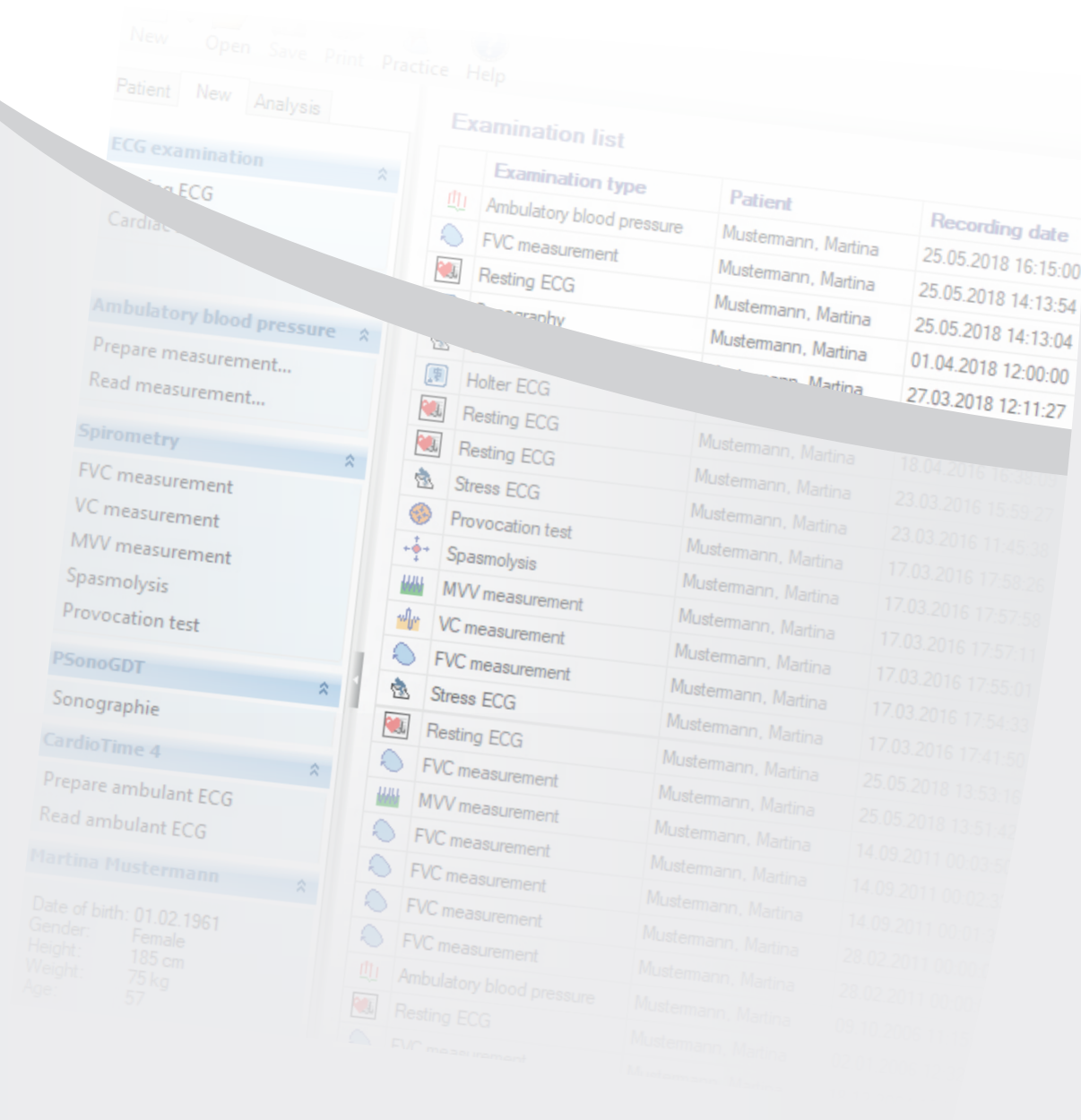


Instructions for Use

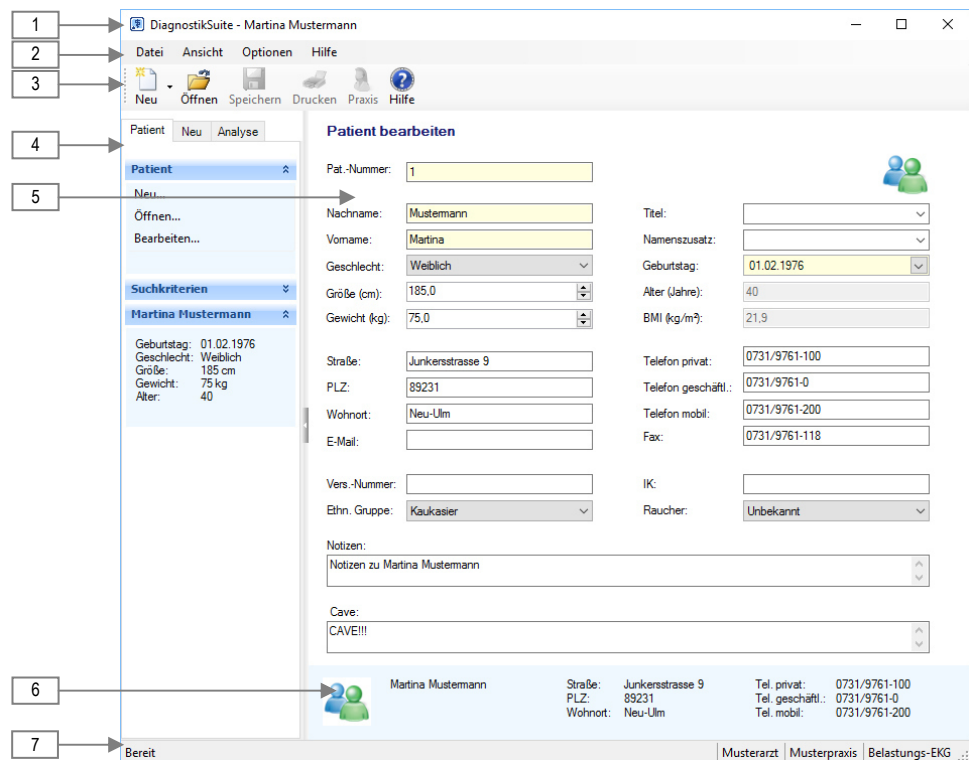
Diagnostik*Suite*



Schematic illustrations

View, symbols and function buttons

View



Operating elements

- | | | | |
|---|---------------------------|---|------------|
| 1 | Title bar | 5 | Work area |
| 2 | Menu bar | 6 | Info bar |
| 3 | Tool bar | 7 | Status bar |
| 4 | Navigation area with tabs | | |

Symbol	Action/command to be performed	Function - button	Shortcut
	Starts a new examination which can be selected from a list	F2	Ctrl + N
	Opens an existing examination for viewing	F3	Ctrl + O
	Saves all changed recording data of the current patient	F4	Ctrl + S
	Prints the selected examination on the selected printer	F5	Ctrl + P
	Switches to practice management software	F12	
	Starts online help	F1	
	End program		Alt + F4

Brief instructions

Brief start-up instructions

Assembly

To operate the examination module, depending on which examination module is available, the cables, interfaces and, if applicable, existing converter are to be connected to the computer in question and their drivers to be installed.

If the type of examination available requires devices, connect these devices to the computer and switch them on.

Software installation

Install the database program on a suitable computer.

Install the *DiagnostikSuite* software on all computers provided and perform licensing.

Select patient

Start the *DiagnostikSuite* and select the "Open" entry in the navigation area. Double-click to select the desired patient.

Record examination

Open the "New" tab in the navigation area and select the desired type of examination. Now the corresponding examination module is loaded and the new examination is started.

Save examination



After completing the new examination, it is filed in the database using the "Save" button.



If there is a connection, you transfer the examination into the index card of the practice management software using the "Practice" button.

Ending the examination



The *DiagnostikSuite* is ended using the "Close" button.

Switch off the examination device(s) and remove all accessories, such as the electrode cable or blood pressure cuffs, from the patient.

Description of symbols



In the instructions for use this symbol indicates "Danger".



In the instructions for use this symbol indicates special information.

Table of contents

These instructions for use are an integral part of the device and are to be observed in conjunction with the instructions for use of the individual examination modules. They should be kept available near the device at all times. Full compliance is a precondition for proper use and correct handling of the device as well as for the safety of the patient and user which is dependent on this.

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DiagnostikSuite

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Brief instructions, symbols Cover

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All information in these instructions for use was carefully checked and researched. However, Zimmer MedizinSysteme does not guarantee (either explicit or implicit) the accuracy and completeness as well as the current status of the information.

Therefore: Liability claims against Zimmer MedizinSysteme relating to damage which is material or immaterial in nature which were caused by the use or non-use of the information presented or by the use of erroneous and incomplete information are fundamentally excluded provided that there is no demonstrable fault of an intentional or grossly negligent nature on the part of Zimmer MedizinSysteme.

Zimmer MedizinSysteme expressly reserves the right to make changes to these instructions for use without a separate notice and to modify, supplement or delete information.

Version information

These instructions for use apply to the basic software of the DiagnostikSuite as of version 1.2.

1. Background medical information

1.1. Indications/Contraindications

Indications, contraindications

The indications and contraindications of the individual types of examinations are described in the instructions for use of the respective examination components.

Take note of the indications, contraindications and side effects listed in the medical literature as well.

1.2. Use

General safety information

The DiagnostikSuite may only be operated in accordance with these instructions for use. All other applications are the responsibility of the operator.

Prior to each use, the user must ascertain the functional safety and proper operating condition of the DiagnostikSuite.

Medical Device Operator Ordinance

For maintenance measures, expansions, readjustments or modifications, the provisions of the German Medical Devices Act (MPG) and the Medical Device Operator Ordinance (MPBetreibV) apply.

Technical safety check and metrological control

According to the Medical Device Operator Ordinance, certain medical devices are to undergo a technical safety check or a metrological control at specified intervals. Details on implementation can be found in the instructions for use of the respective medical device.

According to the Medical Device Operator Ordinance, medical devices may be set up, operated and used only by persons who have the necessary training or knowledge and experience to do so.

2. General description

2.1. Intended use

The DiagnostikSuite is a software package for diagnostic examinations. It offers components for ambulatory blood pressure, spirometry, etc. within a uniform interface. The joint patient and diagnostic database as well as the continuous operation of all applications and communication in data networks facilitate daily work.

The DiagnostikSuite consists of the basic software and loadable components for the individual types of examinations.

The basic software records a diagnostic component in each case, such as ambulatory blood pressure or spirometry.

2.2. Range of services

What is the DiagnostikSuite used for?

The DiagnostikSuite integrates various medical examination components in a flexible diagnostic system. It consists of basic software as well as one or more examination components. The DiagnostikSuite works with Windows™.

Where is the DiagnostikSuite primarily used?

The DiagnostikSuite is primarily intended for use in the physician's office and in the hospital. The use of mobile computers enables use at different locations.

What does the DiagnostikSuite do?

The DiagnostikSuite can be connected to a variety of functional diagnostic devices and operated as a system. These include, for example, spirometers and ambulant blood pressure monitors.

The modular construction makes it possible to satisfy a wide variety of requirements and desires.

What does the basic software do?

- The basic software offers the different examination components a uniform platform.
- The basic software includes an examination component in each case.
- The basic software offers functions and views for the convenient input, selection and storage of patient information.
- The individual components are started via the basic software, for example, to perform a new examination or to analyse an existing examination at a later point.
- Different interfaces ensure connection to practice management systems. The benefits are significantly expanded as a result.
- Without a connection to a practice management system, the DiagnostikSuite assumes patient administration.

What are the other benefits of the DiagnostikSuite?

- The modern user interface with intuitive operation is easy for the user to become familiar with and it minimises learning time.
- The symbols in the graphic user interfaces are self-explanatory.
- The DiagnostikSuite can be used everywhere – in emergencies and also during house calls, because the system can also be operated with a notebook.
- The DiagnostikSuite network-compatible without any restrictions. In a networked office, the examinations can be recorded in the laboratory and opened and viewed again at network workstations.

Overview of operating modes

The DiagnostikSuite provides the user with various operating modes:

- Patient management
- New recording of examinations
- Analysis of examinations

3. Start-up

3.1. System requirements

System requirements

The DiagnostikSuite is a real-time system. Depending on the type of examination, data are sent at high speed from the examination device to the computer, received in real time, processed, filtered and displayed in a user-friendly manner. For this reason, there are high performance requirements on the computer.



To ensure reliable operation, no other programs may be running during a real-time recording. In particular, programs which utilise the computer to capacity, even if only temporarily, must be terminated. The integrity of the computer must be ensured at all times.



The computer must be free of harmful software such as viruses, Trojans, worms, bots and spyware.

Even if the minimum requirements listed below are met, components which do not permit reliable operation may nonetheless be installed.

The DiagnostikSuite uses a database program. Special requirements therefore apply to the computer on which the database program is running.

Minimum requirements for the database program

For the "PostgreSQL" database program, the following minimum requirements apply:

- NTFS file system
- Hard drive with at least 5 GB of free space
- Operating system: Windows™ 7 SP1, 32 and 64 bit, Windows Server 2003, Windows Server 2008 (R1 and R2), Windows Server 2012
- RAM in accordance with the operating system

Minimum requirements for the DiagnostikSuite for desktop PCs for data management and diagnosis

- Operating system: Windows™ 7 SP1, 8, 8.1, 10 each 32 or 64 bit
- CPU: Intel dual core with at least 1.6 GHz or AMD Athlon 64 FX dual core
- RAM: 2 GB
- Graphics: 800 x 600 pixels, 16-bit colours
- Hard drive with more than 5 GB of free space on the system partition
- Mouse, CD-ROM drive as well as USB port for installation

Additional minimum requirements for desktop PCs for entering laboratory data

- RAM: 4 GB
- PCIe graphics card, 1024 x 768 pixels, 24-bit colours
- For real-time applications such as recording resting ECGs or ergometries, a separate graphics card with its own graphics memory is HIGHLY recommended. Integrated graphics solutions are often unsuitable.

Recommended equipment for a desktop computer with data management and diagnostics

- Windows 7™ / 64 Bit
- CPU: Intel dual core architecture or similar with 2 GHz or faster
- 4 GB RAM or more
- PCIe graphics card, 256 MB RAM or more with 3D acceleration
- 22" colour monitor with at least 1280 x 1024 pixel resolution with 32-bit colours
- Internet access

Recommended equipment for desktop PCs for entering data

- CPU: Intel quad core architecture or similar with 3 GHz or faster
- 8 GB RAM or more
- Separate graphics card with its own graphics memory (no integrated graphics solution on the CPU chip or main board)

Requirements for notebooks

The above requirements apply to only a limited extent to notebooks since, because of the structurally-based limitations in the performance of notebooks, no generally valid statement can be made with regard to the minimum requirements. For this reason, each notebook must be individually checked to determine whether it can be used with the DiagnostikSuite.

Note

At the time these instructions for use were printed, the minimum requirements indicated here may, in the worst case, no longer be valid. The respective current system requirements are found in the file "Readme.txt" which is on the installation data storage medium.

The system test described in the section "*Start-up/System test*" gives you an indication whether your computer is suitable for real-time recordings.

