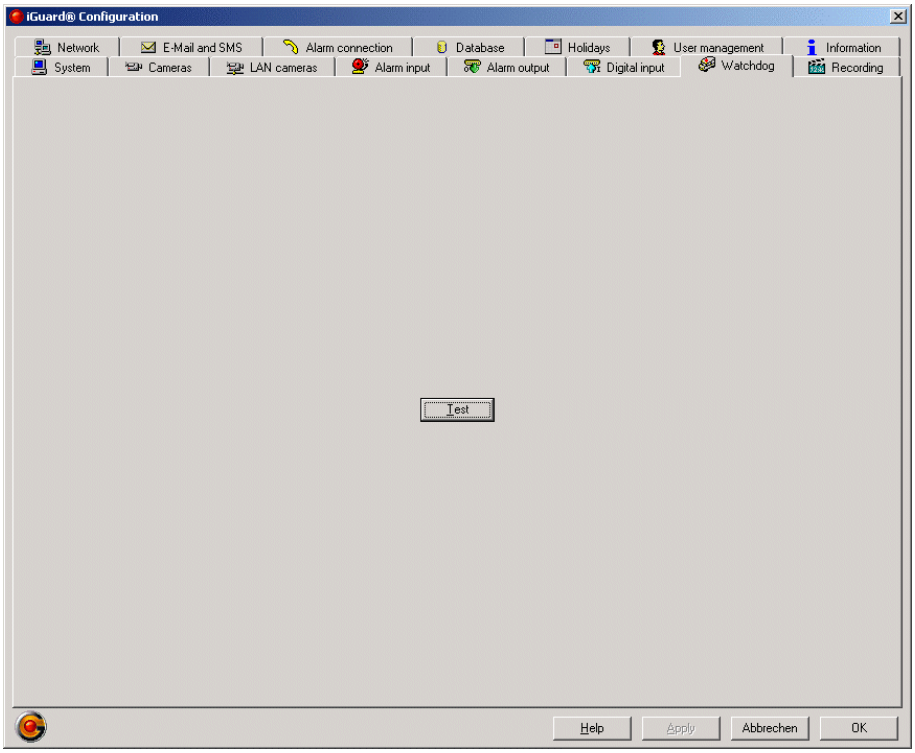

Figure 28: Configuration of the watchdog

This page is only available when a hardware watchdog exists. Here it is possible to test its correct function.

The folowing framegrabber of the IDS Imaging Development Systems GmbH are featured with a hardware watchdog:

- FalconPlus ab Rev. 5.0
- FalconQuattro ab Rev. 2.0

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3.4.6. Configuration of the recording

This configuration is used to stipulate the recording mode with which the system should operate.
All configured cameras are always "in the ring" and provide live images. Whether the cameras record or not is determined by time settings and events. Fundamentally two different recording modes are available:

Longtime recording
With this operating mode, the set lead time does not apply for alarm events (movement, contacts with normal or raid priority). This means that continuous recording (long-term) takes place during periods for example where long-term recording and alarm sensor are active.

Within the configuration you decide which cameras shall be recorded, the priority with which this is to happen, and the resolution of the recording. The length of the recording is in principle determined only by the amount of memory on the disc available.

If an alarm has been activated, the alarm is processed; the recording before the alarm, however, is not shortened to the pre-alarm duration. Longtime recording is then started again.

Event-triggered recording
In this operation mode in which the system records according to previously defined events. The triggers for such events could be for instance previously configured alarm sensors and/or the video sensors (cameras with enabled motion detection).

It is possible to combine both recording modes, i.e. when choosing longtime recording one or more event-triggered recordings may be defined. This is done on the “Alarm recording” page. Longtime recording is then interrupted for the duration of the event which has occurred.

In the case of event-triggered recording, you will also have to define the duration of a recording ring within the configuration. If the recording duration of ring recording is set to 0, recording only takes place in the event of an alarm. There is then no possibility of investigating the pre-history of an alarm.

An event is always triggered by at least one alarm input. As long as no alarm occurs, the system is operating in ring recording. If an alarm occurs, the ring recording is aborted and the appropriate alarm recording is started. A new ring recording is started at the end of the alarm recording. In cases where longtime recording has been selected, the recording continues at the point where the system has quit the longtime recording after the recording of an alarm has been terminated.

The "Recording" dialogue consists of 3 areas. On the left side is a list of all configured cameras. On the right is a graphic element for setting daytime-related functions and below this there are fields and controls for defining behaviour upon occurrence of specific events. Differentiation is made between the following operating states:

- No alarm, long-term recording, colour blue
- Movement, colour green
- Contact with normal priority, colour light red
- Contact with raid priority, no colour, always active, no possibility of installing time control

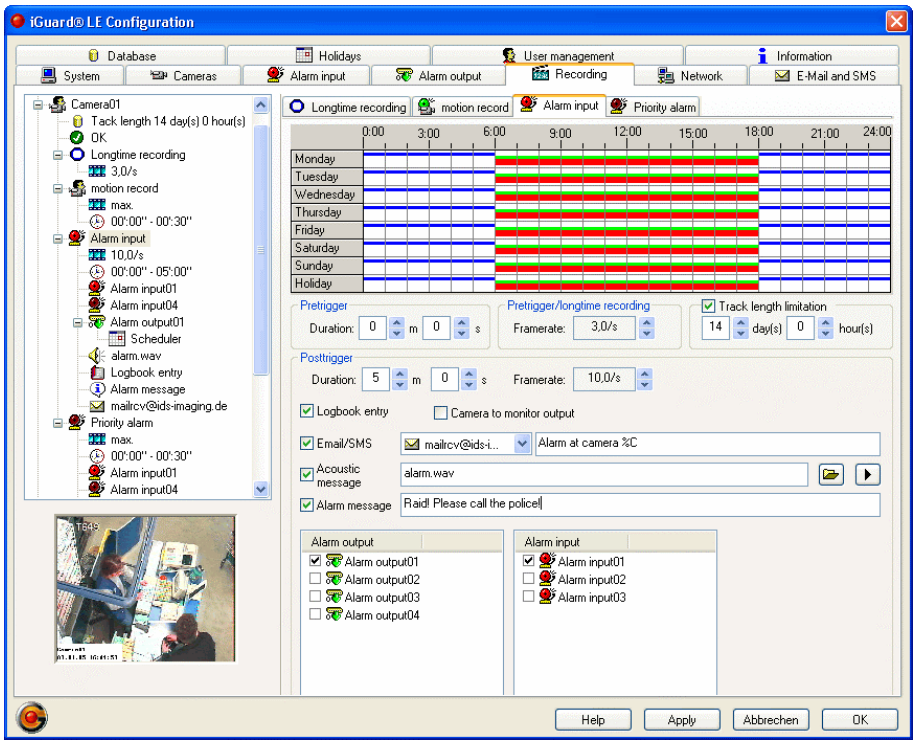

Figure 29: Configuration of the recording

The selected status (tabulator) is shown in the time graphic chart by a thick bar. Use the left mouse button to add active areas to the time chart and the right mouse button to remove them.

Statuses are not always visible. Visibility is subject to the following rules:

- "Long-term recording" is always visible.
- "Movement recording" is only visible if the camera is configured as motion detector.
- "Alarm sensor" is only visible if there is at least one alarm sensor with normal (standard) priority.
- "Raid" is only visible if there is at least one alarm sensor with raid priority.

Pre-alarm duration, post-alarm duration and post-alarm frame rate.
These parameters can be set separately for each status.

- Pre-alarm duration
  The setting for the pre-trigger times of the camera can be varied. The variable range of the pre-trigger duration is 10 seconds up to 360 minutes (max. 6 hours). 0 seconds means: The function is inactive, the pre-trigger is not being used.
- Post-alarm duration
  The post-trigger duration can be set between 1 second and 360 minutes (max. 6 hours). So, when a detected movement took place, the camera switches over to

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continuous recording for the set time (seconds, but at least 10 pictures) taking into account switching over by other cameras.
This means that the recorded frame rate will be set to the max. rate (according to the selected adjustment) for a defined period. If a camera detects a further movement during the post-alarm duration, the post-alarm duration is extended by the set time from the moment when the new movement occurred.

Pre-alarm/long-term recording frame rate
The frame rate for pre-alarm/long-term recording is a setting valid for all statuses.

There is the possibility of setting the required frame rate direct for each camera (in predefined, rational stages) and selecting different frame rates for pre-alarm and post-alarm. The system calculates internally the max. possible frame rate to be expected (depending on the hardware and hardware configuration) and issues a warning if the required frame rate is more than 25 % above the calculated frame rate (i.e. the one that can be achieved during operation).
Put another way: A frame rate can be specified for a camera but may not be achieved in all situations during operation.
The system attempts to bring the performance offered by the hardware as close as possible to the pre-set requirement (default). This is not always possible. Above all when different frame rates are set for different statuses it is possible for different frame rates to occur during operation - depending on the respective status of the cameras.
As an exception, a camera can also be operated in single-frame mode. A lead time is not possible in single-frame mode. In the event of an alarm in single-frame mode, the camera records in one go (i.e. directly one after another at 25 frames per sec. with PAL) the set number of frames (1 - 5 frames). No frames are recorded by any of the other cameras during this recording. This is why the number of frames is restricted to 5 (represents a duration of 200 ms).
Individual frame cameras do not play a role for the calculation of frame rates of cameras as they only record for a max. of 200 ms in alarm cases.

Track length limitation
A track length can be set in hour stages for each camera. Every hour, the system checks whether more recordings by the camera have been saved than stipulated by the max. track length. If this is the case, the system immediately deletes all old recordings that go beyond the max. track length.
The reason for this function is that with track length restriction, "less important" cameras provide "important" cameras with more hard disc capacity than would be possible without a limitation to the track length.

Definition of actions
A random number of different actions can be stipulated for each status.

- Log book entries
  This option is available for movement recording and alarm sensor. An entry is made in the log book as soon as one of the aforementioned recording types is activated.
- Switching to monitor
  This option is only available if the camera can be switched to an external monitor.

- E-mail/SMS
  Is only available if appropriate details have been provided in the e-mail configuration dialogue for sending e-mails or SMS's.
  The user can enter any random text. The system recognises some variables that can be updated before sending the mail:
  %C Name of the camera
  %X Current time (date, time)
- Acoustic signal
  Only available if the computer is fitted with a compatible, operating sound card.
- Alarm messages
  See chapter *3.3.5 Alarm messages*

Camera
A list of all cameras already defined as part of the “camera configuration” is shown in the field “Cameras”. Time settings and events determine whether the cameras are recorded or not.

Alarm sensor
See chapter *3.4.3 Configuration of the alarm* sensors (detectors) .

Switch output
See chapter *3.4.4 Configuration of the switch outputs*

Assignment of camera / alarm sensor
Each camera, also motion cameras (= video sensors, cf. chapter *3.2.5 Motion detection (camera as video sensor)*) can be linked with an alarm sensor. A recording of the respective camera takes place depending on recording configuration.

Assignment of camera / switch output
It is also possible to link a camera with a switch output. This means that activates the connected output when recording. This continues as long as recording is taking place or the connected output is activated by the respective signal (cp. *3.4.4 Configuration of the switch outputs*).

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3.4.7. Configuration of the network parameters

The option "Allow network access" must be switched on in order to enable remote access (whether via LAN or ISDN).

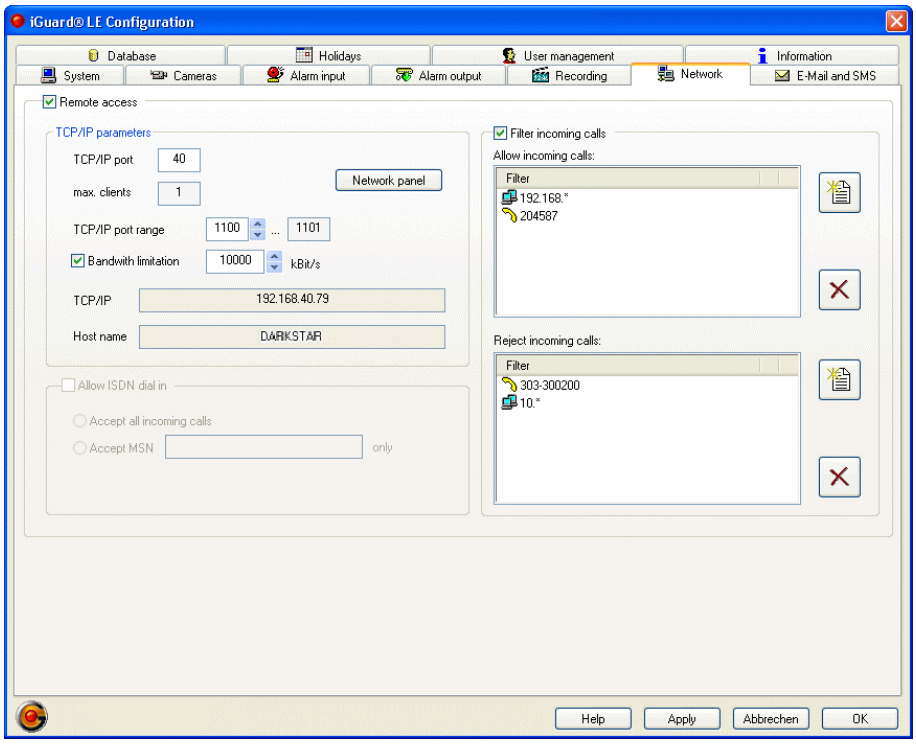

Figure 30: Configuration of the network parameters

TCP/IP Parameter

- TCP/IP Port
  The TCP/IP port (accessible under iGuard®*LE*) must be specified for access by LAN. Port 40 is usually used.
- Max. Clients
  In the iGuard®*LE* version, the max. no. of clients is always set to 1

  The client that register through a LAN connection receive exclusively JPEG images in set quality from the server. LAN clients do not have any further possibility to change the picture quality of live or recorded images. Clients of previous versions (V2.35 or earlier) continue to show control elements and menus for selecting picture quality, a change in the setting however does not lead to a change in picture quality with a V2.40 server.

  The registered client as well as the local user operating on the server can view simultaneously live images, replay recordings and control switch outputs. Playing in a new configuration via iGuard® RemoteView or changing to the configuration level on the server disconnects automatically all existing connections. The connected clients are sent an appropriate message prior to the connection being disconnected.

