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Mobility & Care Manager

User Manual (English)

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1. Introduction

The latest revision of this document is available online:
www.compliant-concept.ch/en/documents_en

1.1. Mobility Monitor by *compliant concept AG*

Mobility Monitor is an innovative analysis and information tool that allows for determining the mobility of a resident in bed. A measuring unit under the mattress registers the slightest movement of the resident without any direct contact and provides this information to the corresponding control unit. The system distinguishes between relevant changes in position, which lead to pressure relief, and non-relevant changes in position. When connected to the nurse call system, Mobility Monitor activates the nurse call after an adjustable period of time (2h, 3h or 4h) without relevant changes in position. If necessary, a nurse call will be made when sitting on the edge of the bed or when leaving the bed. Care actions can be acknowledged on the control unit and are automatically recorded and documented. Both the sleep profile, getting up, and mobility data, as well as acknowledged care actions can be represented on the computer with the "Mobility & Care Manager" software for further analysis.

Mobility Monitor was developed over several years with experts from various fields of medicine, nursing and engineering together with ETH Zurich and Empa. The result is an aid that is revolutionizing everyday nursing care through objective mobility data.

Clear analysis of the course of medication, detailed mobility analysis for pressure ulcer risk assessment, recording of sleep behavior, as well as fall prevention with a 360-degree bed exit alert via nurse call are possible with the Mobility Monitor.

Whether for visualizing, documenting (pdf export) or in daily communication with colleagues, relatives or authorities - Mobility Monitor is a valuable, useful tool for modern nursing practice.

The three Functions

Mobility Monitor:

The mobility monitor attached to the bed with the help of a simple traffic light (green, yellow, red) shows the current mobility of the patient.

Mobility & Care Manager:

With the help of the PC software it is possible to visualize, analyze and save the mobility data for single nights. It is a valuable aid for estimating the risk for pressure ulcers.

Bed Exit Alert:

The bed exit alert, discretely integrated into the bed, uses the nurse call system and alerts even before the patient can leave the bed.

1.2. This Document

This manual covers only the software **Mobility & Care Manager**. For the other functions of Mobility Monitor, please see the separate manual.

2. Warnings

The following information is intended for safe use of the device and the software, so that neither the user nor the product is compromised. The following warning symbols are used for this product:

Warning that prevents serious injury to personnel or the user or is critical to the operation of the software.

Important information that will ensure proper use of the product.

	Please contact the distributor or manufacturer for help with the installation and operation of the device, or if you notice an unexpected behavior of the device.
	The device must be installed and put into operation according to the instructions. In addition, the user must be trained and instructed in the operation of the device.
	The actual pressure ulcer risk assessment is not handled by the device, but is the responsibility of the nursing staff.

3. Installation

3.1. System Requirements

	Requirements
Operating System	Windows Vista (32 or 64 Bit) Windows (32 or 64 Bit) Windows 8 (32 or 64 Bit) Windows 10 (32 or 64 Bit) Windows based Terminal Servers
Database	MS SQL Server 2008R2 **or newer** MS SQL Server 2012 Express will be installed during standard installation process if not present
Framework	.Net Framework 4.0
Processor	1 GHz for 32 Bit, 1.4 GHz for 64 Bit (2 GHz recommended)
Screen Resolution	At least 1024x768
Hard Disk Space	Application: 100 MB SqlExpress: 2.5GB Database: approx. 2GB per year (depending on usage and number of Mobility Monitor devices)
RAM memory	2 GB (4 GB recommended)
Internet Access	Required for - installation using Click-Once setup - automatic registration and activation of licence. - optional for TeamViewer support
USB Port	Required for importing the mobility data (not needed for Wireless system)
Color Printer	Optional for Print-outs of nursing records

3.2. Installation and Configuration

For a detailed description of the software installation please refer to the separate installation instructions. After downloading and installing the software, at the first program start you can select between standard (local database) and custom (user-defined) installation, where with the user-defined installation an existing database can be accessed or a new database on a central server can be created.