3.2. Installation overview

Overview

First the database program must be installed on the intended computer. Then the DiagnostikSuite software is installed.

Note

Prior to installation, you must have established the hardware preconditions for operation. Particular attention should be paid to the physical interfaces to devices, such as a spirometer.



Installation of the DiagnostikSuite on a computer requires technical expertise in computer hardware and software! In the case of a network installation, background knowledge of the structure of PC networks is absolutely necessary. An improper and unprofessional installation can impair the entire hardware and software.

Interfaces

To accept examination data from connected medical devices, the corresponding interfaces are to be provided on the intended computer.

Computers on which only existing examinations are opened, viewed or further analysed do not require additional interfaces.



To guarantee the reliable function of the DiagnostikSuite, only interface converters and interface cards approved by Zimmer MedizinSysteme may be used.

Directories

The DiagnostikSuite and the database program are installed in the following directories by default:

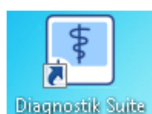
C:\Zimmer\DiagSuite\prog	DiagnostikSuite program
C:\Zimmer\DiagSuite\data	Examination files
C:\Zimmer\DiagSuite\log	Protocol files
C:\Programme\PostgreSQL	Database program

You can change the target directories during the installation. This is particularly useful for the database directories in network installations.

Program group

The installation program establishes the “Zimmer” program group in the Windows™ start menu under “Programs ...”. There you will find the “DiagnostikSuite” application.

Desktop



The installation program creates a link to the DiagnostikSuite on the screen. A double-click on the symbol starts the DiagnostikSuite.

Network

Network environment

- Windows XP or higher is advised as a network system, however Unix or Linux can also be used as a network environment.
- A basic precondition for using the DiagnostikSuite are the minimum conditions indicated in the section “System requirements”. At each station at which an examination is to be opened (doctor’s room), these preconditions must be met.
- The workstation(s) at which examination devices are connected place greater requirements on the hardware than the usual viewing workstations. Therefore this workstation should have the recommended equipment.

Overview of storage locations

Computer	Database	Program files
Server	Local	Local
Computer with connected examination devices	Network server	Local
Remaining computers	Network server	Network server

- The DiagnostikSuite must be installed at each workstation at which it is to be used. Updates will also have to be installed later at these workstations.
- At the workstation at which real-time examinations are recorded, the program files are stored locally.
- All other workstations use program files which are on the network server.
- In the case of a network installation, all data are on a network server so that they are also backed up during a backup.

Terminal server and remote desktop

Use of the DiagnostikSuite in a terminal server or remote desktop network

To use the DiagnostikSuite in a terminal server network, please observe the following:

- The remote connection ("remote desktop") or use in a client window of terminal servers should be configured accordingly.
- The database is installed on the server.
- At viewing workstations at which no medical devices are connected, the DiagnostikSuite runs in the client window of the server, that is, in its working memory. Only inputs & outputs take place at viewing workstations.
- At workstations at which the DiagnostikSuite runs in the client window of a server, the server must meet the minimum requirements for each individual client window.
- At all workstations at which medical devices are connected (for example, Spiro 3, ...), the DiagnostikSuite must always run directly on the local operating system.
- The connection to the practice management program is established at these workstations using GDT or BDT on the file level. The import & export directory is on the server separately according to PCs, that is, each PC has its own communication directories. So that the DiagnostikSuite is launched in the case of a GDT order if the DiagnostikSuite is connected, a small tool can be used which monitors the import directory of the DiagnostikSuite and if a GDT file is present, it launches the application "DiagnostikSuite". If needed, this tool ("ZStarter") can be requested from Zimmer MedizinSysteme.

Server operating systems

In server operating systems (Windows™ Server 2008 R2, 2012), **before installing** the database and the DiagnostikSuite application in the "server manager" of Windows™, activate the following expansion:

- "Desktop display"



Plan on possibly needing to restart the server due to the activation of the expansions listed.



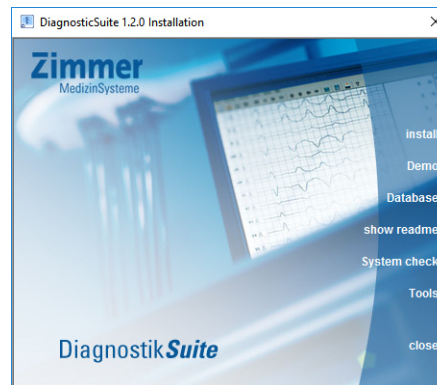
Depending on the graphics resources available, the graphics functionality of the DiagnostikSuite on the server may be limited.



If needed, the installation of a suitable graphics card on the server is recommended.

3.3. Software installation

Teaser



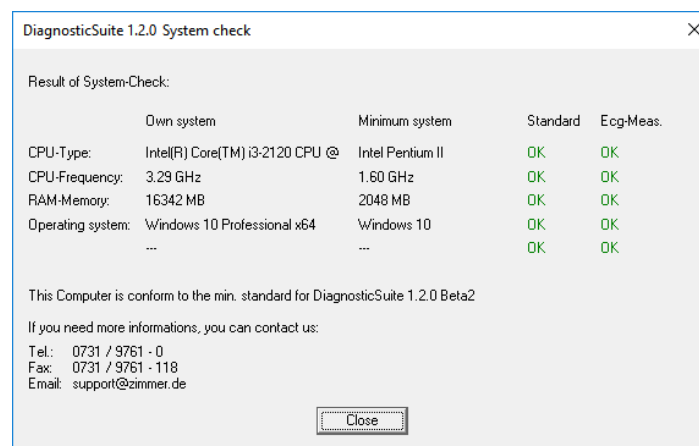
When you insert the installation medium of the DiagnostikSuite, the teaser launches the installation program independently.

Otherwise, launch the application with “Start/execute” from “D:\Autorun.exe”, whereby “D:” is the name of your installation medium.

Functions of the teaser

Install	Installation of the DiagnostikSuite software
Demo	Installation of the DiagnostikSuite with simulation drivers
Database	Installation of the database program
Display Readme	Display information about changes, the start-up of devices and additional information
System test	Check suitability of the computer for real-time examinations
Tools	Install drivers and other tools

3.4. System test



During the **system test**, your computer's features are compared with the minimum requirements and listed in table form.

You will receive a detailed **report** for the microprocessor, RAM and operating system on the **suitability** for the DiagnostikSuite.

For PCs for entering laboratory data, the suitability of the tested PC is shown in the column “ECG measuring station”.

3.5. Database installation

Database

The DiagnostikSuite uses a client-server database as a database. The database program works separately from the DiagnostikSuite.

Note



Rights

- For the installation of the database, the Windows login must take place as local administrator and the installation program of the database must be launched with "Execute as administrator".

Energy-saving mode

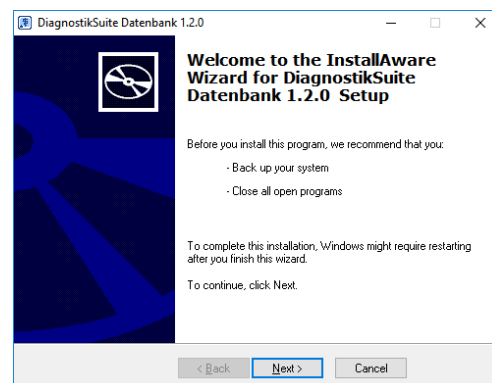
- To enable database clients to have access to the database at all times, the computer on which the database program is running should not switch to energy-saving mode at any time.

Installation location Local/server

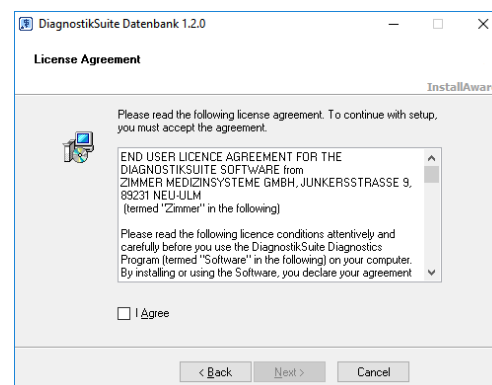
In a **stand-alone installation** the database program is locally installed on the same computer on which the examination devices, such as a spirometer or ambulatory blood pressure monitors, are connected and on which the DiagnostikSuite is installed.

In the case of a **network installation** the database program is installed on a server in the network. The DiagnostikSuite is installed on each PC on which examinations are to be created or viewed. Upon installation of the DiagnostikSuite, the name of the network server is to be communicated to the installation program.

Installation of the database program



Using the "Database" teaser function, the installation program of the database program is launched.



Read the licence terms carefully and indicate your consent.

The database program is installed on the local hard drive of the computer using "Next >".

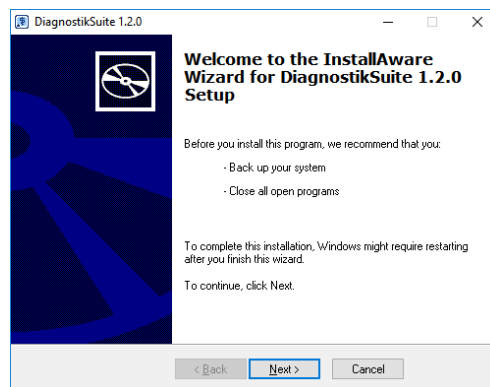
3.6. Stand-alone installation

In a stand-alone installation, the *DiagnostikSuite* program, together with the database program, is installed on a single computer.

Procedure:

- (1) Insert the installation medium and launch the installation program (see “Teaser”).
- (2) Install the database program on the server (see section “Installation of the database program”).
- (3) Perform local installation of the *DiagnostikSuite* using the teaser - as described below.

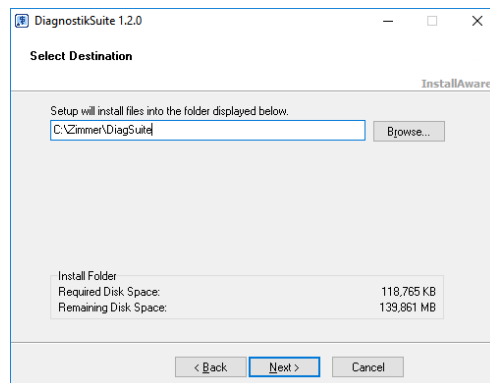
Local installation of the *DiagnostikSuite*



To begin the installation of the *DiagnostikSuite*, select “Install” in the teaser. If you receive a confirmation prompt of the user account control, you can confirm it.

Check the licence terms in the next view and press the “Next >” button.

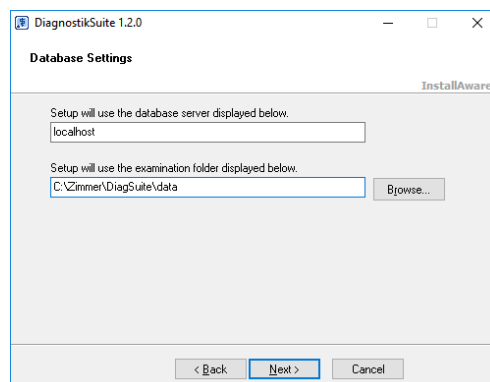
Target directory of the *DiagnostikSuite*



Indicate the target folder in which the *DiagnostikSuite* is to be installed.

In stand-alone installations, the target folder “C:\zimmer\DiagSuite” is used.

Database server and directory of examination files



In the upper field, the network name of the computer on which the database server is running should be indicated. In the case of a stand-alone installation, “localhost” can be entered.

Under this, the directory in which the examination files are written is indicated.

All of the necessary information is now available; the installation begins with “Next >”.

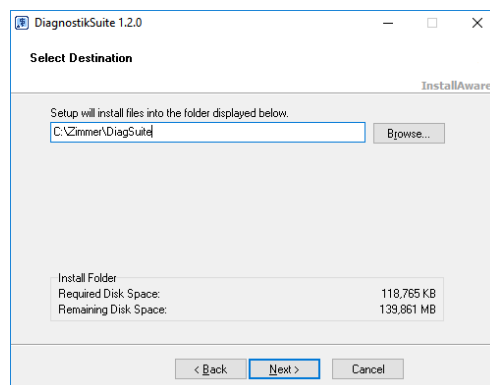
3.7. Network installation

Procedure:

- (1) Install the database program on the server (see section “Installation of the database program”).
- (2) Perform network installation of the DiagnostikSuite at each client using the teaser - as described below.

Start the installation of the DiagnostikSuite in the teaser with “Install”.
Read the licence terms carefully in the next view.

Target directory of the DiagnostikSuite



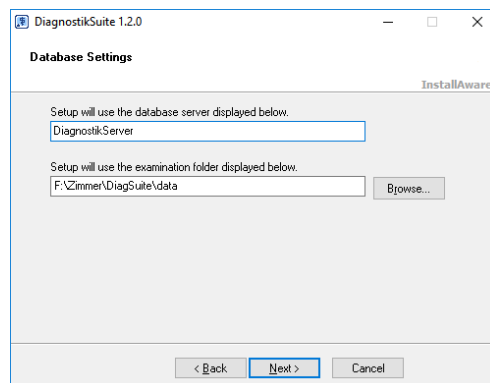
Indicate the target folder in which the DiagnostikSuite is to be installed.

For the computer on which the real-time examinations are performed, a local target directory should be selected: “C:\zimmer\DiagSuite”.

A common directory on the network server can be selected

at all other network clients.

Database server and directory of examination files



In the upper field, the network name of the computer on which the database server is running should be indicated.

Under this, the directory in which the examination files are written is indicated. This directory should be on a file server and used by all network clients.

All of the necessary information is now available; the installation begins with “Next >”.

3.8. Update installation

Update installation



An update is when an older version of the *DiagnostikSuite* is already installed and this version is updated.

- During an update, the examinations created are retained and the database is updated, if necessary. In addition, the *DiagnostikSuite* program is updated and made current.
- During an update, the installation program independently tries to identify and continue using the old directories of the preinstalled version. Check these directories during the installation.
- After an update, licensing does not need to be repeated, provided the update is installed in the original directories.
- No deinstallation may be performed prior to an update, since the installation program incorporates all important presettings as well as the licensing information.
- The update must be performed at each workstation at which the *DiagnostikSuite* is used. It is strongly recommended to create a backup of the data before the update.

Procedure:

- (1) Insert the installation medium and launch the installation program (see "Teaser").
- (2) Perform the stand-alone or network installation described above via the teaser.

3.9. Licensing

Licensing

Following a new installation, you can test out the *DiagnostikSuite* for 30 days. The remaining trial period is displayed when the program is launched starting from the 25th day.

! A maximum of 30 days after the new installation, the *DiagnostikSuite* can still only be used without licensing in a restricted way. It will no longer be possible to perform new examinations. However, existing examinations can still be opened.

You can only use the *DiagnostikSuite* in an unrestricted manner within the scope of licence terms only after licensing. During licensing, the data of the licensee as well as one or more licence keys are entered. Alternatively, licence keys can also be imported from a licence file.

Licensing is performed within the *DiagnostikSuite* software in the menu “Help – Enter licence key ...”.

Licence key entry

Launch the *DiagnostikSuite* and open the “Licence key entry” dialogue box via the menu “Help – Enter licence key”.