IP port range for firewalls

If iGuard®*LE* or iGuard® RemoteView are being operated behind a firewall but access still needs to be available from external systems (e.g. from the Internet), it must be possible for all the ports used by iGuard®*LE* or iGuard® RemoteView to be opened at the firewall. The number of ports used by iGuard®*LE* is related to the max. number of clients that can be registered with the server simultaneously. Each client requires 2 dataports. The port range that iGuard®*LE* can use can be set in the network configuration.

With the firewall, it must be possible to open the IP ports listed here.

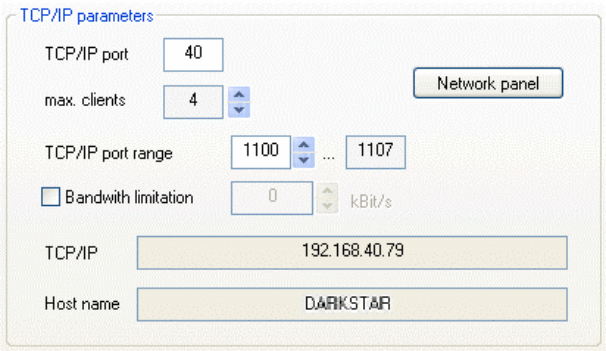

Figure 31: Configuration TCP/IP parameters

Bandwidth restriction for LAN access

The bandwidth approved for a LAN connection for the server can be set using the configuration dialog "network" between 20 kBit per second and 100000 kBit per second (100 MBit per second). The bandwidth restriction can naturally also be switched off completely.

A restriction of the bandwidth can result in a LAN connection with iGuard® RemoteView only running slowly. The reaction time of the server to a command of a iGuard® RemoteView user can also be unbearably long.

For this reason, the bandwidth restriction should not be activated if possible.

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TCP/IP adress / host name
The TCP/IP address is set at the operating system level during configuration of the network board. iGuard®*LE* displays the TCP/IP address and the host name of the computer in a non-edit field. If there is more than one network board in a computer, it is possible that this field does not show the TCP/IP address of the LAN network board but that of another network board. The host name is shown for information purposes but is not used for any further purpose by iGuard®*LE*.

Allow ISDN log-in
The "ISDN log-in" option has to be activated if iGuard®*LE* is also to be available via an ISDN connection.

iGuard®*LE* makes it possible to only react to calls from a specific MSN. The service indicator of an ISDN call must always be "Data". Calls with a different service indicator will be ignored. This enables iGuard®*LE* to be operated on an ISDN connection parallel to a telephone. The telephone only signals a call if it bears the service indicator "Telephony". iGuard®*LE* ignores any such call. And vice versa, the telephone ignores any call with the service indicator "Data". iGuard®*LE*, however, accepts this call.

We recommend using ISDN cards from:
- AVM FRITZ! PCI , FRITZ! USB v2.0
- HST Saphir III PCI

NOTE:
The communication interface between iGuard®*LE* and iGuard® RemoteView has changed because of the direct CAPI-support in many areas. That is why iGuard®*LE* and iGuard® RemoteView are not compatible downwards as of version 2.2.
Because there are differences in the CAPI drives from different manufacturers – and in some cases even between CAPI drive versions from the same manufacturer – it is possible that iGuard®*LE* does not function with CAPI drives or ISDN cards other than those already tested.

Filtering incoming calls
Filters can be defined for incoming network or ISDN connections. The filters enable selective exclusion of particular callers from connection with an iGuard®*LE* server or only allow connection to specific callers. A connection request from unauthorised callers is rejected without comment.

Setting wildcards (*) at the end of a telephone number or IP address is possible. In the event of compliance, the list of authorised callers has priority over the list of unauthorised callers. Consequently, it is possible for access to be granted to the caller with the IP address 192.168.30.100 whereas all other callers from the subnet 192.168.30* are rejected.

When setting up filters that relate to telephone numbers (ISDN, MSN), it should be noted that MSN's are transmitted differently according to the telephone system. The specification of a filter must conform exactly with the type of MSN transfer.

3.4.8. Configuration of E-Mail, SMS messages

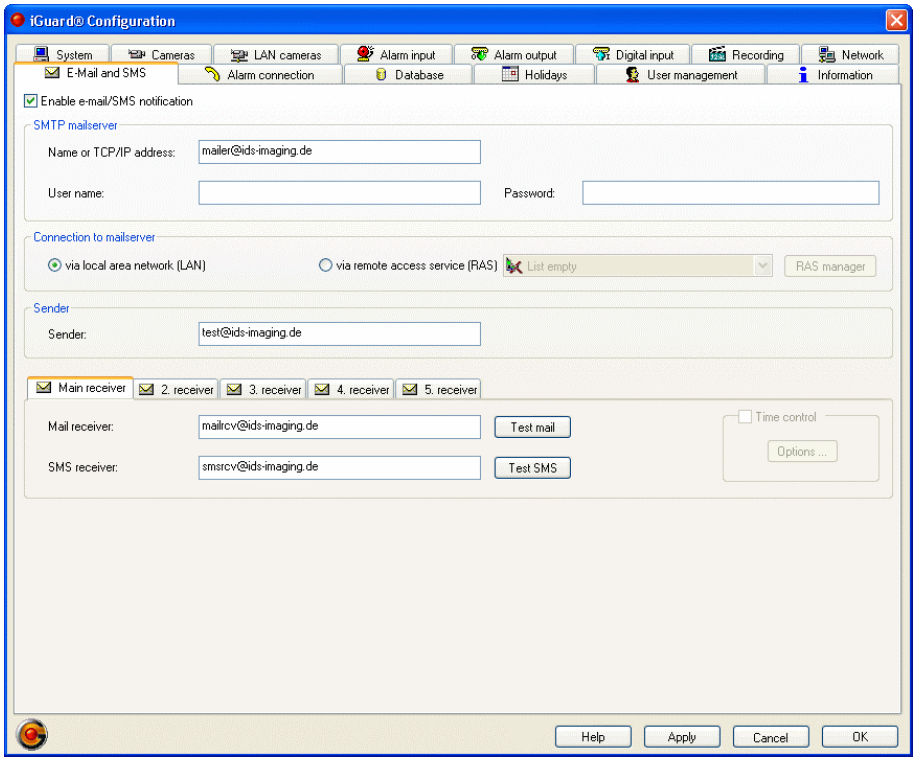

Figure 32: Configuration of email/sms

iGuard®*LE* can send e-mails or SMS messages automatically if a specific event or a malfunction occurs.
Sending these messages can either be via a network or an installed internal or external modem. An SMTP mailserver must be available in the network for the network version.
You have to enter the settings for using this function in this input field. Event-controlled activation is carried out in the "Configuration of the recording" (cp. *3.4.6 Configuration of the recording*).

SMTP Mailserver
Enter here first of all the correct name or IP address of the post output server. This can either be the address of the available mail-server in a network or the address or name of an SMTP service of a service provider which is called up direct via a connected modem. Examples of address entries are:
123.45.67.8 or mail.providername.de.

iGuard®*LE* also supports ESMTP servers. These servers expect an independent registration with user name and password. Both of these have to be entered in the appropriate fields.

Connection to Mailserver
Connection to the SMTP server is possible in two different ways. The mail server can be accessed in the local network either direct or via a router, or it can be dialled in with a dial-in link (RAS). In order to be able to use an RAS link, it has to be

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configured in the operating system first. This configuration is carried out in exactly the same way as setting up an Internet connection, e.g. to T-Online, AOL or other suppliers. If a configured Internet connection already exists, it can be used by iGuard®*LE*. All RAS links configured in the system are listed. The link that is to be used by iGuard®*LE* has to be selected on this list. The button "RAS Manager" calls up the RAS manager of the operating system so that you can set up a new link or change an existing link as easily as possible.

NOTE:
If an RAS server service has been started on your system, please note that this service is not using the same ISDN unit as iGuard®*LE* otherwise it is possible that no connection to iGuard®*LE* can be achieved.
Because iGuard®*LE* does not receive any information from the operating system when an RAS link has been changed, the use has to close the network configuration dialog and open it again after adding or renaming an RAS link. Only then does the system display the new or re-named RAS link for selection.
Please note as well that sending e-mails is impossible if the selected RAS link has been deleted or renamed because iGuard®*LE* identifies the RAS link according to its name.
If a configuration has been transferred from one computer to another, e-mail despatch only functions on the computer receiving the configuration if there is also an RAS link with the same name in that computer.

Sender/Receiver

- Sender
  The name of the sender, e.g. the object or the iGuard®*LE* server name, should be entered here in e-mail address format. Example: site@company.com
- Mail receiver
  The e-mail receiver should be entered here in e-mail address format (this is essential).
  Example: peter.exampleman@callcenter.com
  Along with the main addressee for receiving fault messages, you can also define 4 further addressees that can only receive alarm messages. An individual time control can be installed for each addressee, i.e. the addressee only receives a message at specific times.
  An exception to this is the main addressee where time control is not possible.
- SMS receiver
  The receiver of SMS messages should be entered here in e-mail address format (this is essential).
  Example:
  - D1-Netz : < phonenumber >@t-d1-sms.de
  - D2-Netz: < phonenumber >@d2-message.de
  - E-Netz: < phonenumber >@smsmail.eplus.de

NOTE:
SMS messages are sent to mobile phones via the provider‘s e-mail function, which is why this first must be activated from the service provider in order to receive e-mails via SMS. Receiving these SMS generally means that the mobile phone user will have to pay charges.

- Test Mail / Test SMS
  When these buttons are clicked, a corresponding test e-mail or test SMS is sent directly from the “configuration dialog”.
- Time control
  Use the button "Options" to reach the dialogue for the configuration of the time schedule.

3.4.9. Configuration of the database

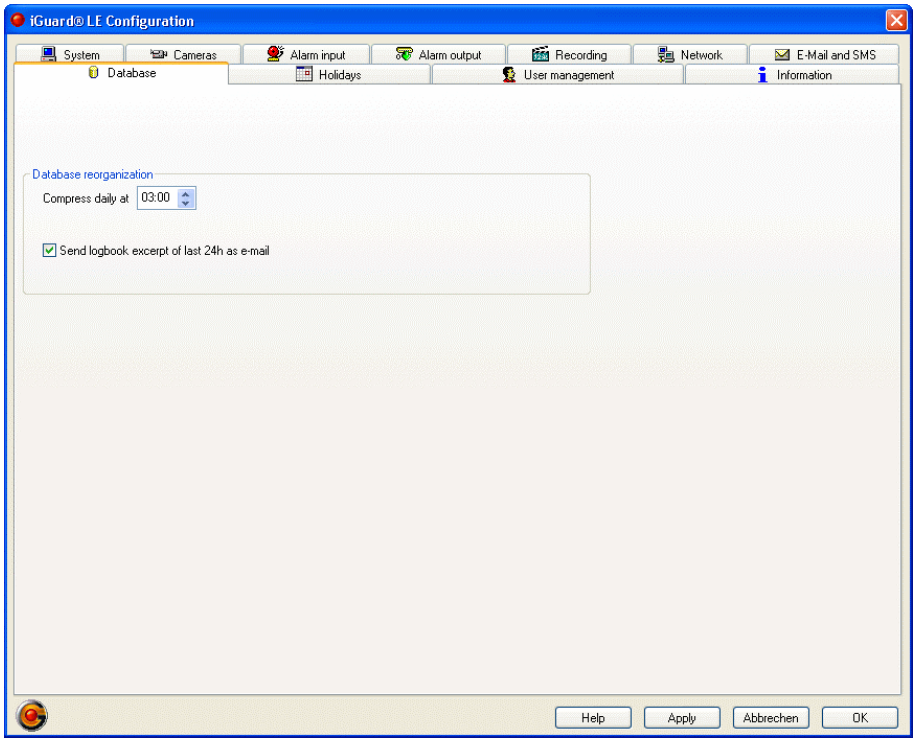

Figure 33: Configuration of the database

Database reorganisation
iGuard®*LE* will, at a pre-set time, carry out an automatic daily scan of its databases and reorganise these to the best possible condition. This routine serves to continuously maintain the database. You should define at what time such a test should be undertaken. Usually, the daily reorganisation time is set for an expected period with low activity, in order to ensure that the performance of the system during operation is not affected by the read/write activities. Testing the databases may take some time, depending on their extent.

Logbook extracts per e-mail
Following a database reorganisation, iGuard® is able to send the main receiver an extract of the logbook for the last 24 hours per e-mail insofar as e-mail despatch is correctly configured under "Network settings". The "Send logbook extract for last 24h as e-mail" option must be marked in the "Database reorganisation" field for this.

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3.4.10. Holidays

Along with the usual weekdays (Mon. - Sun.) there is also an extra day: the "Holiday".

Holidays are configured for the whole system. They cannot be different for one object separately (e.g. a camera).

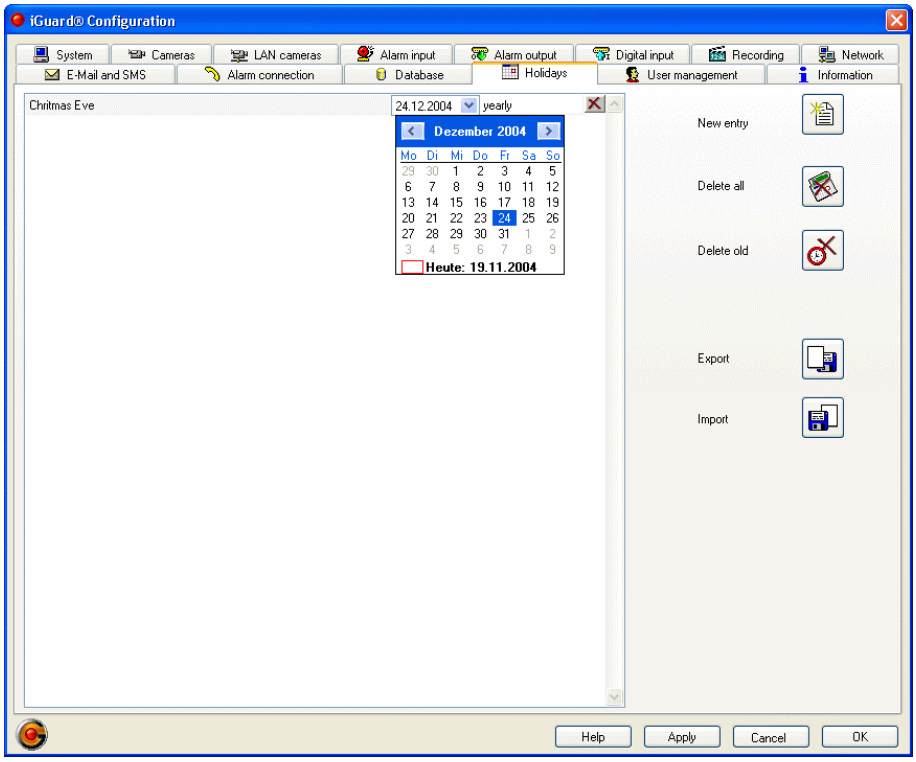

Figure 34: Configuration of the holidays

Holidays are represented in a list. The special feature of this list is that you can edit it.
The first field is an editable field (inputs are possible). Here you give the day a name. The second field shows the associated date. Marked days/weeks/years can be changed with the cursor keys or entered directly. Optionally you can fade in a graphic calendar, in which you can selesee The third field indicates a possible repetition of the date. Repetitions are only annually or monthly possible. If you use "annual repetition" the adjusted year is not important, if you use "monthly repetition" the adjusted month and year is not important.
You create a new day by double-clicking into an empty line, via the context-menu or via the button “New entry”.
You delete an entry via the context-menu or via the small button in the fourth column (appears, as soon as the entry is clicked).
Additionally there is the button “Delete all” which deletes all entries, as well as the button “Delete old”, which deletes already past dates, if these are not repeated.
You have the possibility of exporting/importing the holidays via corresponding buttons.