3.2.1. Default Installation (Local database)

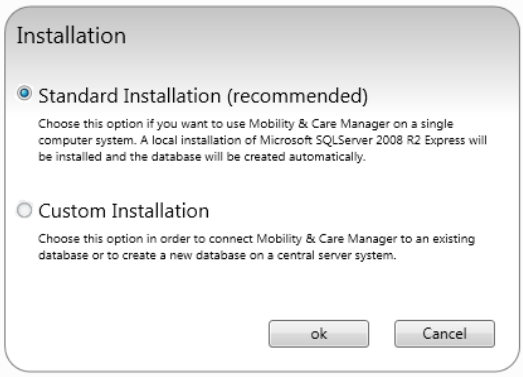


Figure 1 Typical Installation (Local Installation)

Select this option if you want to use Mobility & Care Manager only from a single workstation. Here, a local version of Microsoft SQL Server 2012 Express is installed and a database is automatically created.

3.2.2. Custom (User-Defined) Installation

Select this option to connect to an existing database for "Mobility & Care Manager" or to create a new database on a central SQL Server. The database server can still be adjusted in the settings subsequently.

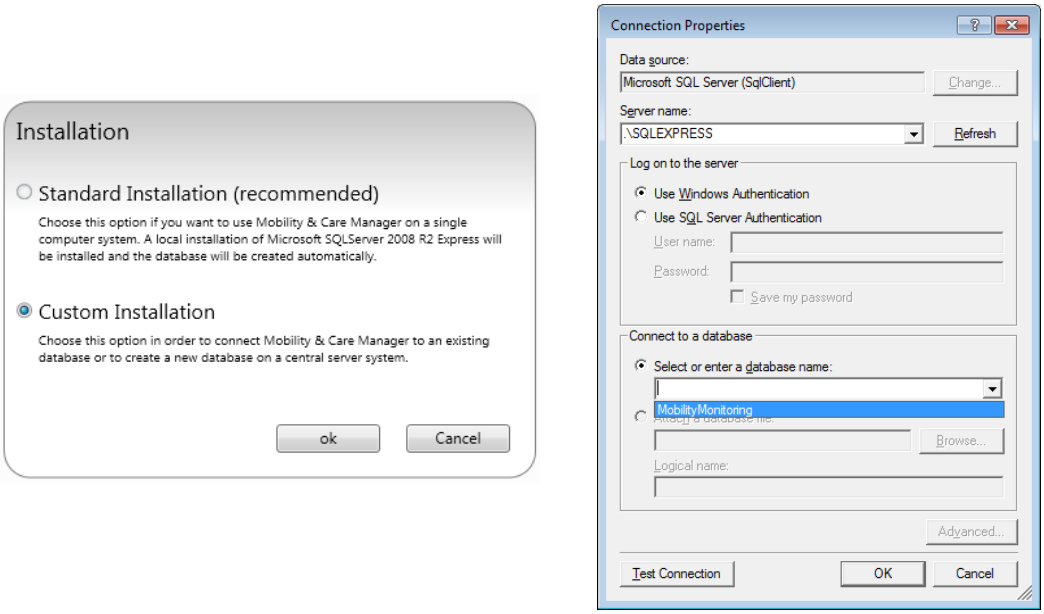


Figure 2: Custom Installation

Window "Connection Properties"

In the field "Server name:" the network address of the database server is added, followed by a **"\"** and the name of the server instance. The network address is usually the IP address of the database server. If the database is local on the same PC a **"."** (dot) or “localhost” can be used. The name of the instance is normally "SQLEXPRESS".

Example "Server name:" for local database ".\ SQLExpress"
Example "Server name:" for central database: "192.168.1.2\SQLEXPRESS"

Only if the entry in the field "Server name:" is correct and the server is reachable, an entry appears when you click in the bottom Drop-Down Selection with the heading "Select or enter a database name".

	The central database must be created on a Microsoft SQL Server 2008 R2 or newer.
	The user must have access rights (read and write) to the selected database and to the database server. To be able to adjust the database in the case of software updates, the database user must also be entered as "db_owner". If the database is created by the "Mobility & Care Manager", this usually happens automatically.
	The free version, Microsoft SQL Express (2008R2 or newer) can be used.
	For the installation of the database server, please follow our **installation instructions for Microsoft SQL Server,** which are available separately**,** so you can connect the "Mobility & Care Manager" with the central database.
	If you click the **Refresh** button, it may take up to a minute for the software to respond again. During this time, Windows will scan the network for possible SQL servers. If the server is not listed automatically, this does not mean, however, that the server is not reachable.