License key entry

Adjust license settings

Identification of the licensee

First name:

Surname:

Practice name:

License key entry

License key:

Select and copy license file:

List of licenses

Available licenses:

Product	Edition	Serial number	Type
DiagnostikSuite	Standard	9202920000	Demo
Ambulatory blood pressure	Standard	9203930000	Demo
Spirometry	Standard	9204940000	Demo
ECG	PIE	9205950000	Demo

Identification of the licensee

Field	Contents
First name	Enter the licensee's first name here.
Surname	Enter the licensee's surname here.
Practice name	Enter the name of the practice or facility in this field.

Licence key entry

Field/function	Contents/meaning
Licence key	In this field, multiple licence keys can be entered in succession. The "Read" button verifies the licence key and updates the list of available licences. A new licence key can then be entered. The licence keys consist of several 5-character blocks and have the following format: "XXXXX-XXXXX-XXXXX-XXXXX-XXXXX". The individual blocks are separated by hyphens "-" for better readability. These hyphens must also be entered.
Select and copy the licence file	Using the "Browse" button, a licence file containing one or more licence keys can be selected.

List of licences

In the field "Available licences", the currently available licences are listed. If new licence keys are entered or imported, the list is updated.

The "OK" button accepts and saves the newly available licences.



Ensure that the data of the licensee as well as the licence key are entered correctly. Only then can successful licensing be performed.

3.10. Create a practice and user

General

The DiagnostikSuite can largely be adapted to the needs of the respective facility. This includes the management of multiple practices as well as user management. This section describes how the individual practice or practices and the associated users can be set up in the DiagnostikSuite.

A precondition for performing this administrative task is that the **login** into the DiagnostikSuite is performed as “**Administrator**” or as a correspondingly authorised technician.

1. Launch the DiagnostikSuite.
2. Select in the menu “File – Change user ...”
3. Select the user “Administrator” and enter his or her password.
4. The desired login is performed using the “OK” button.

Note: After an initial installation, the administrator password is “89Remmiz9”. However, this must be changed immediately to prevent possible misuse.



Create practice

1. You can obtain the list of available practices using the menu function “Options – Practice”.
2. The “New” button opens the dialogue box in which a new practice is set up.

3. Enter the desired name of the practice, the address and contact data, the owner as well as information on the business premises and select the practice type with its specialist field. The mandatory field is highlighted in yellow.
4. The new practice is filed in the database using the “Save” button.
5. Repeat the procedure for all practices to be newly created.

Create user

1. You can obtain the list of available users using the menu function “Options – Practice”. Following a new installation, the “Administrator” as well as the “Sample doctor” are preset here. Neither of these users should be deleted.

- The “New” button opens the dialogue box in which a new user is created.

- Enter the desired user name, a password, first name and surname, title, suffix, the lifetime physician number, as well as a signature. Mandatory fields are highlighted in yellow.
- Select the affiliation for one of the user groups
- Select the practice to which the new user belongs.
- Save the new user in the database using the “Save” button.
- Proceed in the same way for each user to be newly created.

Set up login

After creating the new practice or practices and the new user, the desired login type should be checked and adapted in the “Settings” dialogue box via the “Option – Settings – General” menu (see section “Make general settings”, paragraph “Settings – Login”).

If the login should take place as a “**Default user**”, the desired default user is to be selected **at each workstation**.



- Launch the *DiagnostikSuite* and login as “Administrator”.
- Navigate via the menu “Options – Settings – General” in the “Settings” dialogue box and here to the “Login” page.
- Select the default user intended for this workstation and confirm the dialogue box with “Ok”.
- Repeat the process at each workstation.

3.11. Accessing and ending


Launching the DiagnostikSuite

Depending on the operating mode, you can launch the *DiagnostikSuite* in various ways:

1. In stand-alone operation, the *DiagnostikSuite* is accessed via the connection on the desktop.
2. In stand-alone operation, the *DiagnostikSuite* can also be launched via the entry "*All programs/Zimmer/ DiagnostikSuite*" in the start menu.
3. When there is a connection to a practice management program, this is generally automatically launched when Windows™ is launched. After selecting a patient, launch the *DiagnostikSuite*.
In daily practice, this is the default method, since in the practice management software, all patient data are amalgamated and the complete patient file is available.

Ending the DiagnostikSuite

There are three options for ending the *DiagnostikSuite*:

5. End the *DiagnostikSuite* using the "*File – End*" menu function
6. Click on the  symbol in the upper right-hand corner of the program window.
7. Use the button combination "ALT" + "F4".

3.12. Deinstallation

Deinstallation

The installation program also sets up a deinstallation program for the *DiagnostikSuite* in the system control software of the operating system. Be aware that deinstallation is only necessary when you wish to completely remove the *DiagnostikSuite* from your system.



! No deinstallation should be performed in the event of an update.

- To deinstall, click on the "*Start-System control-Deinstall program*" button.
- Select the desired program from the list of installed applications and click on "Remove". The deinstallation program will then begin. Read and follow its instructions.



! The deinstallation program cannot remove any patient data or examinations! If desired, you must manually remove the corresponding files.

3.13. Connection

Note



Connecting the *DiagnostikSuite* to an external practice management system requires a high degree of technical expertise about the hardware and software of a computer and the construction of a network. Because of the complexity of the task, a connection can only be established by experienced technical staff. An improper and unprofessional installation can impair the entire hardware and software.



- The necessary settings in the program connected differ from application to application and depend on the version. These settings must be made by the technical consultant of the program connected or his or her service staff.

Advantages

- The patient data do not need to be re-entered. In a connection to a practice management system, this system sends the patient data – patient number, first name, surname, date of birth – to the *DiagnostikSuite* in order to perform a new recording or open an existing recording.
- All important information can be viewed in the patient's index card. Newly acquired recording data are sent from the *DiagnostikSuite* back to the practice management program and collected here in the patient's index card. This includes information such as type of recording, recording date and time, comments and findings.
- Some practice management systems allow examinations to be easily reopened directly from the index card.

The functions available in each case vary according to the practice management system.

Preconditions

- The linked program has a DDEML interface or alternatively a BDT or GDT interface.
- Each workstation at which examinations are to be created or viewed must meet the corresponding system requirements.

Principle

- If a DDEML interface is used, the messaging system of the Windows operating system is used to exchange information between the programs involved.
- By contrast, the BDT and GDT interface generally uses files for the information transfer. The practice management program writes the patient data in a transfer file. This is imported by the *DiagnostikSuite* and then deleted. After a new examination, the *DiagnostikSuite* exports the results to another transfer file. The practice management program reads the recording results from this file for the index card. The practice management program then deletes the transfer file.

Configuration of the DiagnostikSuite

Within the *DiagnostikSuite*, the practice management which is intended to communicate with the *DiagnostikSuite* is set up under "*Options/Practice management*" in the "**General**" tab. A detailed description of the configuration of *SpiroData* can be found in the section "Menu group options", paragraph "Practice management".

Configuration of the practice management

- The practice management system calls up the *DiagnostikSuite* with "diagsuite.exe".

program

- After recording new examinations, the *DiagnostikSuite* generally needs to be closed in the case of a BDT or GDT connection in order to return to the practice management and transfer the results.

Launch the DiagnostikSuite

- In the case of a local installation, the *DiagnostikSuite* is launched with the command line "C:\Zimmer\DiagSuite\prog\DiagSuite.exe". In a network installation, the network path should be used.
- To prevent side effects, the working directory should be unambiguously defined. It is the directory in which the application is located. For example "C:\Zimmer\DiagSuite\prog"

GDT file during new recording of an examination

Sample data for record type 6301 "Request new examination"

01380006301	017310301021961
014810000209	022310689231 Neu-Ulm
0178315SPIRO_ID	0243107Junkerstrasse 9
014921801.00	01031081
01030001	01031102
0193101Mustermann	0123622176
0163102Martina	011362355

GDT file when saving results

Sample data for record type 6310 "Transmit data from an examination"

01380006310	01031102
014810000325	0123622176
0178316SPIRO_ID	011362355
014921802.00	0173628Deutsche
01030001	0148402SPR02
0193101Mustermann	017620017022006
0163102Martina	0128410FVC
017310301021961	017843217022006
028310689231 89231 Neu-Ulm	0158439160527
0243107Junkerstrasse 9	0288480Normal spirometry

GDT file to display available measurements

Sample data for record type 6311 "Show data from an examination"

01380006311	0163102Martina
014810000183	017310301021961
0178315SPIRO_ID	017620017022006
014921801.00	0148402SPR02
01030001	017843217022006
0193101Mustermann	0158439160527

3.14. Functional test

Prior to initial start-up, perform a function test to check the functionality of the system.

Proceed as follows:

- As described in the previous sections, you assemble the individual components and, if applicable, install necessary drivers as well as the *DiagnostikSuite*. In the case of a connection to a practice management system, you perform this connection accordingly.
- For a new examination, you connect the individual devices to the PC and configure the connection in the *DiagnostikSuite*.
- Launch the *DiagnostikSuite* or, in the case of a connection, the practice management system and select a patient.
- Start the new examination within the *DiagnostikSuite*.
- The *DiagnostikSuite* now establishes communication with the examination device. If this is not connected or is incorrectly configured, the user receives a corresponding error message with the option of correcting the configuration.
- Perform the new examination.
- Check the examination results in the *DiagnostikSuite*.
- Save the new examination.
- Transfer the information to the new examination using the “Practice” button on any practice management software which may be connected. Then end the *DiagnostikSuite*.
- In the index card or in the medical data of the practice management software, check whether the reference to the new examination is present.
- Depending on the functions of the practice management software, you can open the examination directly from the index card or the medical data. Check in the *DiagnostikSuite* whether the desired examination is opened.
- Print out the examination in the *DiagnostikSuite*.



In the event of malfunction or visible damage, do not use the *DiagnostikSuite*. Contact the service department of Zimmer MedizinSysteme.

4. Screen and program structure

4.1. General

Program structure

The interface of the DiagnostikSuite already has a user-friendly and Windows™-compliant design.

Title bar

This displays the program name “DiagnostikSuite” as well as the current patient with recording date and time.

A “*” (memory marker) after the patient name indicates that new data (examination, report or the like) are available.

Menu bar

Here you will find all of the functions of the DiagnostikSuite arranged in clear groups.

Tool bar

The functions were assigned to these buttons for fast access. These functions can be used with a quick click of the mouse.

Navigation area with tabs

The navigation area groups the main operating functions in the “Patient”, “New” and “Analysis” tabs.

Work area

The work area is used to display the patient list, patient data, the real-time information when new examinations are being recorded, examination lists, as well as the analysis of examinations available.

Info bar

The info bar shows you further information about the selected patient or selected examination.

Status bar

The status bar contains all of the important data on the current examination. The data are continuously updated.

4.2. System menu

Functions of the system menu

System or object menus open when the object symbol, the small icon in the left upper corner of the window, is clicked. It can also be accessed using the keyboard by pressing **Alt + space bar** on main windows and **Alt + minus** on secondary windows.

The system menu of the main window includes the following commands:

Restore	Restores the active window with regard to size and position
Move	Moves the application window or the dialogue box by pressing the arrow buttons
Change size	Changes the size of the application window by pressing the arrow buttons
Minimize	Reduces the application window to a symbol
Maximize	Increases the application window so that it fits the entire available space
Close	Closes the application window or the dialogue box

4.3. Program menu

Note

All of the menu functions mentioned here are part of the basic software.

Once an examination component is loaded, the basic software is expanded to include the individual functionality of the examination component:

- In the program menu, in the case of spirometry, for example, there is a “Drug” submenu group available in the “File” menu group and this is used to manage the drugs used in spasmolysis and provocation tests.
- The “View” menu group contains the special views of the examination component.
- In the “Options” menu group, the settings of the examination components can be defined via an individual menu item.

Menu groups

File View Options Help

4.3.1. “File” menu group

File

Functions of the “File” menu group

Patient	This menu item opens a submenu group with functions for patient management.
New	Lists all possible types of examinations in a submenu group. Is used to start a new examination.
Open ...	Opens an existing examination.
Save	Saves new examination data in the database.
Delete ...	Deletes the selected examination from the database.
Allocate...	Allocates examinations to other patients.
Import	Opens a submenu group to import examinations.
Export	Opens a submenu group to export examinations.
Database	Opens a submenu group with database service functions.
Set up page ...	Opens a Windows dialogue box to set up the paper format, the orientation as well as the margins for the selected printer.
Page view ...	Shows the page view of the selected examination on the screen
Print ...	Opens a Windows dialogue box to select and adjust the desired printer as well as to print the selected examination.
Change user ...	Opens the “Login” dialogue box.
End	Ends the DiagnostikSuite.

4.3.1.1. “Patient” submenu group**Patient**

The “**Patient**” menu item contains functions for selecting a patient or managing his or her master data.

New ...	Used to create a new patient.
Open ...	This function lists the patients available in the database. A patient can then be opened from the patient list.
Edit	This function allows the patient’s master data to be displayed and edited.
Delete ...	Opens a sortable and filterable patient list to delete a particular patient.
Allocate...	Allocates patient to other practices. This function is only available to a user who is an “Administrator”.

4.3.1.2. “New” submenu group**New**

The menu item “**New**” contains all examinations which can be newly performed. Depending on which examination components are installed and licensed, the examinations which can be performed vary. The examinations are grouped according to examination component.

4.3.1.3. “Import” submenu group**Import**

The “**Import**” menu item contains functions for importing examinations from files, devices and other programs.

The list of import sources varies depending on which devices are connected.

Import individual examination	Used to import individual examinations.
Spirometer...	Import spirometry examinations from a connected spirometer
CardioSmart...	Import ECG raw data from the “CardioSmart” ECG recorder.

4.3.1.4. “Export” submenu group

Export

The menu item “**Export**” contains functions for exporting examinations in files or reports.

- [Report in PDF format](#) Writes the printout of the opened examination as a PDF file in the export directory.
- [Export individual examination](#) Used to export individual examinations.

4.3.1.5. “Database” submenu group

Database

The “**Database**” menu item contains functions for the administration of the database.

- [Create data backup](#) Used to generate a backup of the data.
- [Read backup file \(restore\)](#) Used to read a backed-up database. In this process, following a query, all existing data are overwritten.
- [Check database](#) This function checks the database for consistency.
- [Delete database](#) Using this function, the database can be completely deleted, following a query. Thereafter any data which may be present will be irreversibly gone. As a result, you will have an empty database.



Note:

The reconciliation of patient data depends on the functionality of the connected program and is therefore not available in every case.

4.3.2. Menu group “View”

View

Using the “**View**” menu group, you can access views of the individual data.

- [Operating elements](#) This menu item opens a submenu group in which the operating elements Menu, Toolbar, Navigation, Info Line and Status Line can be displayed or hidden.
- [Patient list](#) Lists all patients according to selectable search criteria.
- [Examination list](#) Lists all available examinations of the patient currently open or all patients according to selectable search criteria.
- [Practice management](#) If applicable, saves examination data which have not yet been saved, sends information to the practice management on the examination which has just been newly created, and switches to the practice management view.
- [Caution ...](#) Entry and monitoring of caution information on the patient in a dialogue box.

[Note ...](#) Opens a dialogue box to view and enter notes on the patient.

4.3.3. “Options” menu group

Options

In the “**Options**” menu group, dialogue boxes for configuring the *DiagnostikSuite* are summarised.

[Settings ...](#) This menu item opens a dialogue box in which general settings for handling the patient number, the procedure when launching a program and the properties of the symbol bar can be set.