The Holidays are also stored in the **iGuard.dat** configuration file (see chapter 3.1.4 *Initial configuration*). They are also transferred as well if it is necessary to transfer the complete configuration to another system.

You have the possibility of exporting/importing the holidays separately via corresponding buttons.

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3.4.11. User management

Definition of all persons who will be working with iGuard®*LE* and issuing their user authorisation is carried out in the “user manager”. In its supplied state, there two users defined:

- the “Administrator” with the password “Administrator”
- the “Installer” with the password “Installer”

This users cannot be deleted. The password, however, can be changed.

If adding new users or changing existing users, adjust user rights to meet your requirements.

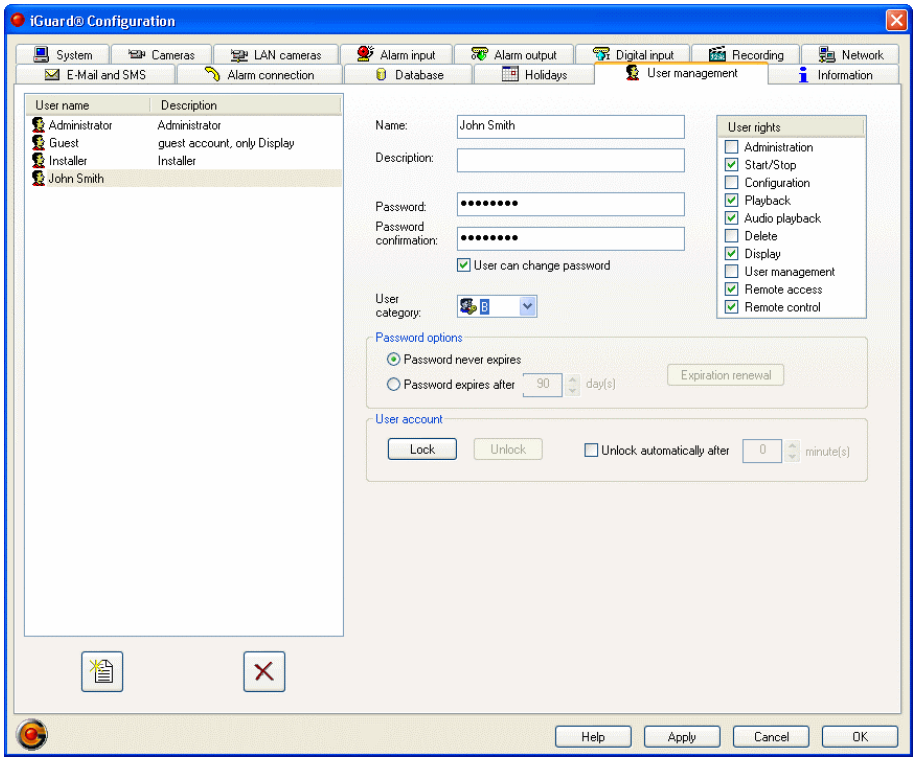

Figure 35: Configuration of the user management

User list

The dialog for the “User management” shows a list of all known users with user name and description. Here additional users can be defined or deleted by choosing the buttons “Add” or “Remove”.

Create a new user

A user must have been appointed by the administrator before he can access the system. The user needs a password and authorisation for the respective system level. A user can only change his password if this feature has been enabled from the administrator or another user with appropriate rights for the “user manager”. You can also apply a time limit to the validity of the password or give it validity for an unlimited period. Extending validity of a password with time limit is possible at any time for a user with user administration rights.

The complete “user manager” is the sole responsibility of the administrator as well as users who have been given the authorisation “User management”.

Grant user authorisations

In the right section of the dialog you can define the authorisations a user is to be set up with:

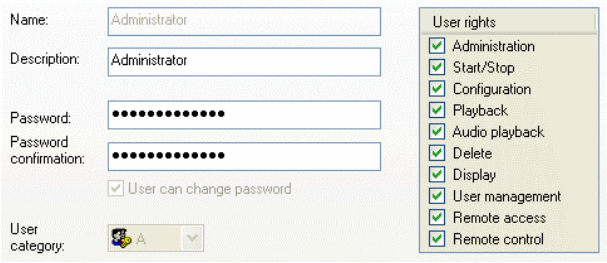

Figure 36: User details

- Every user can get Administrator rights except the “Installer”. “Installer is a pre defined account an can never get Administrator rights.
- “Start/Stop” authorisation allows iGuard®*LE* to be started and stopped.
- The “Configuration” authorisation allows the configuration of the application, the hardware configuration and the access to the configuration mode.
- With the authorisation “Playback” you have the possibility to revise recordings and alarms by using the “Playback mode”.
- A user with "Audio replay" authorisation can call up audio recordings.
- Deleting messages and recordings is only possible by users who have „Delete“ authorisation.
- „Display“ authorisation you can use to decide whether the user in “display mode” may view the pictures of the various cameras or, in certain circumstances, not.
- Installation and administration of users or co-users is only possible with “User management” authorisation.
- There is also the opportunity of remote maintenance, remote surveillance or remote playback using the „Remote access“ authorisation. This can be done using iGuard® RemoteView. Further details of iGuard® RemoteView can be found in Chapter *4 iGuard® RemoteView* of this manual.
- With "Remote control" authorisation you can activate and deactivate switch outputs that have been appropriately configured. Further information see in chapter 4.10 *Remote control of switch outputs*

Password options

Using the selection fields you can decide whether the user password is valid permanently or whether its validity should be restricted to a specific period defined by you.

You can extend the validity of a password by the prescribed period using the "Extend validity" button. The current date is taken as basis for the extension.

User account

The user account is blocked automatically if a password is entered incorrectly three times in a row. A user account is re-enabled either automatically after an adjustable pre-set time or manually by a user with admin. authorisation. The user account of an "Administrator" cannot be blocked.

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The buttons for blocking or unblocking an account are only visible for users with admin. authorisation.

Example: If a value of 15 minutes has been entered for the automatic release of a user account, the 3-times rule starts from beginning again at the end of 15 minutes after the last password input, i.e. if a wrong password was entered for a user account 3 times in a row within 15 minutes.

NOTE:
It is irrelevant whether the input was local or remote via iGuard® RemoteView.

Changing user data
To change a user's data, select by clicking on the respective user in the user list. You now have the possibility of changing all of that user's data.
To do so, you must either be an administrator or have user administration rights.

Delete a user
If a user is to be deleted, you have to select this user in the “iGuard®*LE* user management” dialog and press the “Remove” button. If the following safety check is answered with “Yes”, the user is deleted irrevocably.

3.4.12. Information

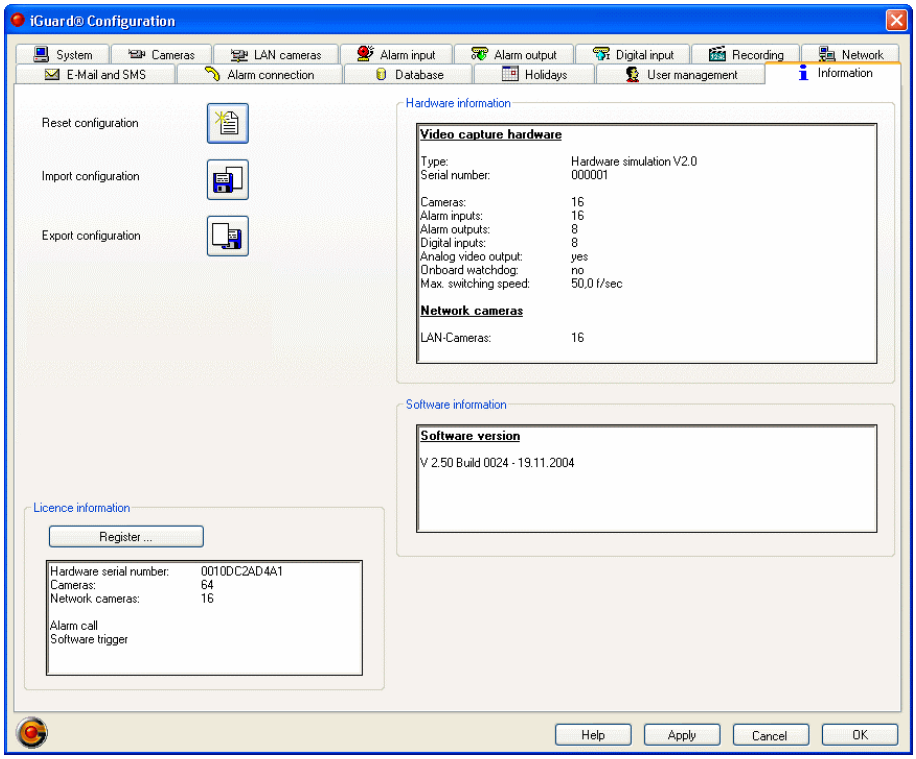

Figure 37: Configuration of the information

Reset the configuration
With this option you can reset iGuard®*LE* to the default parameters.

Import/export the configuration
Please read section *3.1.4 Initial configuration* for the buttons "Importing configuration" and "Exporting configuration".

Hardware information
In this field the the technical details of the currently installed video capture hardware are listed.

Software information
The version information is stored in the configuration file. This means that iGuard® RemoteView can also show the software version (server) with which the configuration has been saved.

Licence information
Here you can see an output field where the hardware serial number is displayed and the "Registration" button.
If you change the configuration of iGuard®*LE* by adding or removing hardware or software options, you will receive a new enabling code which you have to enter in the iGuard®*LE* registration dialogue (cp. *3.1.1 Licensing*). Doing this enables the new or altered options for using iGuard®*LE*.

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3.5. Playback

Analysis of the recorded video data is possible within the “playback mode”. It is based on an extremely powerful database and allows a quick and comfortable playback of occurred alarms or recorded events.

"Playback" can be started regardless of whether recording is running or not. Recording remains active even if iGuard®*LE* is in playback level. Playback is possible both in the iGuard®*LE* application as well as per remote control using the iGuard® RemoteView program.

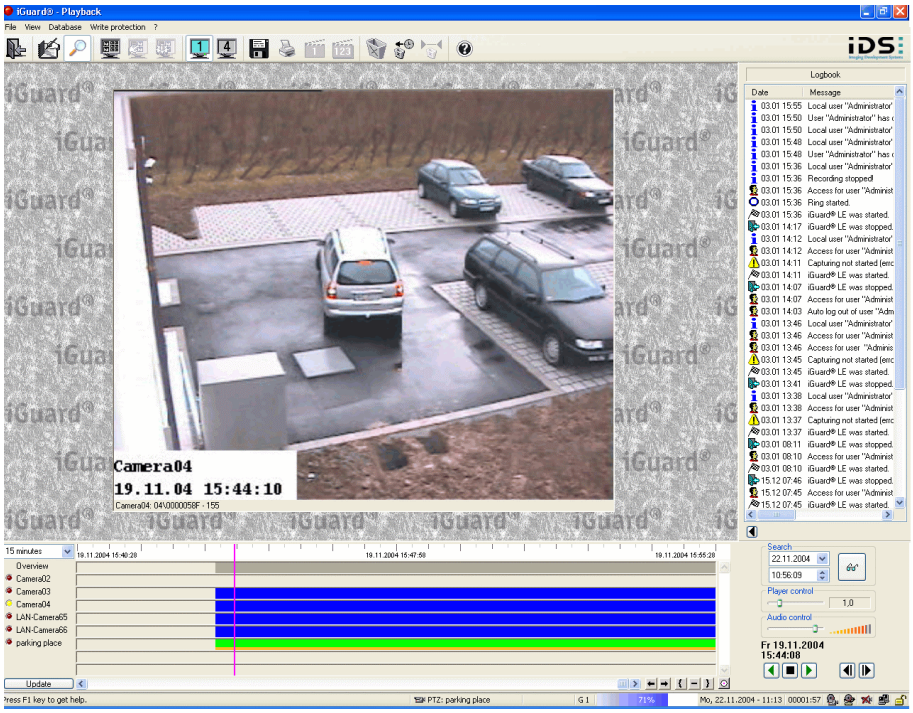

Figure 38: Playback mode

Access to the playback level is only possible if you have "Playback" authorisation. With "Playback" you can search for recorded video sequences or individual images by various methods. The search can be carried out either using the "Logbook" field (this contains all recorded incidents from the handling and current operation of iGuard®*LE*) or using a so-called Timeline display (see below).
Access to the playback level in iGuard®*LE* is achieved by clicking "Display mode" in the *Administration → Playback* menu or the appropriate button ("Play", s. header) in the toolbar.

To get to the "Playback mode" in iGuard®*LE*, click in the "Display mode" in the menu *Administration → Playback* or use the appropriate checkbox in the symbol bar.