3.3. Registration

To activate the installation automatically with a valid licence, a one-time registration per database must be performed. The registration process may only be done by the Administrator. The Administrator is automatically requested to register after the application is started (Figure 3).

Later the licence may be checked on https://licensing.compliant-concept.ch using the registered e-mail address and password.

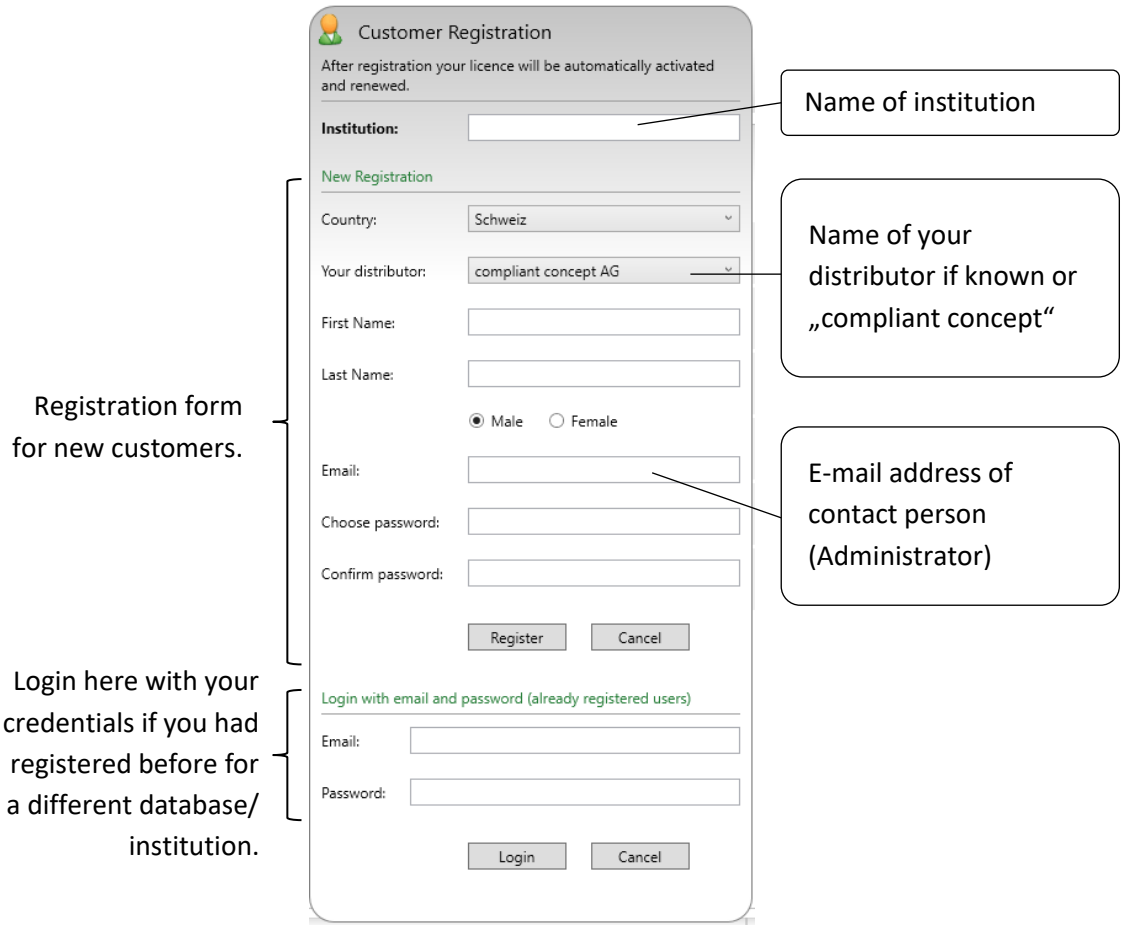


Figure 3 : Registration form (displayed automatically)