[Print ...](#) The dialogue box for setting the printer as well as the printed contents are opened using this menu item.

[System ...](#) Opens the dialogue box with system properties such as import and export path, database information, device configuration and card reader.

[Practice management ...](#) The connection to practice management software is configured in this dialogue box.

[Medical systems...](#) Opens a dialogue box for selection and configuration directly on medical devices connected to the *DiagnostikSuite*.

[Practice ...](#) This menu item opens a dialogue box in which data from the practice which was just opened can be checked and edited.

If the “Practice ...” menu function with administrative rights (for example, as the user “Administrator”) is opened, the “Practice” dialogue box appears in which the list of practices used is displayed. These practices can be added to, edited, or deleted.

[User ...](#) In the “Edit user” dialogue box, the data of the user who is currently working with *DiagnostikSuite* are displayed. The user data can be modified in this dialogue box, as needed.

If the “User ...” menu function with administrative rights (for example, as the user “Administrator”) is opened, the “User” dialogue box appears in which the list of users created is displayed. These users can be added to, edited, or deleted.

4.3.4. “Help” menu group

Help

The DiagnostikSuite offers you various forms of online help. These are grouped in the “**Help**” menu group.

Contents	Under “Help - Contents”, you can view the DiagnostikSuite help system. You can narrow down your subject area from a clear table of contents and select specific help. Detailed texts provide comprehensive information about the selected help topic.
Component	Here the online help of the examination module currently loaded is accessed. For example, if a spirometry is currently open, the online help on spirometries is launched.
Protocol	Shows the protocol of the most recent sessions with information about the operating system, the PC hardware, device settings with their interfaces, information about the DiagnostikSuite as well as any irregularities which may have occurred.
Zimmer on the web	Shows the webpages of <i>Zimmer MedizinSysteme</i>
Enter licence key	The licensing of the DiagnostikSuite takes place in the “Licence key entry” dialogue box. In addition to the identification of the licensee, with first name, surname and practice name, one or more licence keys are to be entered. Alternatively, the licence keys can also be incorporated from a licence file.
Info about ...	Opens a dialogue box with general program information, such as manufacturing company, copyright, program version, licensing information, etc.

4.4. Context menu

4.4.1. General information about context menus

A context menu is a control element which offers the user various functions for selection for a particular context.

Context menus are launched by guiding the mouse cursor over the element to be edited and then pressing the right mouse button.

The desired function is launched within a context menu using the left mouse button.

Context menu for editable fields

Editable fields have this context menu:

Undo	Undoes the last change.
Cut	Cuts the selected text.
Copy	Copies the selected text into the Windows clipboard.
Paste	Pastes the text stored in the clipboard at the cursor position.
Select all	Selects all of the text within a text field.

4.4.2. Context menus in the “Patient” tab

Context menu in “New patient” view

The editable fields of the “New patient” view use the above context menu.

Context menu in “Patient list” view

Navigation area, “Search criteria” field

The editable “search criteria” fields use the above context menu.

“Patient list”

In the context menu of the examination list, the information which is to be displayed in the examination list can be selected and deselected. This includes the patient number, first name and surname, date of birth, height, weight and address.

Context menu in “Edit patient” view

The editable fields of the “Edit patient” view use the above context menu.

4.4.3. Context menus in the “New” tab

The context menus during the new recording of examinations are adapted to the respective requirements of the individual examination modules. They are described in the instructions for use of the examination modules.

4.4.4. Context menus in the “Analysis” tab

Context menu in “Examination list” view

Navigation area, “Search criteria” field

The editable “search criteria” fields use the above context menu.

“Examination list”

In the context menu of the examination list, the information which is to be displayed in the examination list can be selected and deselected. This includes the examination type, patient’s first name and surname, date of recording, examination status, as well as name of the evaluator and referring physician.

4.5. Toolbar

Functions of the toolbar

Function button

Function



Starts a new examination which can be selected from a list.

Opens an existing examination for viewing.

Saves all changed recording data of the current patient.

Prints the selected examination on the selected printer.

Switches to practice management software.

Launches the online help of the DiagnostikSuite.

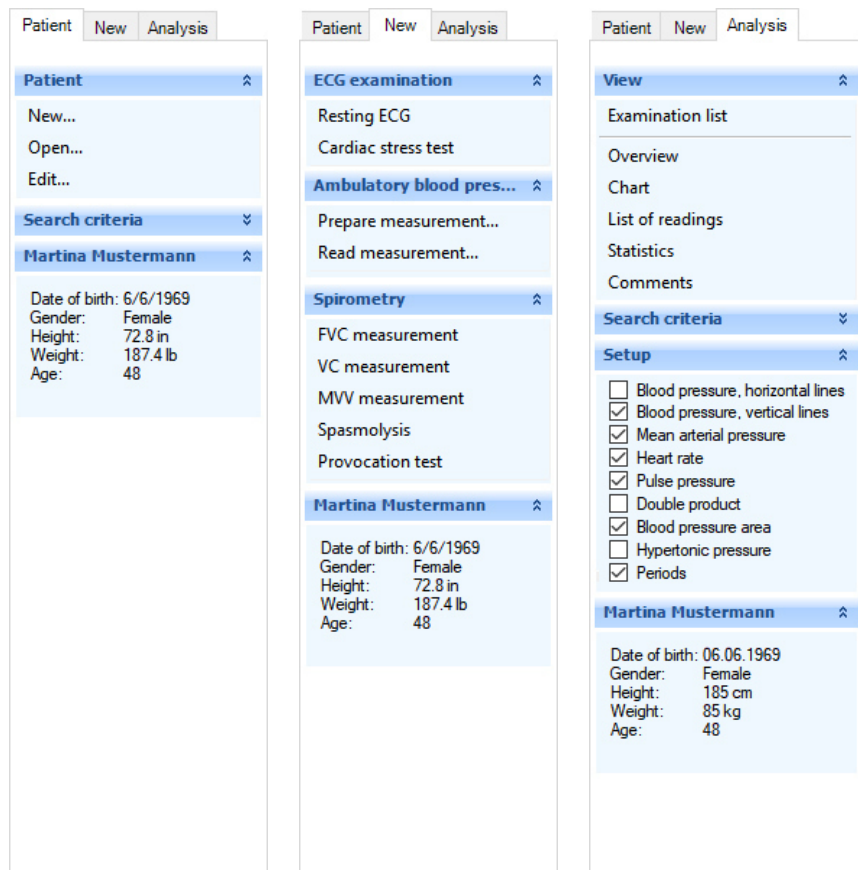
Depending on the functionality of the examination component loaded, this component expands the toolbar.

4.6. Navigation area

The DiagnostikSuite supports the user with a navigation area in which all daily routine tasks can be performed in the three areas “Patient”, “New” and “Analysis”. These areas are assigned to tabs.

- The “**Patient**” tab contains patient administration.
- The “**New**” tab is used to record new examinations.
- The “**Analysis**” tab is used to analyse examinations.

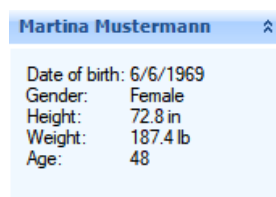
Tab



Panels which group associated functions are available within the tab.

The panels can be opened and closed by a left click on the heading line. Only useful and applicable panels can be opened.

“Patient info” panel



The “Patient info” panel is available in each tab.

The panel displays the patient data of the patient currently open. In addition to the first name and surname, these include the date of birth, sex, height and weight.

4.6.1. “Patient” tab

“Patient” panel

The “**Patient**” panel contains functions for selecting a patient or managing his or her master data.

[New ...](#)

Used to create a new patient.

[Open ...](#)

This function lists the patients available in the database. A patient can then be opened from the patient list.

[Edit...](#)

This function allows the patient’s master data to be displayed and edited.

“Search criteria” panel

In the “**Search criteria**” panel of the “**Patient**” tab, criteria for filtering the patient list can be entered, if needed.

The screenshot shows a panel titled "Search criteria" with a close button. It contains six dropdown menus, each with a label and a selection box currently showing "(all)":

- Pat. number: (all)
- Surname: (all)
- First name: (all)
- Date of birth: (all)
- City: (all)
- Zip Code: (all)

These filter criteria are available to you:

- Patient number
- Surname
- First name
- Date of birth
- City
- Postcode

Search criteria

- Missing characters can be replaced by “*”.
- If the term “**B***” is entered as a search criterion, all entries starting with “**B**” as the first letter will be listed.
- If the term “***or**” is entered as a search criterion, all entries ending with “**or**” will be listed.
- If the term “***ch***” is entered as a search criterion, all entries which include “**ch**” will be listed.
- If a particular date of birth is entered as a search criterion, all patients who were born on that date will be listed.

4.6.2. “New” tab

The “**New**” tab contains functions for performing new examinations. There is an enabled panel for each internally enabled examination component and for each externally connected medical system. The desired examination is launched directly via this panel.

A precondition for performing internal new examinations is that a patient is opened and the desired internal examination component is enabled. A precondition for externally performing new examinations is that a patient is opened, the external medical system is correctly connected and is working properly.

The function of the “**New**” panel is explained here using the example of an ambulatory blood pressure examination as well as by two externally connected medical systems. The entries differ for other types of examinations and medical systems.

“Ambulatory blood pressure” panel

[Prepare measurement](#) This function is used to prepare an ambulatory blood pressure measurement. In this process, the patient data as well as the examination profile are transferred into the ambulatory blood pressure recorder.

[Read measurement](#) This function is used to read an ambulatory blood pressure measurement from the recorder into the computer.

“CardioTime 4” panel

[Prepare ambulant ECG](#) This function is used to prepare an ambulant ECG measurement. In this process, the patient data for a new examination are transferred to the “CardioTime 4” medical system.

[Read ambulant ECG](#) With this function, the “CardioTime 4” medical system is tasked with reading an ambulant ECG measurement into the computer.

“Ultrasound” panel

[Sonography](#) This function is used to prepare a sonography. Depending on the functionality, the patient data are transferred into the work list of an ultrasound device.

4.6.3. “Analysis” tab

The “**Analysis**” tab contains functions for analysing examinations.

“View” panel

If no examination is open, the “**View**” panel only shows the “Examination list”. After an examination has been opened, the panel contains all views of the examination opened.

[Examination list ...](#)

Lists all available examinations of the patient currently open or all patients according to selectable search criteria.

“Search criteria” panel

In the “**Search criteria**” panel of the “**Analysis**” tab, criteria for filtering the examination can be entered, if needed.

These filter criteria are available to you:

- Type of examination
- Current patient/all patients
- Surname
- Recording date from/to
- Status
- Referrer

Search criteria

- Missing characters can be replaced by “*”.
- If the term “**B***” is entered as a search criterion, all entries starting with “**B**” as the first letter will be listed.
- If the term “***or**” is entered as a search criterion, all entries ending with “**or**” will be listed.
- If the term “***ch***” is entered as a search criterion, all entries which include “**ch**” will be listed.
- If a particular date of birth is entered as a search criterion, all patients who were born on that date will be listed.

4.7. Keyboard and mouse operation

Keyboard operation

In addition to the mouse, the DiagnostikSuite can be fully operated using the keyboard.

Function buttons

F1 – Help	Starts online help.
F2 – New	Starts a new examination.
F3 – Open	Opens an existing examination.
F4 – Save	Saves examinations or patient data.
F5 – Print	Prints the selected examination.
F12 – Practice	Switches to practice management software.



Keyboard operation in the main window

Alt	Switches menu mode on and off; selection of the first menu entry.
Arrow keys ←→	Switch to the next menu group.
Arrow keys ↑↓	Switch the menu item within a menu group.
Return	Launches the selected menu item.
Alt-F4	Ends the DiagnostikSuite.
Letters	Each menu item has an underlined letter (e.g. “ <u>F</u> ile”) The associated function is launched with this button.
ESC	Closes a dialogue box or ends an active process.
Space bar	Switches the leads in the sequence Einthoven, Goldberger, Wilson and free choice.

Keyboard operation within dialogue fields

Alt-F4	Closes the dialogue field without changes.
Tab	Changes the group field. The current field is shown with a dotted line.
Arrow keys ←↑→↓	Change the field within a group field.
Return	Activates the function of the selected field.
ESC	Closes the dialogue field without changes.
Space bar	Changes the current setting. (Corresponds to a mouse click).

Keyboard operation in text fields

Arrow keys 	Show the previous/next row of the page displayed.
Image 	Switches to the previous/next page.


Task change in Windows

Alt-Tab	Switches to the next active application.
---------	--

Mouse operation

Apart from entering text, the *DiagnostikSuite* can be completely operated using the mouse.

Left mouse button:

- Place the mouse cursor  over the desired function and push the left mouse button. Launch the function with a mouse click.
- Using list fields (such as the examination list), you can select an entry by double-clicking the left mouse button, without using the “OK” button.
- In list fields, you can select a range of entries by simultaneously holding down the “SHIFT” button and by holding down the “CTRL” button, you can select several different ranges.

Right mouse button:

- Via editable entry fields of the *DiagnostikSuite*, you obtain a context menu with the right mouse button to rapidly access the most important functions.

5. Patient data

5.1. Enter patients

In addition to automatic inclusion of patient data when there is a connection to practice management software, the *DiagnostikSuite*, in stand-alone mode, also offers the option of manually entering patient data.

In the “**Patient**” tab, click on the “New ...” entry within the “**Patient**” panel.



Tip: Check beforehand whether the patient has already been entered (see section “Examination list”). This avoids unnecessary duplicate entries.

“New patient” view

Enter the patient data in the fields provided. Fields for information which must be available are highlighted in colour.

Field name	Contents
Patient number	Normally the patient number is automatically assigned by the <i>DiagnostikSuite</i> . If this is switched off under “ <i>Options-Settings-General</i> ”, enter the patient number manually. Ensure that no patient number is assigned twice since it must be unique for each patient.
Surname	Patient’s surname
First name	Patient’s first name
Sex	Select the sex from the drop-down list.
Title	Patient’s title The title can be entered directly or

	selected from the list. (Example: "Dr. med.")
Suffix	Patient's suffix. The suffix can be entered directly or selected from the list. (Example: "von")
Date of birth	Patient's date of birth in the format "dd.mm.yyyy". The date of birth must be the current date or prior to the current date.
Height	Patient's height. You can enter the numerical value directly or use the control on the right-hand side of the field.
Weight	Patient's weight. You can enter the numerical value directly or use the control on the right-hand side of the field.
Age	The age of the patient is calculated from the date of birth and the current date.
BMI	The body mass index is calculated from height and weight.
Address	Patient's street and building number
Postcode	Patient's postcode. If needed, the country ID can be prefixed.
City	Patient's city
Email	Patient's email address
Home phone	Patient's home phone number
Work phone	Patient's work phone number
Mobile phone	Patient's mobile phone number
Fax	Patient's fax number
Ins. number	Patient's insurance number
IK no.	Insurance company's institutional identification number
Ethn. group	Select the patient's ethnic affiliation from the list
Smoker	Select the patient's smoking habits from the drop-down list.
Notes	Notes on the patient can be entered in this free text field.
Caution	Caution information can be stored in this field.

After entering the patient data, the "Save" button is used to save the information in the database.