3.5.1. Logbook

All relevant messages arising from operation such as for instance alarm messages, starting and stopping of recording, user login/logout, errors etc. are recorded in a logbook. The logbook can be activated or deactivated via the menu *Display → Logbook* or directly by selecting the appropriate button ( ) in the symbol bar. The Display is at the bottom right of the screen. For improved legibility, it is possible to click in the menu *View → Wide logbook* or to click an arrow in the left lower part of the window and you can select a view of the logbook..
When the logbook is displayed, the most recent messages are always displayed, with the most recent of all always at the top of the list. All messages are always given with date and time (hh:mm). Small symbols in front of the messages indicate the message type (e.g. alarm, error, information). All alarms are recorded insofar as the option "Log book entry" has been selected during configuration of the recording (cp. 3.4.6Configuration of the recording).

In order to make it easier to navigate among the mass of messages, these are divided into groups. These may be displayed or faded out by using filters. The filters are selected either via the menu *View→ logbook* and selection of an appropriate filter or by clicking the right mouse button and selecting an appropriate filter. Using these routines, it is also easily possible to jump to the beginning and end of the list. All filters can be set and changed while the program is being executed. The filter only affects the display of the messages. All the messages are still saved in the database.

Log book-based searching is a further aid to finding one's way round. Double click the left mouse button on an alarm entry in the log book or in a track of the timeline and the current window allocation in multi-replay is cancelled and the alarm (double click in log book) or the time line track-related camera is set in the upper left window.
As soon as a user has called up an image of an alarm sequence, this alarm is marked as sighted.
Sighted alarms are marked in the log book by a separate symbol. Using an appropriate log book filter, it is possible to only display the non-sighted alarms.

In the screen shot following, the “triplex mode” with activated logbook has been selected.

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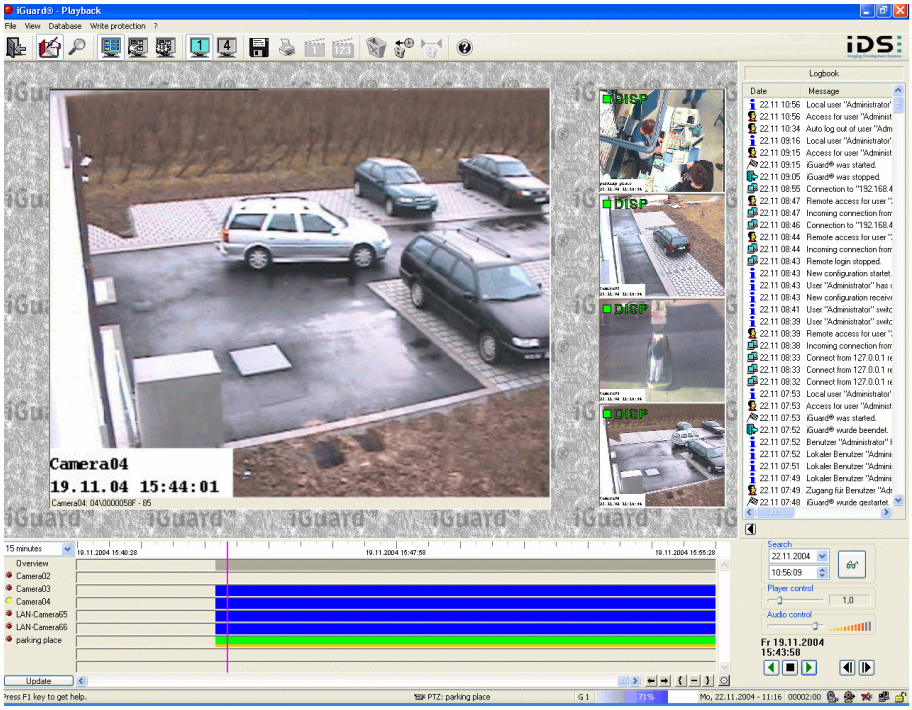

Figure 39: "Triplex mode" with activated logbook

3.5.2. Multi-channel playback

Images from several individually selectable cameras can be displayed at the same time using multichannel playback. A maximum of 4 cameras can be viewed parallel.

Buttons for changing within a display matrix can be found in the symbol bar – the same as in the monitor level. You can choose between a 1x1 display and a 2x2 display.

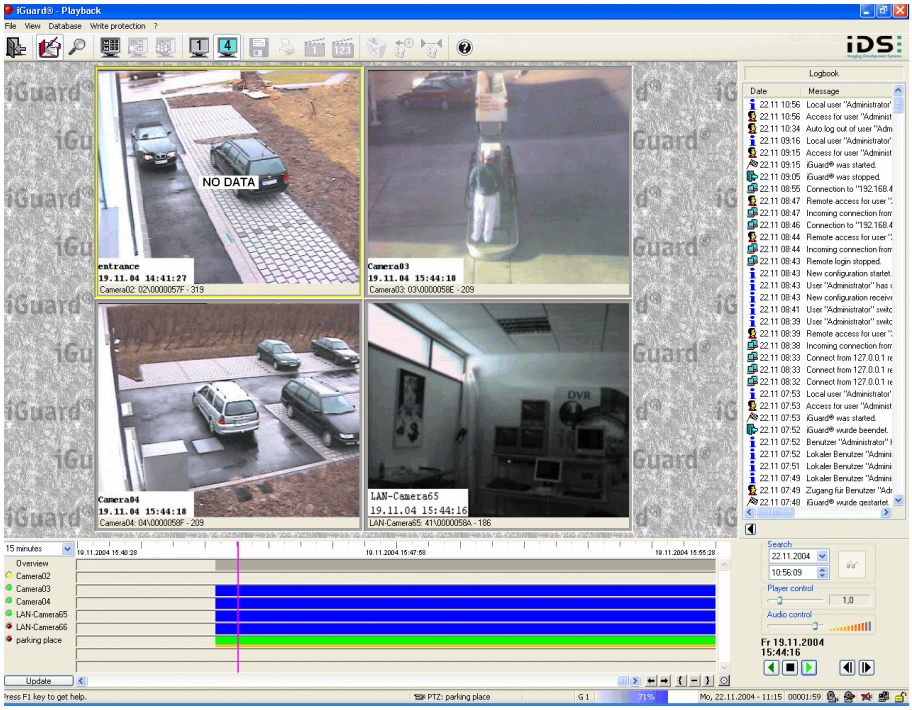

Figure 40: Multi-channel playback

The playback windows also contain an optional additional line at the bottom of the display where the file name and frame number can be displayed. This additional line can be switched on and off globally for all playback windows. The standard setting is "switched off". The frame information is switched on using the context menu of the playback window or the menu *View → Show frame information*.
There is always an active playback window which is highlighted by marking (yellow surround). The following commands only relate to the marked playback window:

- Print
- Save
- Generate AVI sequence
- Assign a camera

Assigning a camera to a playback window is carried out by clicking on a playback window (which marks it) and then clicking on a camera in the list of the cameras displayed in the timeline (left column). In this way, you can assign a camera a specific position. Multiple assignments are not possible. If a camera has already been assigned to another playback window, the assignment is altered to the new window which has been entered.
If no camera has been assigned to a window at the start of playback, iGuard®*LE* will automatically assign the first 4 cameras to the playback windows.
Only the first window (top left) is taken over if you switch back over from multi-channel to single-channel playback.

The settings and assignments are saved so that the cameras are assigned again to the already designated windows the next time playback is selected. This does not apply, however, to iGuard® RemoteView because in this case a different server and therefore a different camera configuration could exist with each connection.

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3.5.3. Audio playback

Audio playback is only possible locally on the server or when evaluating exchangeable discs with iGuard® RemoteView as well. Audio playback is not possible with a remote connection. Audio playback take place automatically when the following conditions have been fulfilled:

- Only one camera channel is displayed. Multi-channel playback (more than 1 camera at the same time) is not possible with audio
- The playback speed is set to 1.
- Playback is forwards (not reverse).
- The computer has a compatible sound system (sound card) installed for playback and the drivers of the sound card are correctly installed.
- A FALCONquattro framegrabber must not run in recording mode (recording stopped)

If an audio playback is taking place, a loudspeaker symbol is displayed between the playback control elements to signal this.

Figure 41: Playback toolbar with speaker symbol

The following should be checked if there is no sound despite the loudspeaker symbol being displayed:

- Are the system's volume regulator (mixer) and possibly the hardware (loudspeaker, amplifier) turned up?
- Is the mixer for playback set correctly?
- Cable connections (sound card to loudspeaker or headphones) OK?
- Was anything audible during recording?

The timeline shows an orange line in the lower section of the camera track if audio is being recorded along with images.
Sound reproduction is synchronised to video playback to a certain extent. Absolute synchronisation is never possible because the sound card and the framegrabber record separately from each other.

Extreme system operating conditions can also result in serious image-sound displacement or not all frames are shown (dropped frames) during playback.

3.5.4. Timeline display

The timeline display is a graphic display of the recorded images per camera over a time axis. A maximum of one overview track plus 8 further tracks can be viewed simultaneously. The overview track shows all stored recordings of each camera within the time line. The overview track enables you to see whether a recording exists from a camera that is not currently supplying an image.
Ring recordings and standard recordings (continuous recordings) are displayed in blue. Green means that movement recording exists. Red means that the recording belongs to an alarm.
The display is scaled over the set time period. Periods themselves can be set in stages (see popup-menu above camera list). There are also the following stages in addition to the setting "Overall duration" which shows the complete period of all

stored recordings: "4 weeks", "1 week", "2 days", "1 day", "12 hours", "5 hours", "2 hours", "1 hour", "15 minutes" and "3 minutes".

Each field of the diagram describes a time window of greater or smaller size depending on the set time range. Clicking with the left mouse key on a field provides the corresponding image. In this case, iGuard®*LE* seeks an image that was recorded at the start of the time period described by the selected field. If no image has been stored at that time, iGuard®*LE* searches for an image that is as close as possible to the required time (marking "out of focus" at bottom right edge). Slight inaccuracies are possible when clicking on a field depending on the resolution and selected time range.
The actual displayed time is marked in the diagram by a vertical line (colour: magenta). The configuration of the current display can be rearranged using the button „Update“ at bottom left.

The corresponding fields of the diagram are also marked in colour during recording (no marking = no recording). Colour marking is differentiated as follows:

- **Blue:** image recording (at least 1 image) has taken place in the time window defined by this field / Pre-trigger phase (cf. chapter *3.4.6 Configuration of the recording*)
- **Green:** as blue, though with movement detection instead / Post-trigger phase (cf. also *3.4.6 Configuration of the recording*)
- **Red:** at least 1 alarm image has been recorded

A click with the left mouse key and dragging the mouse to the right or left while holding the mouse key pressed causes so-called "scratching". This means that during the movement, the display always shows the image corresponding to the actual mouse position and therefore to the current moment in time.
Scratching is only possible locally on the iGuard®*LE* recording computer (server), not using iGuard® RemoteView.

If the right mouse button is clicked in the timeline, a square opens up. The size of this square can be altered with the mouse while holding the right mouse button pressed. This square is used to mark a time range. A context-menu is displayed when the right mouse button is released. With this menu, the user can define which functions are to applied to the marked range. The following functions are available for selection:

- Enlarge section
- Export section as AVI sequence (relating to the selected camera)
- Delete recordings
- Exporting multiple AVI sequences (related to all selected cameras)
- Write film sequence on CD/DVD
- Write multiple sequences on CD/DVD
- Mark range

The option “Enlarge section”, however, is only possible if the finest setting "3 minutes" has not already been selected.

When zooming in the timeline, iGuard®*LE* selects the appropriate time range which is the iterative closest to the selected time range from the available stages. The selected range is displayed centrally.

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Marking
Marking in the timeline is also possible with the following buttons: { - }
Click in the timeline the starting point of the range to be chosen and then "{", afterwards the final point of the area and then "}". For removing the margins use -.

Leaping
Using the button on the right alongside you can leap to the current time (which is marked by the magenta-coloured vertical line). This button is only active if it is possible to scroll horizontally in the timeline, i.e. if the time range currently being displayed according to the setting stage (see above) does not comply completely with the length of the time range which had actually been saved. Furthermore, you can use the arrow buttons alongside to leap to the beginning/end of the recording.

Capturing
Click on a moment in the timeline where there are no recordings and the marking leaps to a point with existing recordings which is as close as possible to the required moment in time („capturing"). The set views then show accordingly the images from that point in time.

Deleting
The toolbar offers three options for deleting recordings shown in the timeline:

	The whole range to be seen in the timeline will be deleted (only possible when STOP is set).
	Only the range before a point of time clicked in the timeline will be deleted.
	Only a marked range will be deleted.

3.5.5. Database scan

Right next to the timeline you have the possibility of specifying a time (date and time) and starting a database scan. iGuard®*LE* then shows from the selected camera the image which is the closed to the specified time.

With inserted logbook (see chapter *3.5.1 Logbook*), the corresponding event is marked for each displayed image. This enables you to establish which entry of the logbook belongs to the displayed image. If, on the other hand, you select an entry in the logbook, the system shows from the selected camera the first image that belongs to the selected event.

3.5.6. Triplex operation

Triplex operation means that recording, playback and display of live images is possible simultaneously.

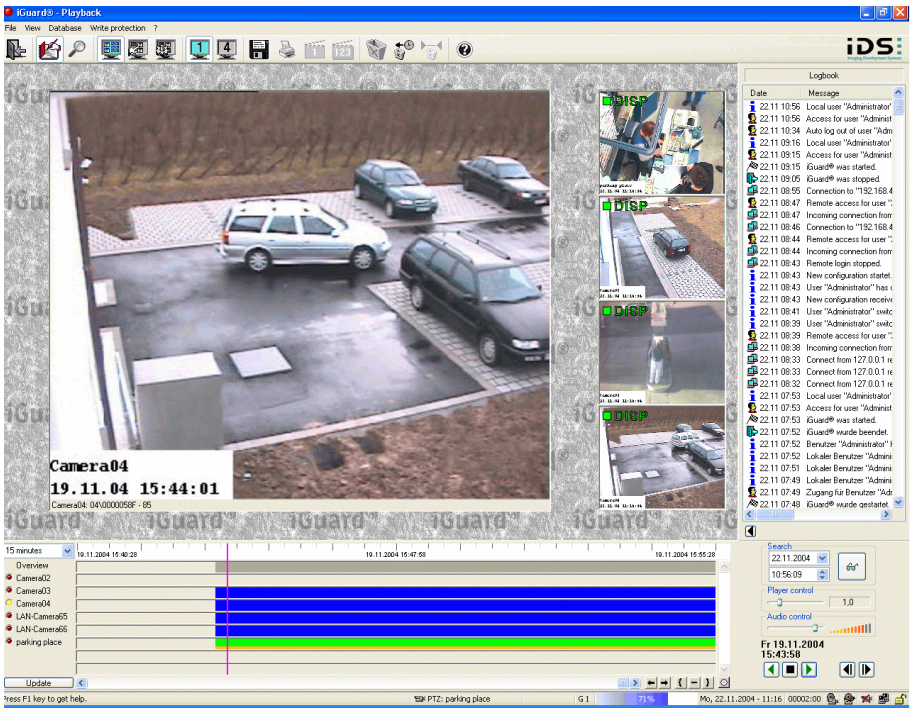

Figure 42: Triplex operation at playback level

The user has to switch on display of live images at playback level using the *View → Display on* menu. The setting is stored (though not user-related). Live images are displayed flush left of the logbook in a column. If the logbook is not visible, the camera images are displayed on the right side of the application in 2 columns. Image size is restricted to QCIF format and cannot be changed. Zooming is not possible. The number of displayed cameras depends on the VGA resolution of the system and the unblanked area of the logbook. With a resolution of 1024x768, 3 cameras are displayed (without logbook 6 cameras), with a resolution of 1600x1200 6 cameras (without logbook 12 cameras). If there are more cameras than can be displayed, cameras groups are formed as on the monitor level. Switching over from one camera group to another is then carried out manually or automatically in the same way as on the monitor level (menu *View → Next display group*; *View → Start camera scan).*

3.5.7. Logbook

The logbook is activated either using the appropriate button (s. header) or with the *View → View logbook* menu. It is shown at the top right in playback mode. It is used for finding and evaluating the video sequences stored in the database, irrespective of whether they are longtime recordings, "only with movement" recordings or alarm recordings.

To simplify the revision, different entries may be combined by a filter according to the message type and/or period. Filtering according to the message type is carried out by selecting a type of messages from a list shown in the context-menu of the logbook. The default setting is that when the playback dialog is called up all alarm messages from the entire period of the saved recordings are displayed.

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Figure 43: Filtering options for logbook

Having selected a period or time interval for messages, it is now possible to access the respective video data directly. This is done by selecting entries within the “Logbook“ field using the mouse or the keyboard. iGuard®*LE* then automatically shows all involved cameras for the selected entry in the „Cameras“ field. Having selected the required camera, its camera picture is shown in the „Camera“ field at the start of a ring recording or the respective alarm image at the start of an alarm recording.

3.5.8. Recorder control

After having selected with the mouse a date from the timeline (see chapter *3.5.4 Timeline display*) or an occurrence from the logbook and a corresponding camera, you can play back a video sequence using various playback keys.
Possible functions are Forwards ( ) /Reverse ( ), stop playback ( ), Frame and back (/). You can also set the playback speed in the "Playback control" field. See so-called "Scratching" as well in this respect (see also chapter 3.5.4 *Timeline display*).

3.5.9. Zooming

In order to recognise details better in cases of doubt when revising the images, it is possible to zoom in within a displayed picture. This is done by drawing a window with the left mouse button around the area to be enlarged (Zoom In). The pictured area will then appear within the window. There is also the additional option of pressing the right mouse button in the picture window to switch into or out of the “zoom-interpolation“ function (context-menu). For strong zoom, this improves the picture quality. Zooming is also possible during the playback of a video sequence. By double clicking the left mouse button within the window the image will return to its original size (Zoom Out).

3.5.10. Printing pictures

iGuard®*LE* in “playback mode” gives you the opportunity to print out individual pictures for further processing. In this procedure the picture currently displayed is the one printed. Click the button in the icon bar to print an image from the active camera window.

The usual Windows® printer dialog only appears when iGuard®*LE* is started for the first time. Once the printer has been selected and printing has been confirmed the picture in question is then printed.

Additional information is printed depending on the printing alignment chosen by you. With upright format, the additional information is printed as text underneath

the image. With horizontal format, the image is printed without additional information.
If changes are to be made later within the printer dialog, these can be carried out via the menu "*Printer Set Up"* in the "playback mode".

3.5.11. Export of pictures

Further opportunities for processing the video recordings are provided by saving the pictures under another name. For this export of pictures, press the button displayed above in the „Output" field. iGuard®*LE* also offers the opportunity to save the picture in JPG as well as BMP format. As it is the case when pictures are printed out, it is the picture currently being displayed which is exported/saved.

NOTE:
Exporting one picture requires considerably more storage space than this needs within recording of picture sequences. This is because the picture is saved as a complete picture (768 x 576 pixels (PAL)) - and not as a ¼ picture (384 x 288 pixels) in case of normal resolution or a ½ picture (768 x 288 pixels) in case of high resolution.

3.5.12. Export of AVI-Files

An export of linked video sequences is also possible as AVI file with iGuard®*LE*. You must have marked a time range in the timeline display (Cut In and Cut Out at the bottom right edge of the timeline) and selected one or more (up to four) cameras.

Figure 44: Playback toolbar with AVI export symbols

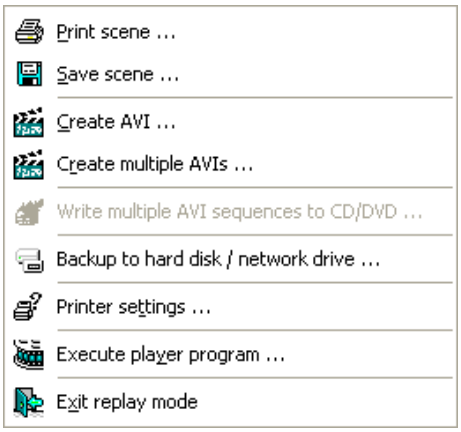

Figure 45: Playback menu "Replay" according to selected range

Generating individual film sequences
Using the "Generate film sequence" function in the "File" menu or corresponding symbol in the toolbar, the user can enter a file name and a directory where the film sequence is to be written.

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Generating multiple film sequences
With multiple export, the user selects a directory where the exported AVI sequences are to be stored, specifies the max. permitted file size and stipulates a base file name.
The base file name is automatically extended by "_xxxxxxxx" by the system, whereby "xxxxxxxx" stands for the name of the camera.

A multiple export via iGuard® RemoteView is also possible insofar as the connected server supports multiple export (i.e. as of server version 2.45). If not, iGuard® RemoteView does not offer the option of "Generate multiple film sequences".

It is also possible to generate a CD/DVD with all exported sequences (siehe *3.5.13 Export to CD / DVD*).

3.5.13. Export to CD / DVD

Exported image sequences can now also be stored direct on a CD-R, CD-RW, DVD-R, DVD-RW, DVD+R, DVD+RW or DVD-RAM.

A precondition for this is that the user has suitable hardware (writer) and the appropriate Nero Version 6.0 software.
iGuard®*LE* makes direct use of the functions of the Nero 6.0 writer software. Writer support by iGuard®*LE* is not possible without the installation of Nero 6.0, even though appropriate hardware has been installed.
Appropriate menus are displayed at the replay level if iGuard®*LE* has detected a CD or DVD writer through Nero 6.0 (see *Figure 46: "Replay" menu with CD/DVD writer support*).
As iGuard®*LE* uses Nero 6.0 as writer software, all other writers supported by Nero are also included. If the writer being used is not supported, appropriate updates for Nero should be obtained from the manufacturer via the website www.ahead.de. Please send any queries you may have regarding the support of specific writers to that address as well.
An important feature of the iGuard®*LE* is the possibility of automatically requesting several blank discs one after the other if more image sequences are to be written to disc than would fit on one blank. When generating AVI sequences, iGuard®*LE* does not check whether the generated sequence fit onto one disc.
We recommend always having an adequate number of CD/DVD blank discs available.

NOTE:
RW blank discs must not be formatted. iGuard®*LE* does not use any packet writing. It is possible to delete RW media with iGuard®*LE*.

For safety reasons, iGuard®*LE* generally writes at max. 8x CD speed. If the writing speed is too high, the CD writer requires too many system resources which can lead to a breakdown in the recording frame rate with iGuard®*LE* or in extreme cases to watchdog errors of the recording hardware.
iGuard®*LE* supports writing of several sessions. For this reason, iGuard®*LE* writes exclusively in multi-session format and never closes sessions. There is a possibility

of errors in reading the media if using older CD-ROM drives that are not able to support this format.

If there are already files on the CD or DVD with the same name as the those to be added, iGuard®*LE* will not overwrite the existing files. Instead, the new files will be provided with a name suffix "_$xxx" whereby "xxx" stands for a serial number commencing with "000".

iGuard®*LE* automatically writes the iGuard® player (igdplay.exe) onto each CD or DVD. This cannot be prevented by the user. The iGuard® player enables exported sequences to be played back on any Windows®-PC.

iGuard®*LE* offers 2 possibilities for writing files to CD/DVD:

- Write all files of a directory to CD/DVD
- Export film sequences direct to CD/DVD

At the replay level, the user will find three entries in the "File" menu that relate to CD/DVD drives. This menu is only visible if the above-mentioned requirements have been fulfilled.

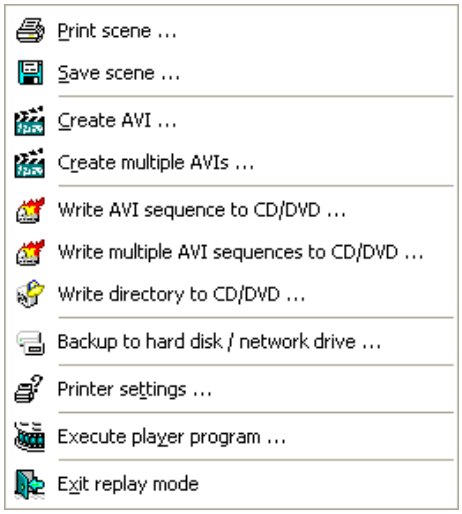

Figure 46: "Replay" menu with CD/DVD writer support

Writing directory to CD/DVD

The user has to select a directory. All files that are in that directory are written to disc. Further discs are automatically requested if the size of the medium is not large enough.

The user can stipulate whether the written files should be deleted after being written to disc.

A special dialog is visible during the writing process. This prompts the user for further action or displays the progress of the writing process:

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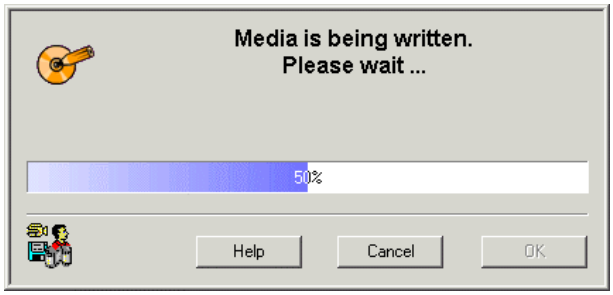

Figure 47: CD/DVD writing process

The function "Write directory to CD/DVD" can be used, for example, if several AVI exports are necessary from one directory (exporting several cameras or different periods).

With iGuard® RemoteView this menu option can also be found at monitor level.

Writing film sequences to CD/DVD
The operation of this function corresponds with the previous export of a film sequence with the difference that following the export of the files (which are always written to the hard-disc first), the files are written to disc and then deleted.

The period marked in the timeline is exported from the active camera (yellow surround). This function can also be called up using the context menu of the timeline.

iGuard®*LE* automatically requests additional discs if the exported film sequence is too large to fit on one disc.

This function is not available with iGuard® RemoteView with an online connection. This function is possible with iGuard® RemoveView if replaying from an interchangeable hard-disc.

Writing multiple film sequences to CD/DVD
Several film sequences from all marked cameras (max. 4 cameras) are generated and written to CD/DVD immediately.

iGuard®*LE* automatically requests additional discs if the exported film sequence is too large to fit on one disc.

This function can also be called up using the context menu of the timeline.

This function is not available with iGuard® RemoteView with an online connection. This function is possible with iGuard® RemoveView if replaying from an interchangeable hard-disc.

3.5.14. Processing the database

The processing functions for the data bases can be called up using the *Database* menu or by pressing the right mouse button.

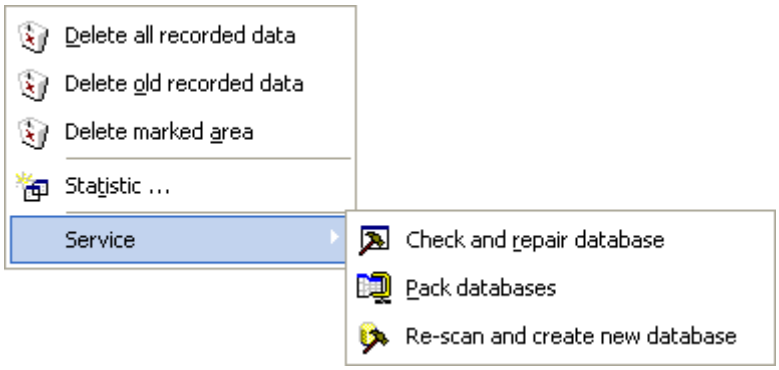

Figure 48: Menu Database

NOTE:
The "Service" functions are only available to users with administrator rights.

Delete All Recordings
This function delete all recordings. This is possible only for a user with “Delete“ authorisation

NOTE:
The “Delete All Recordings“ is only possible when STOP is set..

Delete Old Recordings
This function delete recordings made before a specified time. This may also be carried out automatically at a pre-set point in time with the corresponding configuration.

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Statistics

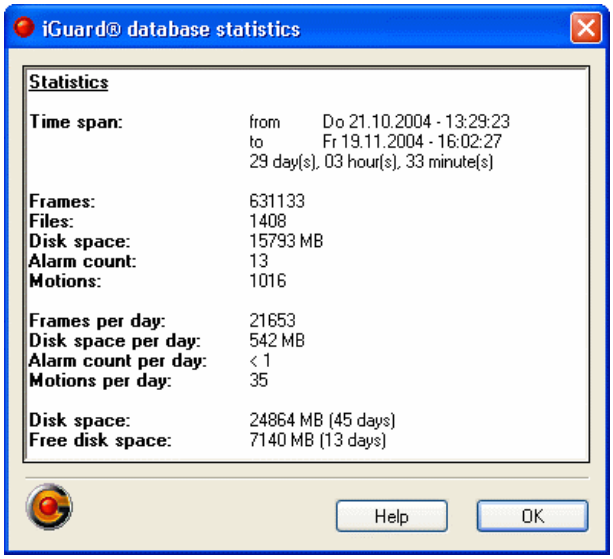

Figure 49: Database statistics

With the menu *Database → Statistics* you can call the statistic of your database and list the following data:

- the period of stored recordings. The point of start and end is displayed in days/hours/minutes
- the number of stored images
- the number of stored files (IGD-files)
- the hard-disc-space of all stored files. The actual space on the hard-disc varies (it is larger) from this value. That is because:
  - in the IGD-files is stored more than the pure images.
  - the size of the images, as you configure it, will not be reached exactly.
  - the hard-disc is divided into sections with a fixed size.
- the number of alarms which occurred in the defined period.
- the average number of images per day. If the period is < 1 day, a computer forecast takes place.
- the average amount of hard-disc-space per day. If the period is < 1 day, a computer forecast takes place. Limits as for all fields in common.
- The average amount of motions per day. If the period is < 1 day, a computer forecast takes place.
- The average amount of alarms per day. If the period is < 1 day, a computer forecast takes place.
- The complete estimated time for recording. Basis for the calculation is the daily amount of hard-disc-space and the amount of all hard-disc-space, which is available for recording.