Plausibility check



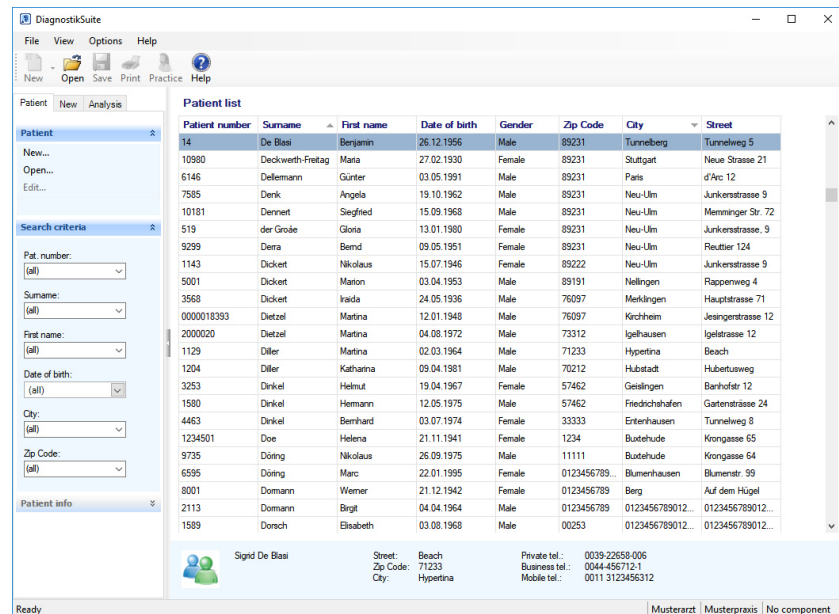
When patient data are saved, they are checked with regard to plausibility. If necessary data are missing or if these are not plausible, saving will not be performed. The implausible data will instead be marked.

5.2. List patients

Patient list

To search for a patient or check whether a particular patient has already been entered or also to open a patient, use the “List patients” function.

In the “**Patient**” tab, click on the “Open ...” entry within the “**Patient**” panel. You will then obtain the patient list.



Refine search by entering search criteria

To restrict the patient list, there are various options available in the “**Search criteria**” panel.

After entering new search criteria, the search is triggered using the “Return” button and the patient list is updated.

Sort list

The patient list can be sorted by a left click on one of the column headings. Another left click on the column heading alternates the sorting sequence between ascending and descending.

Select display information


<input checked="" type="checkbox"/>	Patient number
<input checked="" type="checkbox"/>	Surname
<input checked="" type="checkbox"/>	First name
<input checked="" type="checkbox"/>	Date of birth
<input checked="" type="checkbox"/>	Gender
<input type="checkbox"/>	Height
<input type="checkbox"/>	Weight
<input checked="" type="checkbox"/>	Zip Code
<input checked="" type="checkbox"/>	City
<input checked="" type="checkbox"/>	Street

In the context menu, you can select the information displayed. In addition to the first name and surname, this includes the date of birth, sex, height, weight and address. To do this, click next to the desired entry.

These settings are saved and are thus available the next time the *DiagnostikSuite* is launched.

Retrieve advanced patient information

Select a patient in the patient list with a left click. By doing this, you obtain advanced patient data in the info line - without opening the patient.

	Martina Mustermann	Street: Junkersstrasse 9	Private tel.: 0731/9761-100
		Zip Code: 89231	Business tel.: 0731/9761-0
		City: Neu-Ulm	Mobile tel.: 0731/9761-200

Select patient

Double-clicking on a patient in the list of patients selects this patient for further processing and loads his or her patient data.

5.3. Open patient

Open patient

- To perform a new examination for a patient, it is necessary for this patient to be opened.
- If connected to a practice management system, the *DiagnostikSuite* receives the data from this practice management on the patient who is then opened in the *DiagnostikSuite*.
- In stand-alone mode, that is, if there is no connection, patients are opened via the patient list.
- The patient list is accessed the **"Patient"** tab via the "Open ..." entry within the **"Patient"** panel. You will then obtain the patient list.

Now select the desired patient in the patient list. A double click on the list entry opens the patient.

Display the opened patient

The data on the opened patient are displayed in the **"Patient info"** panel.

5.4. Change patient data

Edit patient

To display and change the data of a patient who has been entered, his or her data must be loaded. If this is not the case, this is performed via the **"Patient"**, via "Open ..." and via the patient list (see section "Open patient").

In the **"Patient"** tab, the data of the loaded patient are displayed via the entry "Edit ..." within the **"Patient"** panel. There the patient data can be changed.

Edit patient

Patient number: 1

Surname: Mustermann Title:

First name: Martina Suffix:

Gender: Female Date of birth: 01.02.1961

Size (cm): 185.0 Age (Years): 57

Weight (kg): 75.0 BMI (kg/m²): 21.9

Street: Junkersstrasse 9 Home phone: 0731/9761-100

Zip Code: 89231 Business phone: 0731/9761-0

City: Neu-Ulm Mobile: 0731/9761-200

Email: Fax: 0731/9761-118

Ins. number: IK:

Ethnic group: Caucasian Smoker: No

Notes:
Remarks of the patient

Caution:
CAVE!!!

Save changed patient data



Use the "Save" button in the toolbar to permanently save changes in the database.

Plausibility check

When patient data are saved, they are checked with regard to plausibility. If necessary data are missing or if these are not plausible, saving will not be performed. The implausible data will instead be marked.

Example:

Date of birth: 01.02.2961

Correct or amend your entries and then save the patient data.

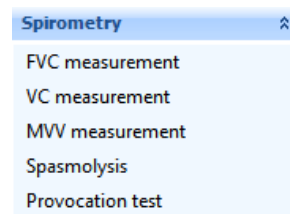
6. Perform new examination

- New examinations are launched in the “**New**” tab.
- A precondition for performing new examinations is that a patient is opened and the desired examination component is enabled. (See section “Open patient”)
- For each examination component enabled, there is a panel enabled in the “**New**” tab. The desired examination is launched directly via this panel.

6.1. Perform a new measurement

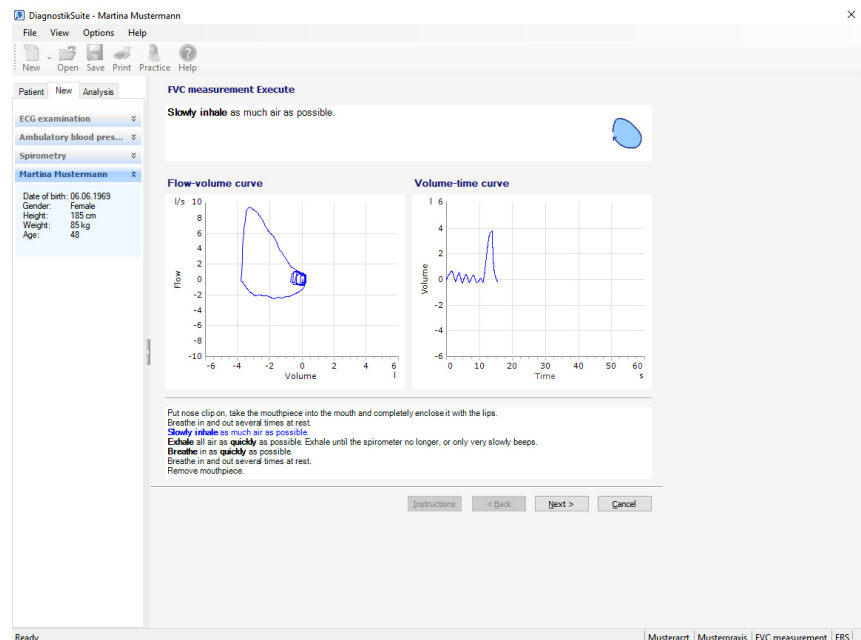
Perform new examination

As an example, the recording of a new FVC spirometry is described below.



Open the “**New**” tab in the navigation area. There you will find the “**Spirometry**” panel.

Click on the “FVC measurement” entry. The basic software will then load the spirometry component and directly launch the spirometry assistant for recording a new FVC measurement.



- After the new examination is completed, it is saved in the database using the “Save” button.
- If an examination was ended, the display changes and an overview of the examination is displayed.

7. Analyse examinations

Examinations are viewed, checked and diagnosed in the “**Analysis**” tab.

7.1. List examinations

Examination list

To search for a particular examination and check whether it was already performed or also to open an examination, use the “Examination list” function.

In the “**Analysis**” tab, click on the “Examination list” entry within the “**View**” panel. This will provide you with a list of available examinations.

The screenshot shows the DiagnostikSuite application window. The 'View' panel on the left has 'Examination list' selected. The main area displays a table of examinations with columns: Examination type, Patient, Recording date, and Status. The table lists various tests like Provocation test, Ambulatory blood pressure, FVC measurement, and Resting ECG for different patients. Below the table, a summary for the selected 'Ambulatory blood pressure' test is shown, including recording date, blood pressure, and patient details.

Examination type	Patient	Recording date	Status
Provocation test	Mann, Manfred	02.09.2016 13:36:03	Recording finished
Ambulatory blood pre...	Kast, Tomas	02.09.2016 12:35:00	Recording finished
FVC measurement	Kast, Tomas	02.09.2016 13:35:44	Recording finished
Resting ECG	Kast, Tomas	08.12.2016 08:40:26	Recording finished
Resting ECG	Kast, Tomas	08.12.2016 08:18:15	Recording finished
Stress ECG	Kind 1/2 Jahr, Baby	14.08.2017 11:11:26	Recording finished
Ambulatory blood pre...	SpiroPC, SNr. 700002	24.09.2013 11:00:00	Recording finished
Resting ECG	Stetter, Hannelore	06.07.2016 12:01:52	Recording finished
Ambulatory blood pre...	Stumpf, Günter	04.11.2009 08:51:00	Recording finished
FVC measurement	Stumpf, Günter	28.11.2012 08:01:46	Recording finished
Resting ECG	Stumpf, Günter	30.11.2017 10:08:09	Recording finished
Resting ECG	Test, Tester	30.11.2017 10:10:21	Recording finished
Resting ECG	Teufel, Hans	13.11.2017 10:29:30	Recording finished
Resting ECG	Teufel, Hans	13.11.2017 10:28:39	Recording finished
Ambulatory blood pre...	Unbekannter Patient, ...	12.10.2012 13:45:00	Recording finished
Resting ECG	Unbekannter Patient, ...	27.05.2016 11:47:34	Diagnosed
Ambulatory blood pre...	Walger, Gloria	26.07.2016 09:50:00	Recording finished
Stress ECG	Walger, Gloria	27.05.2016 08:44:54	Recording finished
Resting ECG	Walger, Gloria	09.12.2016 07:52:19	Recording finished
Resting ECG	Walger, Gloria	29.03.2016 16:48:22	Recording finished
Ambulatory blood pre...	Walger, Gloria	26.07.2016 09:45:00	Recording finished
Resting ECG	Walger, Gloria	29.03.2016 17:02:00	Recording finished
FVC measurement	Walger, Gloria	21.10.2016 09:45:01	Recording finished
FVC measurement	Walger, Gloria	21.10.2016 09:44:44	Recording finished
FVC measurement	Werner, Thomas	21.10.2016 09:43:36	Recording finished
FVC measurement	Zimmermann, Emilie	21.10.2016 09:41:01	Recording finished
Spasmolysis	Zwick, Elisabeth	30.05.2016 09:48:47	Recording finished

Summary for Ambulatory blood pressure:
 Recording date: 02.09.2016 12:35:00
 Blood pressure: 128 / 77 mmHg
 Patient: Kast, Tomas
 HR: 81 1/min

Refine search by entering search criteria

To restrict the examination list, there are various options available in the “**Search criteria**” panel.

After entering new search criteria, the search is triggered using the “Return” button and the examination list is updated.

Sort list

The examination list can be sorted by a left click on one of the column headings. Another left click on the column heading alternates the sorting sequence between ascending and descending.

Select display information


<input checked="" type="checkbox"/>	Examination type
<input checked="" type="checkbox"/>	Patient
<input checked="" type="checkbox"/>	Recording date
<input checked="" type="checkbox"/>	Status
<input type="checkbox"/>	Evaluator
<input type="checkbox"/>	Referrer

In the context menu, you can select the information displayed. To do this, click next to the desired entry.

These settings are saved and are thus available the next time the *DiagnostikSuite* is launched.

Retrieve advanced examination information

Select an examination in the examination list with a left click. You will receive this advanced information about the selected examination in the info line – without opening the examination.

	Ambulatory blood pressure	Recording date: 25.05.2018 13:00:00	Patient: Mustermann, Martina
		Blood pressure: 130 / 78 mmHg	HR: 82 1/min

7.2. Open examination

Open examination

To analyse an examination, it is necessary for the examination to be opened.

If connected to a practice management system, the *DiagnostikSuite* receives the data from this practice management on the desired examination which is then opened in the *DiagnostikSuite*.

In stand-alone mode, that is, if there is no connection, examinations are opened via the examination list.


The examination list is accessed in the “**Analysis**” tab via the “Examination list” entry within the “**View**” panel.

Select examination

Double-clicking on an examination in the list of examinations selects this examination for further processing and loads the data of the patient in question.

Display the opened examination

In the title bar of the *DiagnostikSuite*, you will find the recording date and recording time of the opened examination, in addition to the patient name.

 DiagnostikSuite - Martina Mustermann 13.03.2018 08:55:37

7.3. Analyse examination details

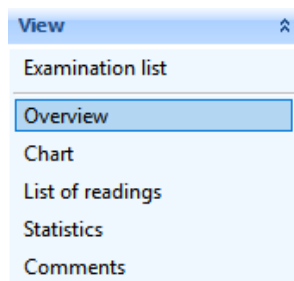
Different views of data are available in the “View” panel of the “Analysis” tab for in-depth analysis of examinations.

These various views depend on the respective type of examination. The individual views will therefore vary depending on the type of examination.

A precondition for analysing examinations is that the examination is opened and the desired examination component is enabled. (See section “Open examination”)

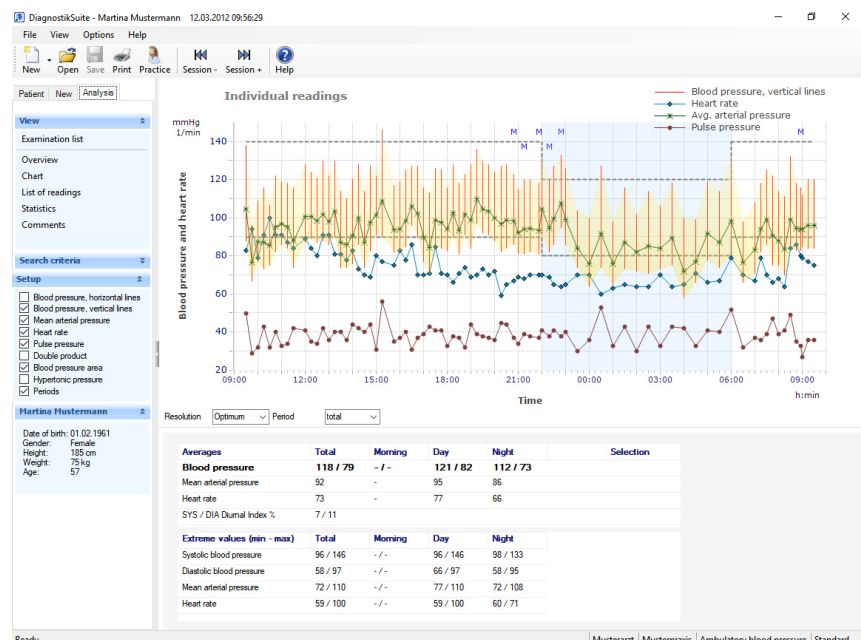
As an example, the views for an ambulatory blood pressure examination are described below.