Service

Under this menu option, users with administrator rights also have other processing functions at their disposal:

- Check database and repair
  Check that entries are in place. With a negative result, the respective entries are deleted

- Compress data base
  “Compress Databases“ physically deletes previously deleted entries and thereby gains more space on the hard disc.
- Create new database
- Export record database
- Export message database

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4. iGuard® RemoteView

4.1. Functionality

iGuard® RemoteView offers you the opportunity for easy revision of video sequences by remote access. iGuard®*LE* here functions as a server, with iGuard® RemoteView as the client. This enables you to carry out the revision independently of place, as long as the iGuard®-system is running and also the PC intended for the revision are networked. Finally a connection via LAN or ISDN to the iGuard®-system is running is then required.
Another option is to use iGuard® RemoteView to revise databases without the requirement for a direct connection to the iGuard-system. To do so it is necessary to have the two databases, “Record-“ and “Message Database”, available.
This enables you then to operate iGuard®*LE* with removable hard discs, which can then be locally revised using iGuard® RemoteView.

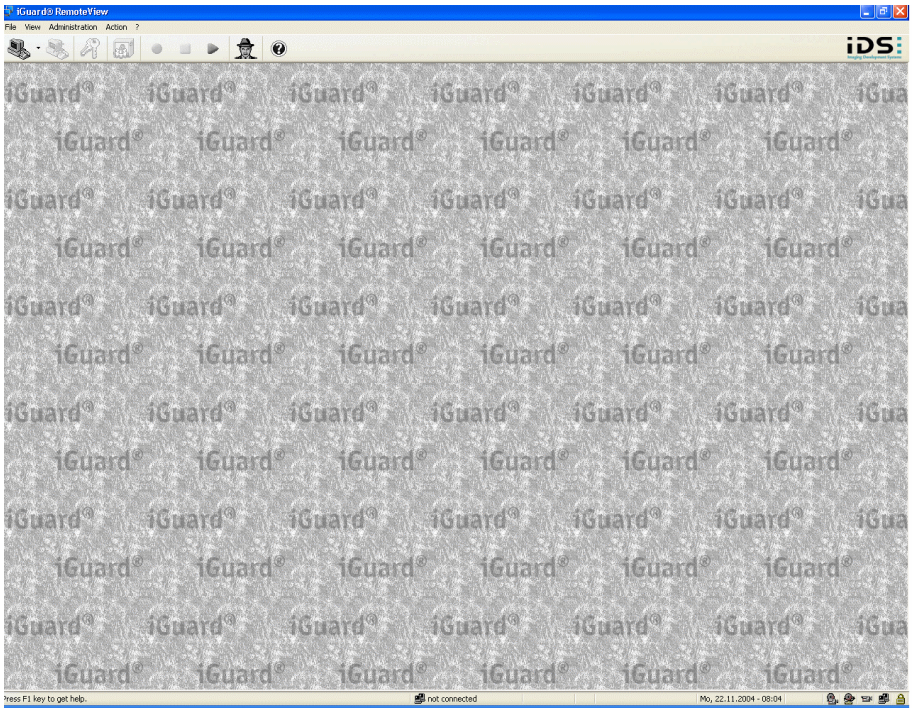

Figure 50: iGuard® RemoteView

After starting iGuard® RemoteView, the window displayed above will appear. This is similar in appearance and function, in reduced form, to that of iGuard®*LE*. Buttons with the same functions in iGuard® RemoteView have the same appearance as in iGuard®*LE*.
You now can decide whether to make a connection to iGuard®*LE* or to open an existing database.

4.2. Application configuration

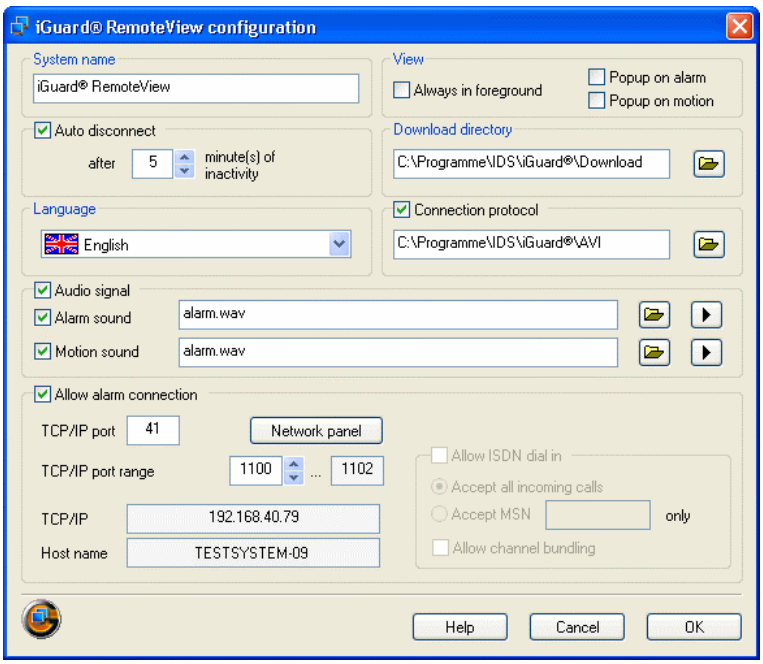

Figure 51: iGuard® RemoteView - configuration

iGuard® RemoteView can be configured with the help of a dialog. The parameters are stored in the file **iGuardRemoteView.dat**. The configuration dialog is accessible through the menu *Configure Management → RemoteView*.

Figure 52: iGuard® RemoteView - menu "Administration"

The meaning of the parameters "System Name", "View", "Auto disconnect", "Language Version" and "Acoustic Signals" is identical to that of the parameters with the same name in the iGuard®*LE* server application.
The configuration files (see below) received from the server for remote configuration are stored in the indicated download directory.
We do not recommend stipulating a floppy disc drive for saving as the configuration files can be > 1 MB depending on the extent of the stored configuration.
The user must mark the "Connection protocol" option in this dialog for a protocol to be made (see chapter 4.7 *Connection protocol*).
The AVI files with file names stipulated by the program are then generated in the specified directory. The specification of a floppy disc drive is not recommended in this case either. Unlike the server application iGuard®*LE*, in this case it is also possible to specify a network path.

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4.2.1. IP-Portbereich für Firewalls

If iGuard® RemoteView is operated behind a firewall but access still needs to be available from external systems (e.g. from the Internet), it must be possible for all the ports used by iGuard® RemoteView to be opened at the firewall. Each client requires 2 data ports. The port range to be used can be set in the iGuard® RemoteView configuration dialog. The relevant IP ports must be opened with the firewall.

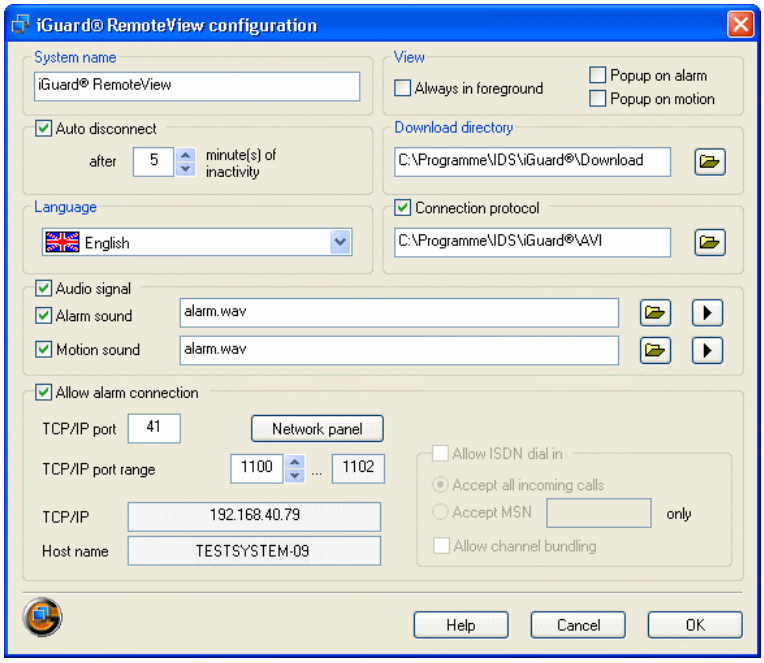

Figure 53: iGuard® RemoteView – IP-Port configuration

4.2.2. ISDN-login

The option "Allow ISDN login" also has to be activated if iGuard® RemoteView is also to be accessible via an ISDN connection. iGuard® RemoteView makes it possible to only react to calls from a specific MSN.
The service indicator of an ISDN call must always be "Data". Calls with a different service indicator will be ignored. This enables iGuard® RemoteView to be operated on an ISDN connection parallel to a telephone. The telephone only signals a call if it bears the service indicator "Telephony". iGuard® RemoteView, however, ignores any such call. And vice versa, the telephone ignores any call with the service indicator "data". iGuard® RemoteView, however, accepts this call.
If two channels are to be authorised for an ISDN connection, you will have to also activate the “Allow channel bundling“ option.

NOTE:
This option must not be activated if one channel has to be kept free for a separate line (e.g. alarm system).

4.3. Connecting to iGuard® *LE*

A rapid possibility for setting up a connection to iGuard® *LE* is by using the drop-down menu which is opened with the arrow symbol on the right next to the "Address book" button. This menu shows a list with the list 5 selected iGuard® *LE* servers. As this list represents a history of connections it is initially empty and the function therefore is not available when setting up a connection for the first time.

Further possibilities of establishing a connection to iGuard® *LE* can be found by selecting the menu *File → Connect* or by pressing the above shown button. The “iGuard address book“ dialog box will then appear. Here you now have the choice of on the one hand making new entries into a list or processing or deleting entries, or on the other to make a connection by selecting a list entry or searching for existing entries.
By means of the option “Show all” you can see the indications to Server Name/IP address, Port RAS and Phone Number.

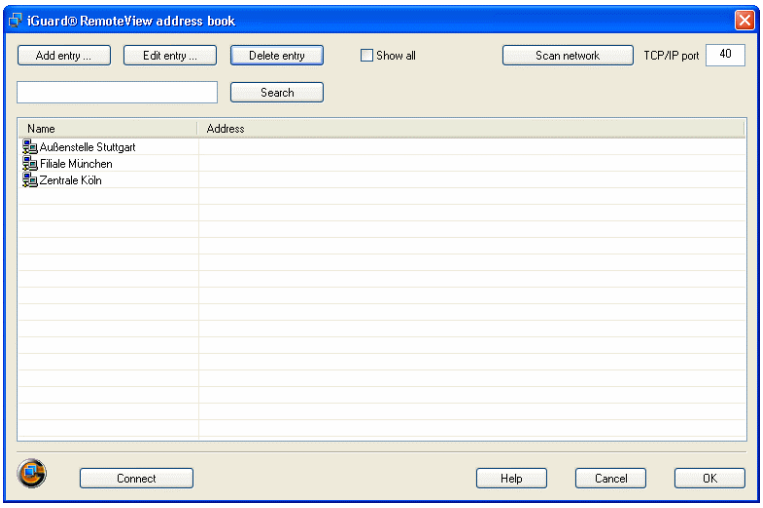

Figure 54: iGuard® RemoteView – address book

Please note that in order to establish a connection you must have „Remote access“ authorisation. The authorisation must also be approved in the iGuard® *LE* ”configuration mode” in the *Remote access with iGuard® RemoteView* field.

NOTE:
This will not be possible in this way if you use Windows 2000® or Windows XP®. Here the manual set of the connection in the network environment of your system is necessary. Then you can select a connection in the address book.

After iGuard® RemoteView has been installed, there will yet be no entries in the telephone book. You will therefore have to create an entry using the „Add Entry“ button. After pressing the „Add Entry“ button, the “Telephone book entry“ dialog box will open.
Here you will see the text fields “Description“, “Server location“, “Server IP address“, “Server port“, and “Server phone number“. The text fields “Description“, “Server IP address “, “Server port“ and if required „Server phone number“ must be filled in.

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In the „connect via“ field you can select the connection type you desire. The conditions for the connection type chosen must be met, of course (cf. chapter *3.4.7 Configuration of the network parameters*).
Only cyphers and the symbols “**(“, “)”** and “**-“** can be entered into the text field “Server phone number“. Filling in the field “Server location“ is optional. Once the above is completed, the OK button will return you to the “iGuard address book“ dialog box; you can use the button Connect to create an immediate connection.

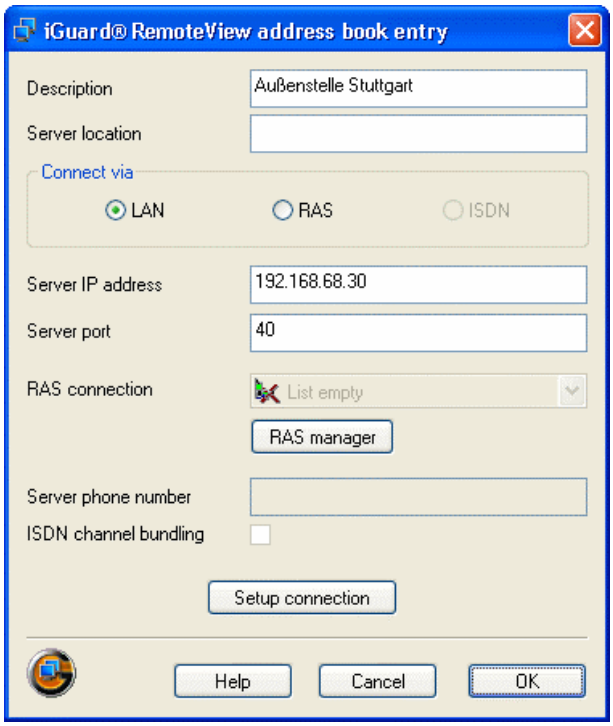

Figure 55: iGuard® RemoteView – telephone book entry

Using the "Search network" button, you can have iGuard® RemoteView search the local network and automatically add all iGuard®*LE* servers to the address book that are not already listed in it.

The search is carried out for only one specified port. If there are iGuard®*LE* servers in the local network with different ports, a search will have to be made for each port.

This function is currently only available for class C networks yyy.yyy.yyy.xxx (yyy are fixed, xxx variable).
In view of the restrictions of the operating system version Windows XP Service-Pack 2, this procedure can take a number of minutes under certain circumstances if using Windows XP with ServicePack 2.

If there are already entries in the “iGuard address book“ dialog box, these can be clicked on with the left mouse button. The buttons “Delete Entry “, “Edit Entry “ and “Connect“ will then also be available. “Delete Entry“ will delete an entry, while “Edit Entry“ will re-open the “Telephone book entry“ and make it possible to make changes there. If the entries in the telephone book are already very extensive, entries can be reduced to those covered by a search definition by entering the definition in the text field next to the “Connect“ button and then pressing the “Search“

button. After pressing “Connect“ you will arrive at the “Login“ dialog box, into which the user name and the password for access to the “playback mode” of the iGuard®*LE* -server must be entered.

The progress display for the status of data transmission is located in the middle window of the status line. You can switch over from the current data rate "kbps" (= Kbytes per second) and the progress of the transmission "%" (0 - 100) by clicking with the mouse in the window. The progress display is no longer visible when 100 % has been reached.

NOTE:
Please note that you must have "Remote access" authorisation in order to be able to set up a connection. Remote access also has to be authorised in the configuration mode of iGuard®*LE* in the "Allow network access" field (*3.4.7 Configuration of the network parameters*).

4.4. Display cameras live

To display the pictures grabbed by a camera live you must have “Display“ authorisation. By selecting a camera in the “Cameras“ field the live picture of this camera will appear in the window.

NOTE:
A maximum of 16 cameras can be displayed simultaneously with an ISDN connection. Other than this, simultaneous display of all cameras is possible.
In the live picture, in contrast to SISTORE MX the titles “REC“, “STOP“ or “DET“ are **not** available.

By double clicking the left mouse button within the picture or by clicking the right mouse button within the picture and then selecting “Full Picture“ out of the context-menu the window may also be enlarged.

4.5. Virtual guard’s “walk around”

The function "Virtual guard" is only available with iGuard® RemoteView. It is used for establishing in a pre-set sequence time-controlled and automatic connections to various recording systems, displaying pre-set cameras and separating these connections at the end of a pre-set time and establishing a new connection to another server.
The virtual guard uses the known telephone directory and identifies the connection settings using the telephone directory. This means the user has to enter the connection settings in the telephone directory first before the configuration of the guard can work with these settings. The connection is identified by its name. This is why names in the directory must be clear and should not be repeated.

A dialog for guard configuration is opened using the menu "Administration" and then "Virtual guard configuraton ...".

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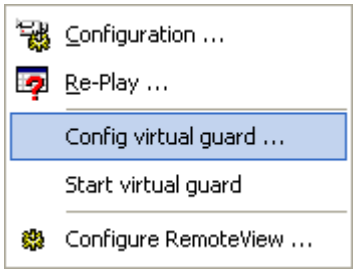

Figure 56: iGuard® RemoteView – Virtual guard start configuration

The "Add new entry" button opens the existing telephone directory. The user now has to mark one or more connections in the telephone book and end the telephone book with OK. The market connections are now copied by name into the guard function and appear in the configuration dialog for the virtual guard.

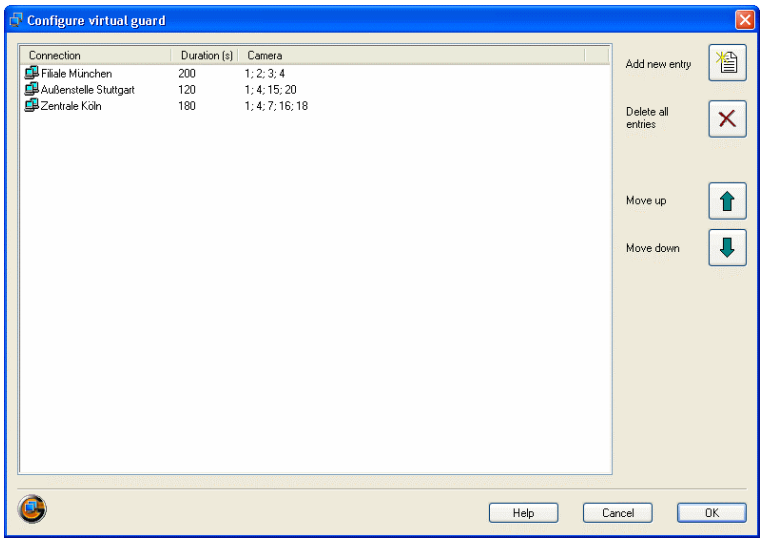

Figure 57: iGuard® RemoteView – configure virtual guard

A connection duration in seconds can now be set for each connection. In addition, a list of cameras can be stipulated which are to be shown live after the connection has been set up.
A connection to the chosen server is set up in the background for the selection of a camera. The "Please wait" dialogue (cp. *3.2.8 Please-wait-dialog)* is displayed while this is taking place..
The dialogue for camera selection is displayed with one of two contents depending on whether it was possible to set up a connection to the server or not:

- Connected to server
  The cameras (with name) configured on the server are listed in the dialogue.
- Connection to server not possible
  A numbered list is shown for selection of the cameras. It is not possible to select cameras by name without connection to the server as iGuard® RemoteView does not know the designated names of the cameras on the server.

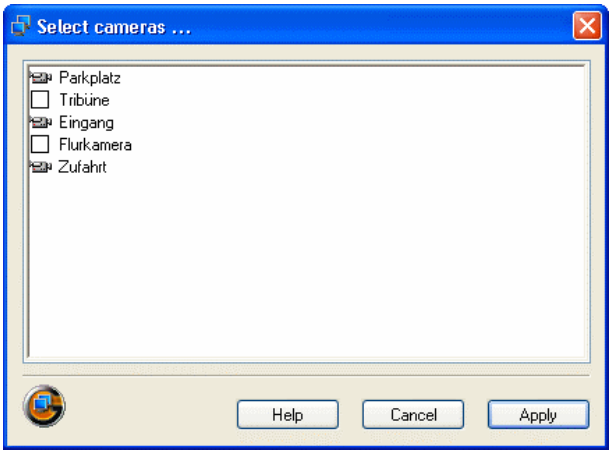

Figure 58: iGuard® RemoteView –virtual guard selected cameras with server connection

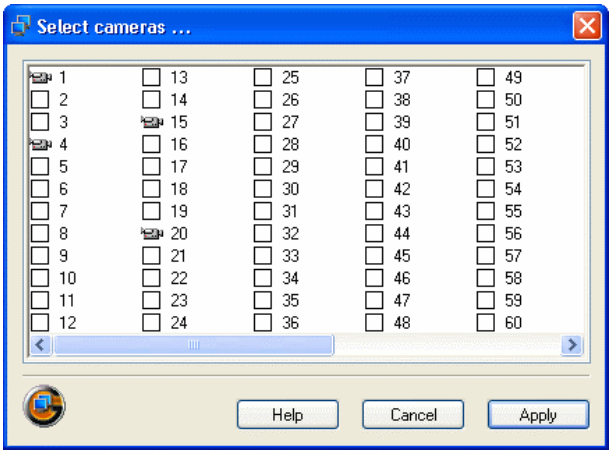

Figure 59: iGuard® RemoteView –virtual guard selected cameras without server connection

The sequence of the connections which is to be used later can be stipulated using the "Move up" or "Move down" buttons.

The "Delete all entries" button deletes all entries of the virtual guard but does not delete any entries in the telephone directory.

The "virtual guard" can be started using the switch of the toolbar, the menu option "Admin - Start virtual guard" or direct using a command line paramter upon calling up iGuard® RemoteView.
The command line parameter is "vguard" or:
iGuardRemoteView.exe –vguard

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The guard is terminated again using the same functions (except command line parameters).

A log-in on the server takes place automatically. As with alarm connecton, the user does not have to log-in manually. The user rights for this automatic log-in, however, are very restricted. Replay and configuration are not possible. In order to reach further rights during an automatic log-in (virtual
guard or alarm connection), the user can log in again via the interface using another user name and its related rights. The virtual guard is interrupted as a result, i.e. during any such action by the user there is no automatic disconnection and reconnection of the connection. The virtual guard has to be restarted, though it continues with the next connection following the new start.

4.6. Start/stop recording

Using iGuard® RemoteView, it is also possible to start or stop the iGuard®*LE* server by remote access, on the condition that you have “Start/Stop“ authorisation as well as “Remote access“ authorisation.
Starting and stopping is carried out in the same way as in iGuard®*LE*, either via the menu *Action → Start/Stop Recording* or by pressing the “Rec“- or “Stop“-buttons.

4.7. Connection protocol

All images that you have received during remote connection from an iGuard®*LE* recording system are stored with the help of this function. It is unimportant whether these images were requested using the preview or the playback function. The image size is 384x288 irrespective of the transmitted image size. All received images are scaled up/down to this size and stored. The quality of the stored images, naturally, cannot be better than that of the received images – the opposite, however, does apply.
The function must be enabled by the user. The directory where these AVI's are to be stored can also be specified by the user (see chapter *4.2 Application configuration*).

The system generates AVI files, the names of which have the following format:

YYYY-MM-DD_hh-mm-ss_XXXXX_YYYY.AVI

Explanation:
YYYY-MM-DD_hh-mm-ss: Date (Year, Month, Day, Hour, Minute, Second) of connection set-up

XXXXX: Name of distant station (from the telephone directory)
YYYY: Serial number

The AVI files can be reproduced using iGuard® Player.
MJPEG compression of the images is carried out by the codec IDSMJPEG.DLL (licence-free) of Imaging Development Systems GmbH.

4.8. AVI export

With iGuard® RemoteView it is possible to carry out AVI export. This type of export is also possible while recording is running This AVI export runs in iGuard® RemoteView according to the same pattern as in the playback mode of iGuard®*LE* (see chapter 3.5.12 Export of AVI-Files).

iGuard® RemoteView sends the command to the iGuard®*LE* server. The server generates film sequences locally in the "Upload" directory which is located in the work directory (usual path: "C:\Programs\intermedia-x\iGuard\Upload“) and transmits these files to iGuard® RemoteView via the network and or ISDN.

NOTE:
Sufficient storage space must be available on the hard disc where the iGuard®*LE* work directory is located (usual path: "C:\Program files\IDS\iGuard“).

Transmission of AVI files, above all via the telephone network, can take a long time (several hours) because they are usually large and cannot be compressed any more. iGuard® RemoteView cannot accept any other inputs from the user during transmission. A progress display notifies the user about the progress of the transmission (see chapter *3.2.8 Please-wait-dialog*)

Figure 60: Menu „Revision“

iGuard®*LE* now generates first of all a database extract (iGuard_Backup.vdb) which contains all entries for the specified period and transfers this file to the iGuard® RemoteView client. The client evaluates the database file and orders gradually from the server the video files belonging to the database entries. The video files are transferred as direct copies of the original. This is why a slightly larger period of time may be saved in the video files than was specified by the user.
The connection to the server can be disconnected once all files have been transmitted. Using iGuard® RemoteView it is then possible to open the database iGuard_Backup.vdb offline (analogue to "Analysis of exchangeable hard disks). All known analysis possibilities are now available.

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If the connection to the server is interrupted while the video data is being copied or if copying is aborted by the user, it is possible to continue transfer of the missing video data at a later date. This is achieved by setting up a connection again to the same iGuard®*LE* Server and switching to playback. Without having to mark any range beforehand in the timeline, data extraction can be started again immediately from the menu *Revision → Data extraction...*. Specify the same directory where the previously aborted data extraction is saved. iGuard® RemoteView now analyses the database "iGuard_Backup.vdb" that is stored there and requests the missing files from the server.

NOTE:
Please note that the missing files can no longer be copied if they have been deleted in the meantime by the server. In addition, a connection with the same server system has to be set up as before.

4.9. Evaluation of video sequences in playback mode

Just as with iGuard®*LE*, it is possible within iGuard® RemoteView to playback and revise video sequences as being in the “playback mode” (cp. *3.5 Playback*) of the server. To do this, you must have the “Playback“ authorisation. If this is the case, you can get to the “playback mode” of iGuard® RemoteView via the menu *Administration → Playback*, or by pressing the button displayed above in the symbol bar. The dialog box which then opens corresponds almost exactly to that in iGuard®*LE*. An important difference is that the export of AVI files is not possible within iGuard® RemoteView. Some functions are also not available for manual reorganisation in the database. In addition, it is possible here to adjust the image quality. You can reach these options via the menu *View*.

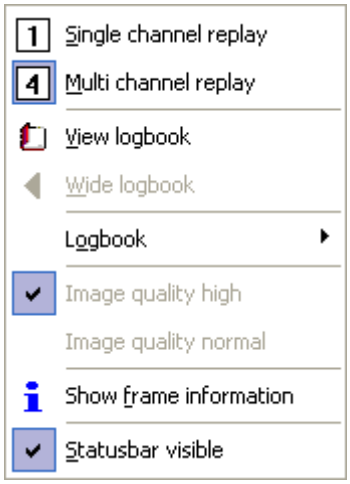

Figure 61: Menu “View” in playback mode

By pressing the button you will leave the “playback mode”.