Select examination views

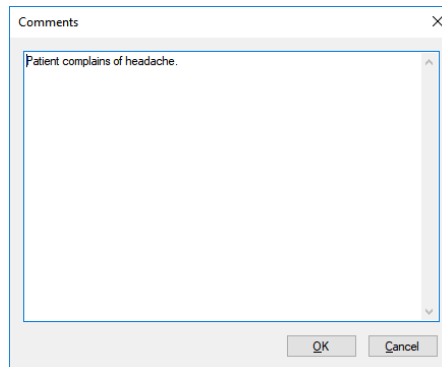


Open the “Analysis” tab in the navigation area. There you will find the “View” panel.

Click on the “Overview” entry. This will launch the “Overview” view for further analysis of the examination.



Add comment to examination



A dialogue box can be opened using the “View - Comments” menu function in which comments on the measurement currently being analysed can be entered.

Save examination



After the new examination is completed, it is saved in the database using the “Save” button.

7.4. Print an examination

There are various configuration options available for printing out examinations.

Preparation

1. Under “Options – Print” in the “General” area, use the “Printer settings” button to specify the printer which is to be used to print out the examinations. Other printer-dependent properties can be accessed using the “Properties” button. Here, among others, the paper source, paper size and its orientation are specified.
2. On the same page, you configure whether the advanced patient data as well as the name of the physician and the facility are to also be printed.
3. In the other pages of the “Print setup” dialogue box, you individually compile the information which you require when printing out your examinations. The contents vary depending on the type of examination.
4. As needed, a Windows dialogue box can be opened via the “File – Set up page” menu function in which the margins can be adjusted, in addition to the paper size and the orientation.
5. As desired, a preview of the paper printout can be opened using the “File – Page preview” menu function. The printout can be checked, scaled in various enlargements, and examined page by page.



Tip: Since the printer settings are saved in the *DiagnostikSuite*, you do not need to set the settings described here again with each printout.

Print examination



Using the “Print” button in the tool bar, the examination which is currently open is printed out.

If no examination is open, the “Print” button is locked.

8. Practice management systems

In general, medical systems such as the *DiagnostikSuite* are connected to practice management software (see section "Connection"), since patients and all additional information are centrally managed there. This section describes the user steps for performing, saving and opening new examinations.

Note:

- The patient management system is the practice management software.
- In the *DiagnostikSuite*, data important for the diagnosis, such as "Height", can be subsequently entered in the "Edit patient" view.
- Other patients should be selected in the practice management software.
- Depending on the practice management software, medical devices such as the *DiagnostikSuite* need to be terminated after creating and saving a new examination or displaying an examination.

8.1. Order: Perform new examination



- (1) The desired patient is selected in the practice management software.
- (2) If the practice management software offers this option, select the type of examination and launch the *DiagnostikSuite* with it. Otherwise launch the *DiagnostikSuite* directly and select the new type of examination to be created in a dialogue box there.
- (3) Perform the examination.
- (4) Save the examination in the *DiagnostikSuite*.

8.2. Order: Save examination



- (1) After the examination has been performed and saved in the *DiagnostikSuite*, the examination is transferred to the practice management using the "Practice" button and saved there. In this process, the recording date, recording time, type of examination as well as important examination results are filed in the index card of the practice management software.

8.3. Order: Display examination



- (1) The desired patient is selected in the practice management software. Now open the patient's index card.
- (2) If the practice management software offers this option, select the examination and call up the *DiagnostikSuite* to display the examination. Otherwise start the *DiagnostikSuite* directly and within the *DiagnostikSuite*, select the desired examination.

9. Settings and configuration

Window

The user can individually adjust the size and arrangement of windows. These settings are saved and are thus available the next time the *DiagnostikSuite* is launched.

Configuration dialogue boxes – Structure and navigation

The *DiagnostikSuite* settings are made within configuration dialogue boxes, among others.

The individual configuration dialogue boxes are opened via the “Options” menu group.

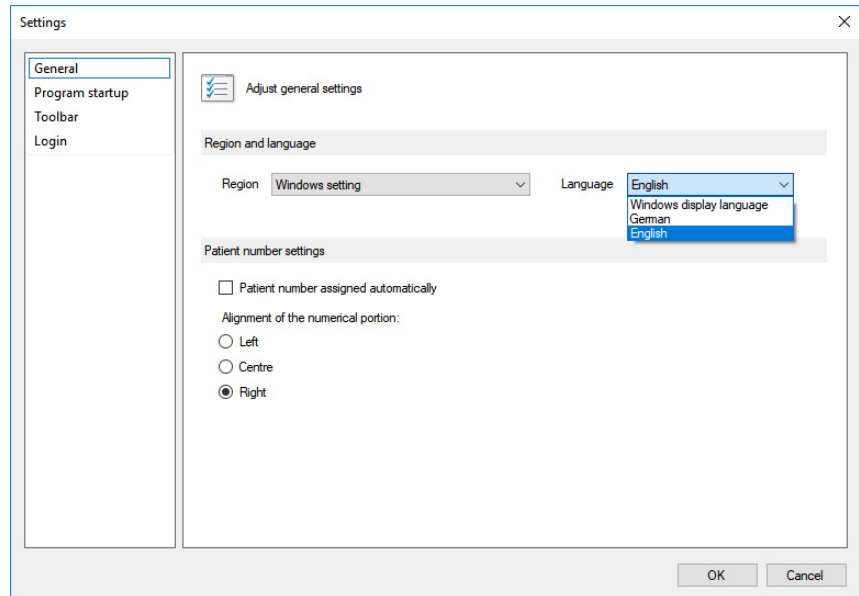
Structure and navigation

- In configuration dialogue boxes, the main navigation takes place in a navigation bar which is located on the left-hand side of the dialogue box and is operated via a menu.
- The actual settings are made in the window on the right, next to the menu.
- The content in the right-hand window changes, depending on the area or menu item selected on the left-hand side.
- Some dialogue boxes (such as “Settings” and “Print setup”, for example) are divided into a general part “General” which applies to the entire *DiagnostikSuite* and also into one or more examination-dependent parts.
- The examination-dependent areas expand the general part and are described in the instructions for use of the individual examination components.
- Settings made are maintained after the program is restarted.

9.1. Make general settings

Settings – General

Setting region and language



Region

Define here which regional settings are to be used. The Windows settings or the settings of a particular region can be selected, if desired. The regional settings include the date, time and number format.

Language

Here, the display language which is to be used is defined. The display language of windows or alternatively a particular language can be used, if desired.

Patient number settings

If there is no connection, the *DiagnostikSuite* is operated in stand-alone mode. Here you may choose to manually assign the patient number when entering new patients or have it assigned automatically.



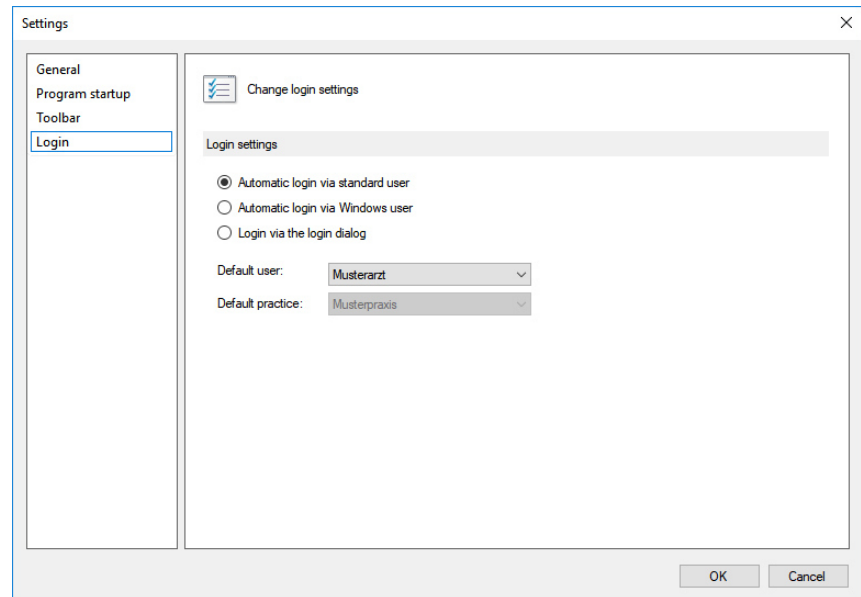
Since the patient number uniquely identifies the patient, you should have the patient number automatically assigned by the *DiagnostikSuite* for reasons of certainty. This helps to avoid conflicts.

If the patient number contains digits or the like, the position of the numeric portion within the patient number can be defined. If the patient number is automatically assigned, this numeric portion is incremented.

Settings – Login

The DiagnostikSuite utilises user management which can be used to protect data or for documentation. In the “Settings - Login” dialogue box, you define the type of user login.

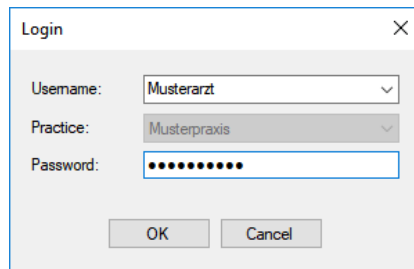
The login settings can only change users who belong to the “Technician” user group. This includes, for example, the “Administrator”.



Login settings

Settings	Description
Automatic login via standard user	The standard user is used as the user. A login dialogue box does not appear.
Automatic login via Windows user	The user logged in in Windows is used as the user. A precondition for this is that the Windows user is created with the same name in the DiagnostikSuite as the user. If the Windows user is not known to the DiagnostikSuite, the login dialogue box appears.
Login via the login dialogue box	Each time the DiagnostikSuite is started, a dialogue box appears to log into the DiagnostikSuite.
Default user	List for selecting the default user
Default practice	Practice information about the selected default user

Login

A screenshot of a 'Login' dialog box. It has a title bar with 'Login' and a close button. Inside, there are three fields: 'Username:' with a dropdown menu showing 'Musterarzt', 'Practice:' with a dropdown menu showing 'Musterpraxis', and 'Password:' with a text field containing ten dots. At the bottom, there are 'OK' and 'Cancel' buttons.

If manual login is configured, this dialogue box appears when *DiagnostikSuite* is started. A precondition for a successful login is that the user exists and the password entered is identical to the password stored.

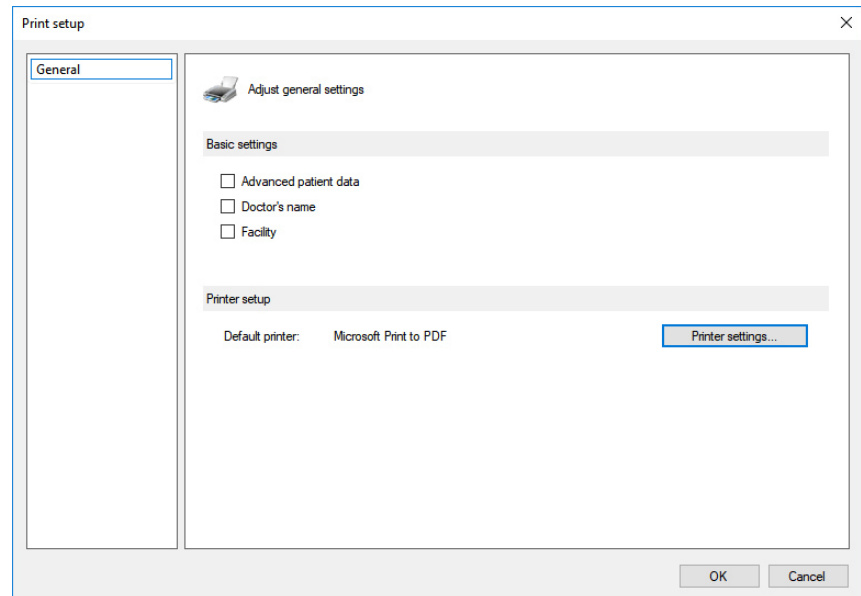
Note:

- New users are created using the menu function “Options - User” in the “User” dialogue box.
- Only correspondingly authorised users can create new users. These include members of the “Technician” user group such as, for example, the “Administrator” user.
- Even without restarting the *DiagnostikSuite*, the menu function “File - Change user” can be used to switch to a user of the “Technician” group in order to then create new users in the “Options - User” menu or delete other users.
- Information about the practice currently in use can be checked and corrected using the “Options - Practice” menu function in the “Edit practice” dialogue box.
- Authorised users can create new practices and also edit or delete existing practices in the “Options – Practice” menu.

9.2. Set print options

Print setup – General

The printer is selected and the printout is designed in this configuration dialogue box.



Basic settings

Define which basic information should be included on the printout:

Selection	Printout
Advanced patient data	Street, postcode, city and telephone numbers
Physician name	Name of physician
Facility	Name of facility or medical practice

Printer settings

With the “*Printer settings*” button, a dialogue box opens in which the printer can be selected and additional settings can be made.

Note:

In the case of an opened examination, one or more other dialogue boxes are available in which the information to be printed is defined. This information varies, depending on the type of examination.

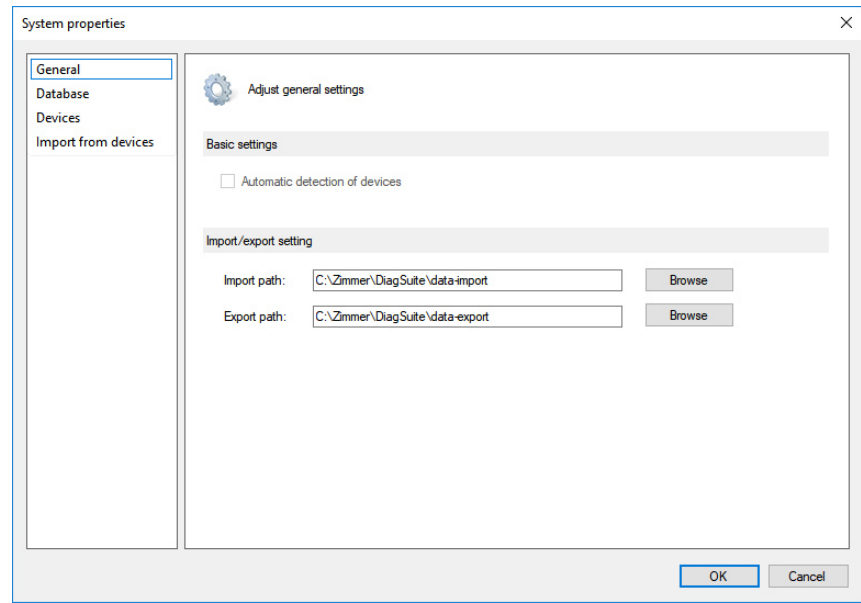
9.3. Define system properties



System properties – General

Make changes to the system properties only after consulting your service partner.

In this dialogue box, general system properties are defined.



Import/export settings

Enter a path here which is to be used for import and export operations in the event of service.