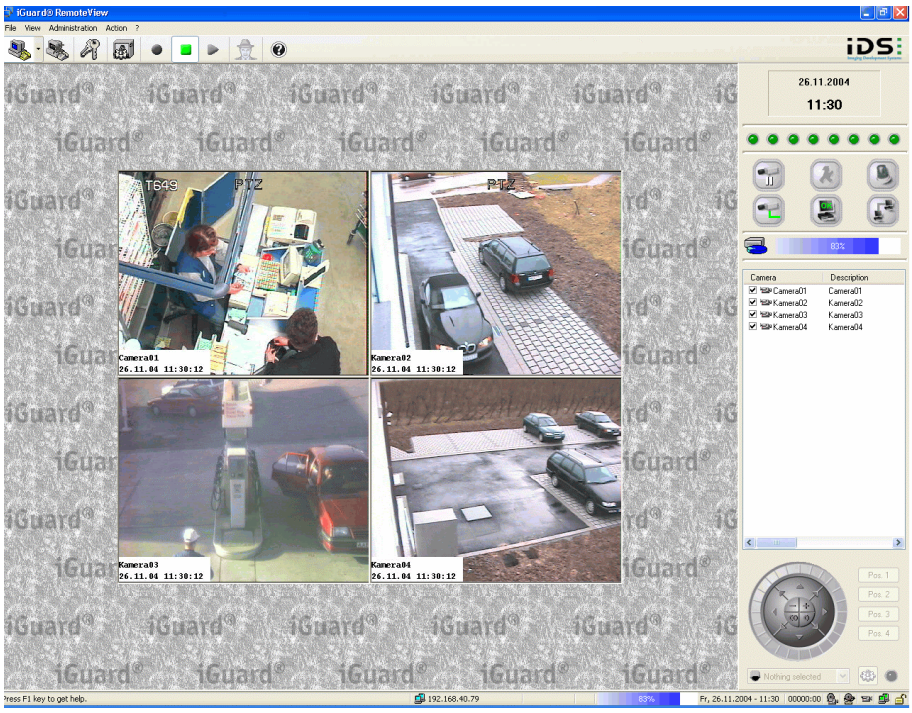

Figure 62: Camera-Preview

You can display up to 4 cameras simultaneously in the preview. You select the cameras by clicking into the list with the same name.
The context-menus of the live images offer further possibilities:

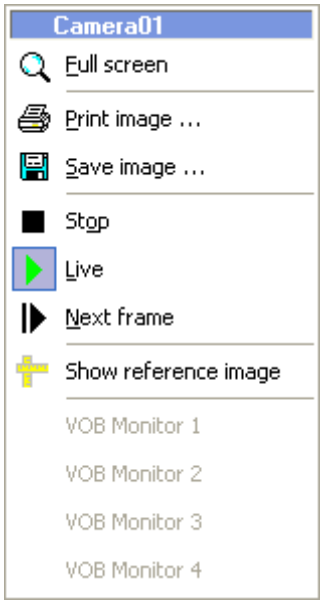

Figure 63: Context-menu of the live image

You can start and stop the image-transmission for each camera or step up as single images. So you can “freeze” a scene, print and save it.

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4.10. Remote control of switch outputs

You can activate the switch outputs, which were configured for this. To do so, you must have the authorisation “remote control“.

Figure 64: Remote control of Switch outputs

You can activate the switch outputs by clicking onto the LED-symbol.
Switch outputs which were configured with „pulse-negative/positive mode“ cannot be deactivated, because the length of the pulse was determined in the configuration and should not be changed manually.
.

4.11. Remote-System-Reboot

With the function ”system reboot“ which you can find in the menu *Action*, you can reboot the system. To do so you need “Administrator” authorisation.
You have to acknowledge 3 safety queries, then the reboot can be executed. That iGuard®*LE* after a reboot starts again automatically, the following conditions must be fulfilled:

- automatic login
- iGuard®*LE* in the Autostart file (the Setup enables this automatically)

Only after the restart a connection to iGuard®*LE* can take place. The restart can take quite 1 minute or more.

NOTE:
If iGuard®*LE* is not configured to begin immediately after a restart with the recording, no recording will take place after reboot. However, the recording can be started via remote-control at any time.

5. iGuard® Player

5.1. Start from iGuard® *LE*

The iGuard® Player can also be started from iGuard® *LE* or iGuard® **RemoteView** using the *File → Execute player program* menu insofar as it is installed in Windows or iGuard directory.

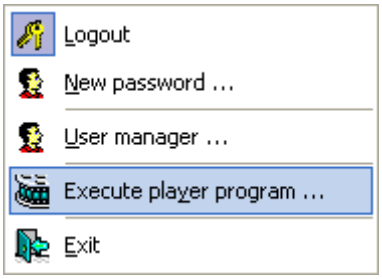

Figure 65: Menu „File“ in iGuard® LE

NOTE:
"Playback" authorisation is required to start the Player.

5.2. Functionality

iGuard® Player is supplied free of charge with iGuard® *LE*. Using the iGuard® Player you can open and playback any AVI and IGD files created from iGuard® *LE* in the MJPEG format. An IGD file is a video sequence recorded by iGuard® *LE*.

After starting the program, iGuard® Player will display the following dialog box:

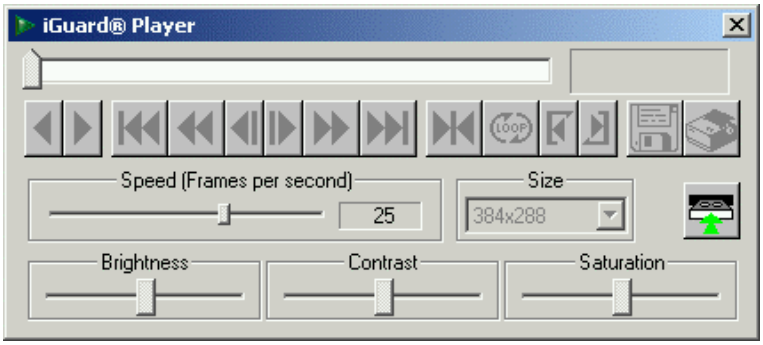

Figure 66: iGuard® Player

The language of the player adjusts to the language of the operating system. Only one button is active when started. This allows a video file to be loaded which is explained in more detail in the following section.

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5.3. Load AVI- or IGD-file

After activating the button the Windows standard dialog box for opening a file will open. Please select the required file as usual and end the dialog using the “Open” button. “Abort” will end the dialog without loading a file. According to the operating system used, the dialog box may vary slightly from the “Open” dialog displayed below.

As an alternative, AVI or IGD files may also be opened and played back simply by using “Drag and Drop“. To do this, you must move the files into the iGuard® Player“ dialog box by pressing the left mouse button and then you must release the mouse button. Finally, the opportunity also exists for easy opening of IGD files by double clicking on the required file.

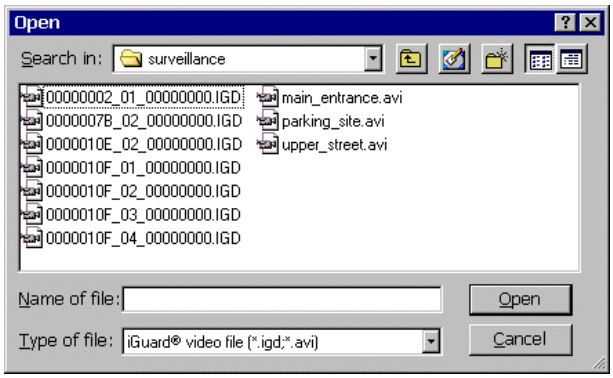

Figure 67: Playing AVI Files

Once the required file has been opened, a further window for the video film is displayed next to the dialog window. This window may be freely moved around the screen independently of the dialog window. As soon as the mouse pointer is placed within the video window it is shown as a small magnifying glass and the iGuard® Player **zoom function** is activated. It is now possible, by operating the left mouse button, to mark an area within the video image, also during playback, and have this displayed to fill the window (Zoom In). After double-clicking the left mouse button within the window the display will return to its original size (Zoom Out).

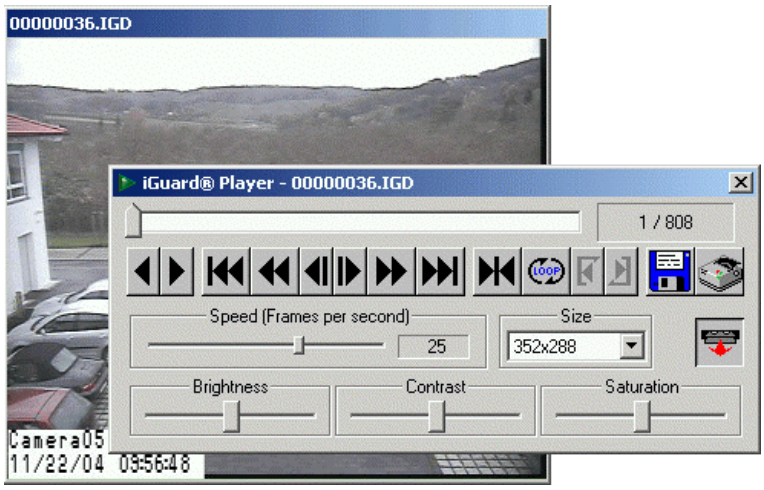

Figure 68: Videosequence-dialog window

5.4. Summary of operating elements

The meanings of the various buttons used to operate the iGuard® Player are contained in the listing below (further details see *Figure 69: iGuard® Player – control elements*). These are for the most part self-explanatory and are based on the keys and symbols of a standard video recorder.

- Rewind video
- Playback video (Play)
- Stop; This symbol appears after activation of the playback field to stop the video. The final picture is frozen.
- Jump to start of video
- Fast rewind
- Individual picture backwards
- Individual picture forwards
- Fast forward
- Jump to end of video
- Go to specified picture. After activating this field a small dialog will open to enter the picture number.
- Start loop mode
- Stop loop mode
- Start of loop
- End of loop
- Save current picture as BMP-file or JPEG-file
- Print current picture
- Open video file
- Close video file

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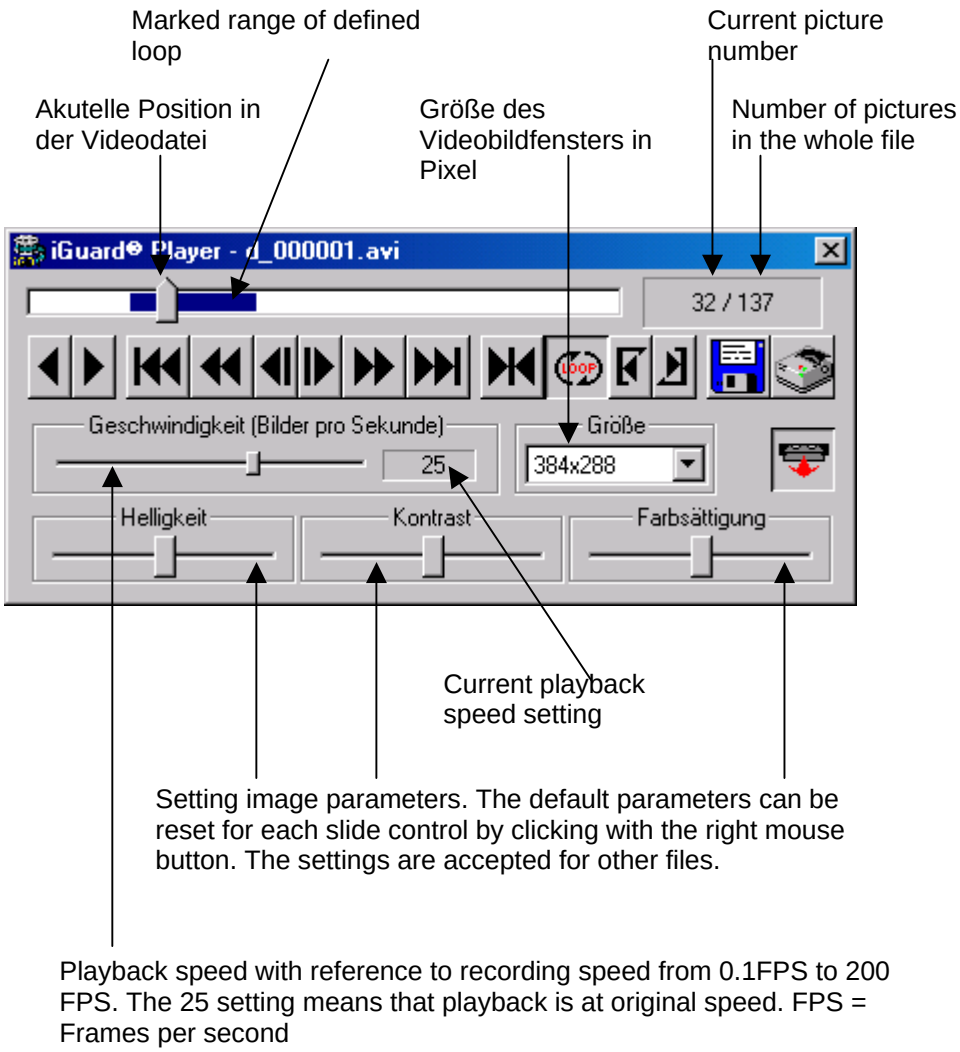

Figure 69: iGuard® Player – control elements

Using the button, it is possible to jump directly to a specified picture. To do this, enter a numerical value between 1 and the number of pictures in the video sequence.

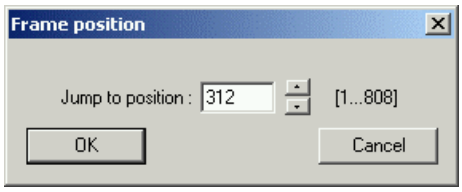

Figure 70: Jump to specified picture

5.5. Video signal window and full-frame mode

The following sizes are available for displaying the video signal window:

96	x	72	Pixel
176	x	132	Pixel
192	x	144	Pixel
320	x	240	Pixel
352	x	240	Pixel
352	x	288	Pixel
384	x	288	Pixel
576	x	432	Pixel
640	x	480	Pixel
704	x	480	Pixel
768	x	576	Pixel

The full-frame mode is activated by pressing the key combination "Ctrl+F". Replay can be controlled using the keyboard in this mode. To quit this mode, press "ESC" or "Ctrl+F" again.

Key combinations in full-frame mode:

Ctrl + F	Switch full-frame mode on, switch full-frame mode off
ESC	Quit full-frame mode
Ctrl + O	Open video file
Arrow key left	One frame back
Arrow key right	One frame forwards
Space (bar)	Play video file, stop replay

5.6. Loop mode

In iGuard® Player you can mark certain periods of time within the sequence and play these in an endless loop. To do this, activate the “LOOP“ button. The two symbols for marking the start and end of the endless loop are then activated. Marking is done by using the mouse to place the cursor on the required start position of the endless loop. The symbol should then be activated. In the next stage the cursor is placed in the same way on the end position. Activating the loop end field will end the procedure.

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