System properties – Database

The DiagnostikSuite uses database software to save patient data and general information. The examination data are not saved via the database software but rather in separate files.

The screenshot shows a window titled 'System properties' with a close button (X) in the top right corner. On the left is a sidebar with four tabs: 'General', 'Database' (selected), 'Devices', and 'Import from devices'. The main area is titled 'Change database settings' with a gear icon. It contains three sections: 'Database selection' with a 'Type:' dropdown menu set to 'Postgre'; 'Database settings' with a 'Server:' text field containing 'localhost'; and 'Examination settings' with a 'Path:' text field containing 'D:\Zimmer\DiagSuite\data' and a 'Browse' button. At the bottom right are 'OK' and 'Cancel' buttons.

Database selection

This field provides you with information about the database software currently in use.

Database settings

As the server, enter the network name of the computer on which the database software is running.

Examination settings

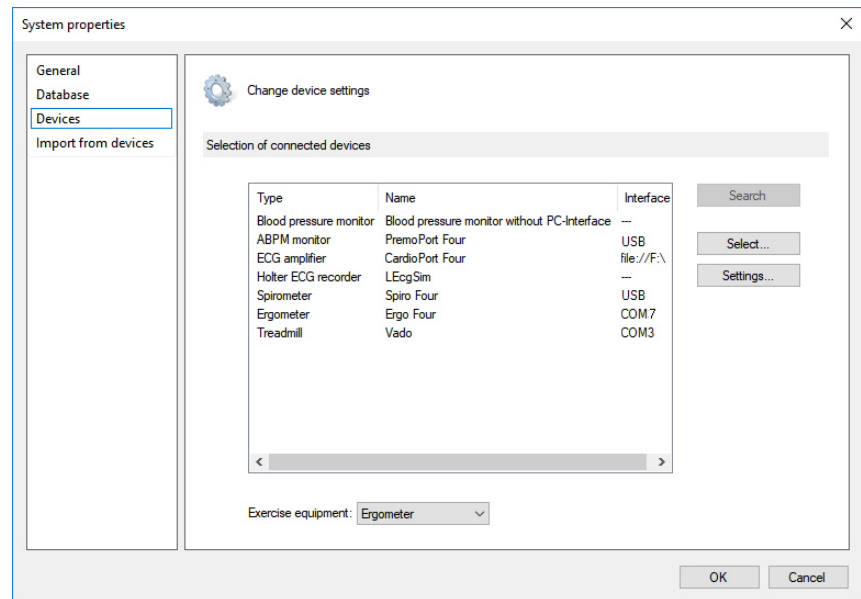
The examination files are saved under the path indicated here.



Tip: Remember to include the database in your data backup concept and to regularly back up the data.

System properties – Devices

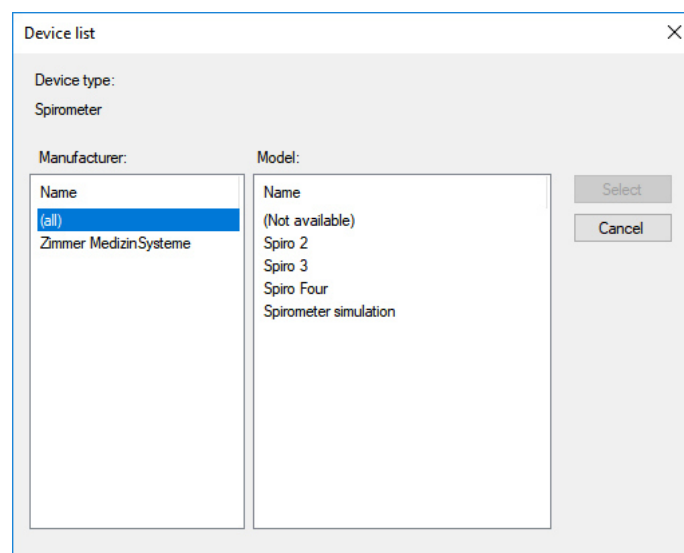
The connected devices are listed in this dialogue box. These can be changed, if needed. In addition, the interface used can be selected.



Selecting the connected devices

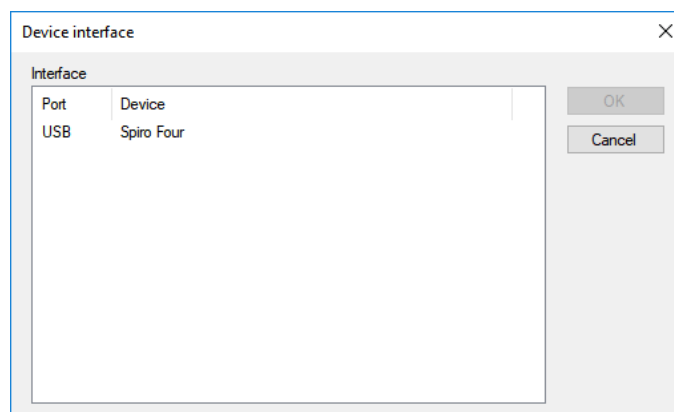
Device type

To set or change a device, select the device type and use the “Select” button to launch a dialogue box in which all examination devices of this type which are supported are listed according to manufacturer. Select the desired model and confirm the setting with “Select”.



Interface

To change the interface of a device, select the device type and use the “Settings” button to launch a dialogue box in which all possible interfaces are listed. There you will also see which interfaces are already being used. Select the desired interface and end the dialogue box with the “OK” button.

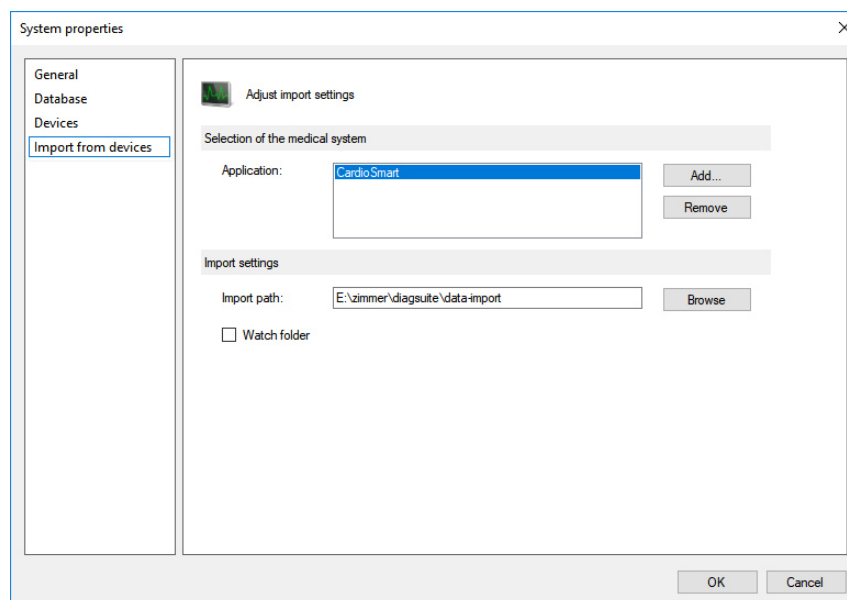


System properties – Import from devices

The DiagnostikSuite is able to import measurement data from certain devices which are then available internally.

In this dialogue box, the connected device as well as the import path from which the measurement data are adopted is defined.

The import process is launched manually via the “File | Import” menu.



Selecting the connected device

The “Application” field lists all connected devices.

[Select entry in the “Application” field](#)

[“Add” button](#)

[“Remove” button](#)

This device is selected by selecting a line. In doing so, all parameters of the marked device are displayed.

Is used to add a new device.

Deletes a list entry.

Device settings

Field	Contents
Import path	Enter the path or select the path here from which the <i>DiagnostikSuite</i> accepts measurement data from the device.
Monitor directory	When this option is selected, the user is informed in a message box when new measurement data are available in the import path.

9.4. Configure connection to practice management software



Practice management – General

Only your service partner should make changes to the connection to the practice management program.

For the DiagnostikSuite connection, the desired practice management is newly entered in this dialogue box or selected from the list of already known practice management programs.

Selecting the practice management

The “Application” field lists all practice management programs entered.

[Select entry in the “Application” field](#)

By selecting a line, this practice management is selected for further communication.

After selecting a practice management, all parameters of the selected practice management are displayed in the “General” dialogue box as well as in the two other dialogue boxes, “Advanced” and “Scope”.

[“Add” button](#)

Used to enter new practice management software. To do this, the information listed below should be entered.

[“Remove” button](#)

Deletes a list entry.

Application settings

Field	Contents
Command line	Enter the path and program name for practice management here or press the “Browse” button to select the path and name of the practice management program in a default dialogue box.
Working directory	Enter the working directory of the practice management here or press the “Browse” button to select the working directory of the practice management program in a default dialogue box.

Communication settings

Field	Contents
Window class	Add the window class of the practice management program. (optional)
Window title	Add the window title of the practice management program. (optional)

Note:

- The optional information increases the functional safety in the communication of both programs and the operating convenience for the user.
- Firstly, by indicating the window class and window title, the DiagnostikSuite can determine whether the practice management program has been launched; secondly, this information allows a window change from the DiagnostikSuite to the practice management program. The window change is launched using the “**Practice**” toolbar function or the corresponding menu function.
- Indicating the command line and the working directory is also optional. If the information is indicated, the DiagnostikSuite is able to launch the practice management program, if needed – for instance, if the practice management program was inadvertently terminated during the recording of a new examination.

Configure connection to practice management

Practice management – Type of communication

The dialogue box “Practice management – Advanced” is used for setting the communication. Here the type of communication is selected and its parameters are entered. Other information is needed depending on the type of communication selected. The content of this dialogue box is correspondingly adapted for this purpose.

Practice management – Advanced / DDEML

In the case of DDEML/BDT communication with the practice management, the settings listed below are to be made.

The screenshot shows the 'Practice management' dialog box with the 'Advanced' tab selected. The 'General communication settings' section shows 'Communication type' set to 'DDE / BDT' and 'Charset' set to 'Ansi'. The 'General characteristics' section shows 'Service' as 'DATADS_service', 'Topic' as 'DATADS_topic', 'Poke-Timeout (ms)' as '10000', 'IT Service' as 'DSDATA_service', and 'IT Topic' as 'DSDATA_topic'. The 'Command identifiers' section contains a grid of fields for various commands, including Patient search, In retrospect, Storage, New exam., Master data, Delete (practice), Delete, Verification, Database synchronisation, Adjustment - Cancel, Adjustment - Skip, and Adjustment - Delete.

General communication settings

Field	Contents
Type of communication	Select “DDEML/BDT” here.
ANSI character set	Enter here whether the practice management program uses the ANSI character set.

General characteristics

Field	Contents
Service	Service name of the DiagnostikSuite
Topic	Topic name of the DiagnostikSuite
Poke timeout (ms)	After this time, Windows reports a time error when transmitting information to the practice management software.
IT service	Service name of the practice management software
IT topic	Topic name of the practice management software
Start timeout (ms)	After this time, Windows reports a time error when establishing a connection with the practice management software.

Command identifiers

Field	Contents
Command identifiers	The parameters for the DDEML communication are set here.

Practice management – Advanced / BDT

In this dialogue box, you specify the parameters for BDT communication via files between the *DiagnostikSuite* and your practice management software.

General communication settings

Field	Contents
Type of communication	Select “File / BDT” here.
ANSI character set	Enter here whether the practice management program uses the ANSI character set.

Import

Field	Contents
Path	Enter the path or select the path here from which the <i>DiagnostikSuite</i> accepts orders from the practice management software.
File name	Enter the file name here.

Export

Field	Contents
Path	Enter the path or select the path here in which the <i>DiagnostikSuite</i> transfers information to the practice management software.
File name	Enter the file name here.

Overwrite the file when exporting

Using the option “Overwrite the file when exporting”, any file with the same name is overwritten upon export of the data.

Practice management – Advanced / GDT

In this dialogue box, you specify the parameters for GDT communication via files between the *DiagnostikSuite* and your practice management software.

General communication settings

Field	Contents
Type of communication	Select "File / GDT" here.
ANSI character set	Enter here whether the practice management program uses the ANSI character set.

Import

Field	Contents
Path	Enter the path or select the path here from which the <i>DiagnostikSuite</i> accepts orders from the practice management software.
File name	Enter the file name here (without ending).
File extension	Select whether a fixed file extension ".gdt" or an incremented numerical ending is to be used.

Export

Field	Contents
Path	Enter the path or select the path here in which the <i>DiagnostikSuite</i> transfers information to the practice management software.
File name	Enter the file name here (without ending).
File extension	Select whether a fixed file extension ".gdt" or an incremented numerical ending is to be used.

GDT identifiers of the practice management software

Field	Contents
Device abbreviation	Entry of the GDT device abbreviation
GDT-ID	Entry of the GDT-ID

GDT identifiers of the *DiagnostikSuite*

Field	Contents
Device abbreviation	Entry of the GDT device abbreviation
GDT-ID	Entry of the GDT-ID

Overwrite the file when exporting

Using the option "Overwrite the file when exporting", any file with the same name is overwritten upon export of the data.

10.Reference

10.1. Questions or technical problems

If questions, technical problems or faults arise, observe the explanations, descriptions and solutions listed here (see section "Answers to frequently asked questions") and those described in the documentation of connected combination devices.

If you require further support or if there is interference which cannot be corrected, please contact your sales consultant or, for matters of urgency, please contact the factory directly.

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Diagnostic hotline:
Telephone +49 0731/9761-115 or fax +49 0731/9761-4443

You can also receive support via email: support@zimmer.de
Visit us online at: <http://www.zimmer.de>

You will help us solve the problem if you have the following information at hand:

- Version number, serial number, computer configuration
- Accurate description of the problem
- Printout of the protocol file (menu function: "*Help – Protocol*")

10.2. Answers to frequently asked questions



Here you will find frequently asked questions about the technology, updating and handling of the DiagnostikSuite.

Additional information and tips for particular issues are found in the file "Readme.txt" which is on the installation data storage medium.

Medical devices, interfaces, etc.

■ How do I set my examination device in the DiagnostikSuite?

- ! Select "*Options – System – Devices*". In the list of connected devices, select the device type which you would like to set. Click on the "Select" button to display the "Device list" dialogue box. This box lists the models, sorted by manufacturer, which the DiagnostikSuite can control. Select the appropriate examination device and confirm your entries with the "Select" button. Now start the "Device interface" dialogue box using the "Settings" button and select the communication connection there. Then press the "OK" button to accept the communication connection and then press "OK" once again to accept the settings of the "System properties" dialogue box.

■ My examination device is not listed in the device list!

- ! If your examination device is not on the list of connectable devices, there is no device driver available for it. However, there may be a compatible device driver for it. For more help, please contact the diagnostic hotline.

■ What is a simulation driver and how is it adjusted?

- ! A simulation driver makes simulated operation of the DiagnostikSuite possible without a connected examination device. Thus, for example, a spirometer can be simulated and a virtual spirometry can be performed as a result without a spirometer being connected.

You can select the simulation driver under "*Options – System – Devices*". Select the device type to be simulated and click on "Select". In the next dialogue box, you will find a simulation device available for this device type.

■ How do you shift the DiagnostikSuite from simulation back to normal status?

- ! Select "*Options – System – Devices*". Select the device type simulated and click on the "Select" button. In the "Device list" dialogue box, select the desired model. The dialogue box is acknowledged with "OK". Now use the "Settings" button to select the communication connection and confirm the dialogue box with "OK". Thereafter close the "System settings" dialogue box with "OK".

!

■ Why are no interfaces seen under "*Option – System – Devices*" ("*Settings – Resources*") although several COM interfaces are installed in the PC?

! Once the interfaces are physically occupied, that is, during an ongoing examination, for example, these are no longer available to the system and are also not displayed. End active sessions or change the operating type to control the COM ports or reallocate them.

■ **Where must the interface parameters, such as baud rate, data bits, parity, and the like be adjusted for the examination devices?**

! These interface parameters are permanently set and controlled by the *DiagnostikSuite*. The user thus has no option for changing these values. COM settings which you set in the system control also do not take effect.

■ **Why does the *DiagnostikSuite* report “buffer overflow” during a real-time examination?**

! If the examination data cannot be read quickly enough from the buffer of the physical interface, a buffer overflow occurs.

The reasons may include:

- The interface is incorporated in the energy-saving functions (power management). Switch all energy-saving functions of the computer off.
- The computer is overloaded. End all other applications. Minimize the programs and drivers which are also running in the background.
- Install a high-performance graphics card with a sufficient amount of its own RAM.

■ **Why does the message “Timeout” appear during a real-time examination?**

! The *DiagnostikSuite* cannot receive any data from the examination device. The connection between the computer and examination device may be broken.

The reasons may include:

- The connection cable or a converter which may be connected between them is inserted in the wrong COM port. Check the assignment of the interfaces.
- The connection cable is damaged. Check the connection cable for kinked, crushed areas and replace it if needed.
- The batteries of the examination device are depleted. Check the batteries and replace them, if needed.
- The device interface is incorporated in the energy-saving functions. Switch all energy-saving functions of the computer off.

- When connecting the examination device to a notebook, special cables, converters and interface adapters may be necessary. Contact the diagnostic hotline for more information.
- **There is no transfer of examination data. The DiagnostikSuite reports “Data could not be received!”.**
 - ! The PC does not receive any data from the examination device.

Check the connection between the computer and the medical device.
- **In the middle of a real-time examination, the DiagnostikSuite is terminated with an error message.**
 - ! The reasons may include:
 - During the examination, data are regularly stored on the hard drive. If the hard drive is in energy-saving mode, it takes a few seconds before it is responsive once again. This can cause timeouts within the DiagnostikSuite. Switch off the energy-saving function of your hard drive.
 - The batteries of the examination device are depleted. Check the batteries and replace them, if needed.
- **What does the “Initialization error” message mean?**
 - ! An examination device cannot be initialized.
 - Check under “*Option – System – Properties*” of the examination device whether the correct driver and correct interface are set.
 - Check the cable for a proper connection.
 - Is the examination device switched on and in the correct mode?
 - Check whether the examination device used is set to the correct baud rate.
- **How can I switch off the power-saving function at the notebook?**
 - ! The power-saving functions of your computer must be switched off at several places.

Information on how to do this can be found in the instructions for your computer.

DiagnostikSuite update

- **Following a program update of an already-licensed DiagnostikSuite version, is relicensing necessary?**

! No, because the update or installation program applies all previous settings of the installed version. In addition to the licensing information, other presets are thus also maintained.

- **Does deinstallation need to first be performed in the case of a program update to the DiagnostikSuite?**

! **Certainly not!** Install a program update over an existing version. In a deinstallation, all licensing information and settings would be lost.

Patient management

- **Although the last session was saved, there are no ECG results in the index card or the medical data from the practice management system.**

! When there is a connection, the results are only transferred to the practice management system if you begin a new session or access the practice management system with the "Practice" button. A rapid task change (via Windows menu bar or "ALT" + "Tab") does not transfer any data.

- **While viewing various examinations for a patient, the patient name changes in the title line of the DiagnostikSuite. Why does this happen?**

! Patient data or numbers were likely recently changed or mixed up in the practice management software. Since the DiagnostikSuite also saves the patient name and number for each examination, this information may change in the title line. In practice, name changes – such as after a marriage – can happen in some cases.

You should manually reconcile the databases of the DiagnostikSuite and the practice management system on a regular basis.

- **When a new examination is selected in the practice management software, the DiagnostikSuite starts but it remains in the background. How can I continue working?**

! Depending on the functionality of the practice management software, this may be configured such that the practice management software puts the DiagnostikSuite in the foreground.

! Using the Windows task change (via Windows menu bar or "ALT" + "Tab"), it is possible to switch from one program to another.

DiagnostikSuite application

- **The DiagnostikSuite is not launching! What can I do?**

! Check whether the database program is running and its database service has started.

! In the case of a network installation, check whether the database server has started.

- ! The DiagnostikSuite application is on a network server which is currently not active or to which there is no network connection. Check whether the server in question is running properly and whether there is a network connection to the server.
- **When launched, the DiagnostikSuite reports: “The database cannot be accessed” or “Could not load database driver”.**
 - ! Check whether the database program is running and its database service has started.
 - ! In the case of a network installation, check whether the database server has started.
 - ! Check in “Menu | Options | System properties | Database | Database settings” whether the correct server is entered.
 - ! Windows may not be able to resolve the server name. Instead, use the IP address of the server.
 - ! In the case of sever operating systems, activate the “Desktop display” feature in the “Server Manager”.
 - ! Check whether the database is located in a network other than the clients. If multiple networks are used, the configuration of the database as well as of the firewall should be adapted.
- **Printing does not work. What could be the reason for this?**
 - ! No printer is configured in Windows.
 - ! The printer is not switched on.
 - ! The connection to the printer is interrupted. The printer cable is not connected.
 - ! The printer is out of paper.
 - ! The toner or ink is empty.
- **The spirometry animation is missing on server operating systems.**
 - ! The corresponding function library is not installed on the server.
 - Activate the expansion “Desktop display” in the “Server Manager”.
Plan on possibly needing to restart the server!
- **Other programs (such as Word) disappear behind the DiagnostikSuite.**
 - ! During the real-time display, the DiagnostikSuite always has priority over all other applications. Stop the real-time display to work with other

applications.

Installation

- **The installation of the database reports “Unknown error while running ,c:\...\getlocales.exe” on a server operating system.**

! The corresponding function library is not installed on the server.

- In the “Server Manager”, activate the expansion “ .NET Framework 3.5.1 Feature”.
Plan on possibly needing to restart the server!

- **The installation of the database in a directory mapped with the command line tool “SUBST” is not possible.**

! The installation program cannot resolve the directory name.

- Avoid using the SUBST command.

10.3. Accessories

To ensure reliable function of the diagnostic system, only original accessories from Zimmer MedizinSysteme may be used.

Scope of delivery

Number	Item no.	Description
1		Digital medium DiagnostikSuite installation
1	9202	Licence DiagnostikSuite, basic software
1	10 102 737	Instructions for use DiagnostikSuite, basic software

Subject to technical changes

List of accessories

Item no.	Description
9205-01	Measurement and interpretation of the resting ECG
9205-02	Ergometry

Subject to technical changes

Additional accessories are available from Zimmer MedizinSysteme.

10.4. DiagnostikSuite components

The DiagnostikSuite has a modular design and consists of various program parts:

Item no.	Component
9202	DiagnostikSuite, basic software
9203	DiagnostikSuite, ambulatory blood pressure
9204	DiagnostikSuite, spirometry
9205	DiagnostikSuite, ECG

The basic software is a prerequisite for being able to operate examination components, because the basic software includes the respective examination components.

If basic software is already on hand, it does not need to be repurchased when additional examination components are purchased.

10.5. Copyright trademarks

DiagnostikSuite

Copyright © 2012-2018

Zimmer MedizinSysteme GmbH, all rights reserved.

Unauthorised copying or sales of this program or individual parts is punishable!

This will lead to both civil and criminal legal action and may result in severe penalties and claims for damages.

The licence terms listed apply to use.

Trademarks

All trademarks named and shown are brands of their respective owners and are considered to be protected.

10.6. Disposal

The installation media of the DiagnostikSuite software are disposed of with household waste.

10.7. Licence terms

END USER LICENCE AGREEMENT

for the DiagnostikSuite software from Zimmer MedizinSysteme GmbH, Junkersstraße 9, 89231 Neu-Ulm (hereinafter referred to as “Zimmer”).

Please read the following licence terms carefully and in detail before you install the diagnostic program DiagnostikSuite (hereinafter referred to as “software”) on your computer.

By installing or using the software, you declare your consent with the licence terms below.

1. General – Area of application

- a)
These licence terms apply exclusively; Zimmer does not recognise any terms by the customer which are contrary to or which deviate from these licence terms unless Zimmer has expressly agreed in writing to the validity of such terms. Zimmer’s licence terms also apply if Zimmer conducts delivery of the software to the customer without reservation, with knowledge of terms by the customer which are contrary to or which deviate from Zimmer’s sales licence terms.
- b)
Zimmer’s licence terms also apply to all future business with the customer, in particular for any updates or expansions of the software delivered.

2. Subject of the licence

The software is not sold, but rather licensed. Upon purchase of the software, the customer receives only ownership of the physical data storage medium, the packaging and the manual as well as any other associated written material.

3. Granting of a licence

Zimmer grants the customer a nonexclusive right to use the software on the designated hardware in connection with the examination device purchased from Zimmer.

This licence allows the customer to install a copy of the software on various individual computers or on a generally accessible storage medium (such as a server). A copy of the software may be made for backup purposes. The customer is to carefully observe all information in the manuals (in their respective latest version) for the programs.

4. Copyright law

This software is protected by copyright. If Zimmer itself does not have property rights to the software or parts thereof, Zimmer has the rights to pass it on to and permit use by third parties. Zimmer is entitled to all rights resulting from copyright law. Any duplication, use, transfer or change to the software which is not expressly approved is prohibited and will lead to civil and criminal prosecution. The manual as well as written material belonging to the software are protected by copyright. Any copying of, change to, or forwarding of the written material is prohibited. The customer must store the software such that unlawful use by third parties is excluded.

- 5. Duration of the licence** The licence is granted for an unlimited period of time. In the event of termination of the licence granted, the customer is obligated, at Zimmer's request, to destroy the software and any copies of it or to return it to Zimmer. The licence automatically loses its validity, without requiring a notice of termination, if the customer violates any provision of this agreement.
- 6. Preconditions for operation** The following preconditions must be met for use of the software:
- Adherence to the hardware and software requirements
 - Properly performed installation of the operating system
 - Properly performed network installation for use in the network
 - Properly working computer system – hardware, BIOS, operating system, third-party software, network, connected devices, etc.
 - Properly performed installation of the software
 - Properly established connection to third-party programs if these programs are connected to accept personal data and diagnoses
 - Proper handling of the computer hardware and any software used on it
- 7. Guarantee**
- a)
The guarantee for the correct function of the software is excluded if third-party software or third-party software not approved by Zimmer is installed on the same computer, unauthorised changes have been made to the software or data backup was not performed regularly at suitable intervals. A condition for the acceptance of a guarantee is adherence to the preconditions for operation of the software (see no. 6).
- b)
Malfunctions caused by the subsequent installation of or changes to any software or settings for software, such as applications, operating system, driver, system settings, BIOS, etc. are excluded from the guarantee. Malfunctions due to third-party negligence, particularly in the case of defective hardware, incorrectly working drivers or other software as well as application errors are also excluded from the guarantee.
- c)
In addition, unless expressly guaranteed in writing, there is no guarantee for the compatibility of this software with any other programs or hardware components.
- d)
Information in the manual/documentation and/or advertising material which relates to currently available expansion options of a product or to currently available accessories are not binding for the future, in particular because the products undergo continuous adaptation.
- e)
If the customer asks Zimmer to perform troubleshooting within the scope of an alleged warranty claim and if the troubleshooting reveals that the error is not attributable to Zimmer, the user agrees to reimburse the costs of the troubleshooting according to customary hourly rates.

8. Liability for defects

- a)
If there is a software defect, the customer is entitled to subsequent fulfilment at Zimmer's discretion either in the form of correction of the defect or the delivery of new, defect-free software. In the event of correction of the defect, Zimmer is obligated to bear all costs necessary for the purpose of correcting the defect, in particular, transport, road, labour or material costs, provided these do not increase as a result of the software being brought to a location other than the place of delivery.
- b)
If the subsequent fulfilment fails, the customer, at its discretion, is entitled to request a withdrawal or a reduction.
- c)
Zimmer shall be liable according to legal provisions, insofar as the customer asserts claims for damages which are based on intent or gross negligence, including the intent or gross negligence of the representatives or vicarious agents of Zimmer. Unless Zimmer has been accused of an intentional violation of the contract, the liability for compensation is limited to foreseeable, typically occurring damage.
- d)
Zimmer shall be liable in accordance with legal provisions, provided Zimmer has culpably violated a fundamental contractual obligation, however in this case, the liability for compensation is limited to foreseeable, typically occurring damage.
- e)
If the customer is entitled to a claim for compensation of the damage instead of performance, the liability of Zimmer is also restricted within the scope of (b) to compensation for foreseeable, typically occurring damage.
- f)
Moreover, there is – if permitted by law – no liability for lost profit, loss of savings, damage claims by third parties against the customer and others for consequential damage, in particular, damage to the hardware and peripheral equipment as well as for damage to/loss of recorded data and data storage media.
- g)
Justified claims for damages according to (c) to (f) are limited to a maximum of the amount of licence fees paid.
- h)
The installation, configuration and functionality of the hardware used – if not delivered by Zimmer or its agents – are not the subject of this agreement. Liability claims cannot be asserted in this regard.
- i)
The liability for culpable injury to life, the body or health remains unaffected; this also applies for the mandatory liability according to the Product Liability Act.
- j)
Liability shall be excluded in instances not covered in the above provisions.
- k)
The period of limitation for claims for defects is 12 months, calculated from the time of transfer of risk.

9. Total liability

a)

Any further liability for compensation as provided for in no. 8 – regardless of the legal nature of the claim asserted – is excluded.

This applies in particular in the case of claims for damages arising from default upon conclusion of the contract, due to other breaches of duty or due to material damage on account of claims in tort in accordance with section 823 BGB (German Civil Code).

b)

The restriction according to (a) also applies if the customer in lieu of a claim to compensation for damages demands compensation of unnecessary expenditures in lieu of performance.

c)

If the liability for damages vis-a-vis Zimmer is excluded or restricted, this also applies with regard to the personal liability for damage of salaried employees, employees, members of staff, representatives and vicarious agents of Zimmer.

10. Applicable law – Place of jurisdiction – Place of delivery

a)

This licence agreement is subject to the laws of the Federal Republic of Germany.

b)

If the customer is a merchant, the registered office of Zimmer is the place of jurisdiction – however, Zimmer is entitled to select the court competent for the customer's domicile.

c)

Unless not stated otherwise in the order confirmation, the registered office of Zimmer is the place of fulfilment.

11. Severability clause

If any provisions of this licence agreement are or become ineffective, in whole or in part, this does not affect the efficacy of the remaining provisions.

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10.8. CE mark

The device bears the CE mark



in accordance with the EC directive on medical devices 93/42/EEC.

The device meets the essential requirements according to appendix I of this directive.

Manufacturer

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Diagnostik*Suite*

Instructions for Use

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