4. Structure of Mobility & Care Manager

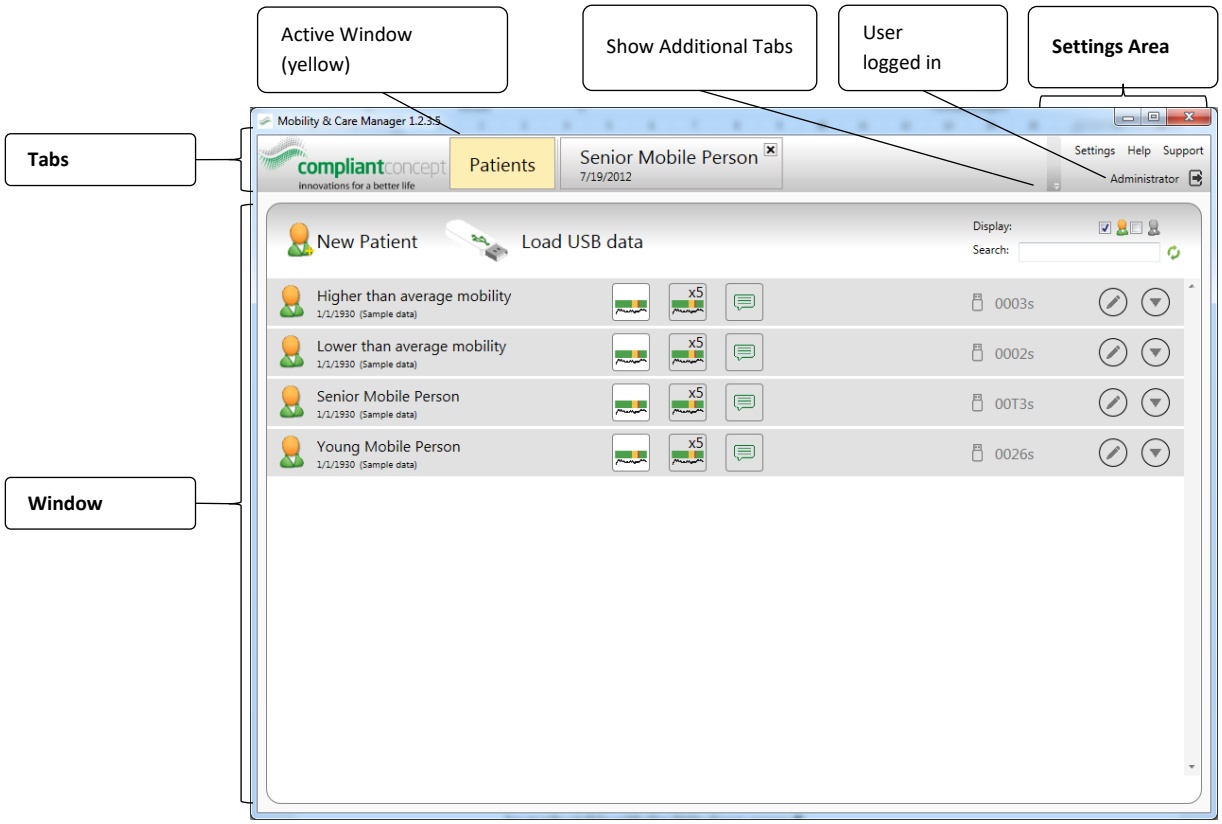


Figure 4 : Structure of Mobility & Care Manager

- Show additional Tabs
  - When more windows are open than there is space for tabs, the remaining tabs can be made visible with the little down-arrow.

- Settings Area
  - ”Settings“ opens the Settings Window (see Chapter 5 Settings)
  - ”Help” opens the Manual for the ”Mobility & Care Manager“ software
  - “Support”: If you have requested help from customer support, you can start a TeamViewer session using the “Support Button“. This allows for a support staff member to directly support you at the screen after you provide the connection data for TeamViewer.

5. Settings

Specify whether you want to create different users and if you want to secure access per user with a password. By default, the administrator user is used without password protection. Most settings can only be changed by the administrator user.

5.1. Differences between the Administrator and other users

The Administrator may alter all the settings described in this section. The normal or restricted users may only alter their individual settings like display language, and presetting the analysis view (see 5.3).

5.2. Settings, which can only be set by the Administrator

5.2.1. Basic Settings

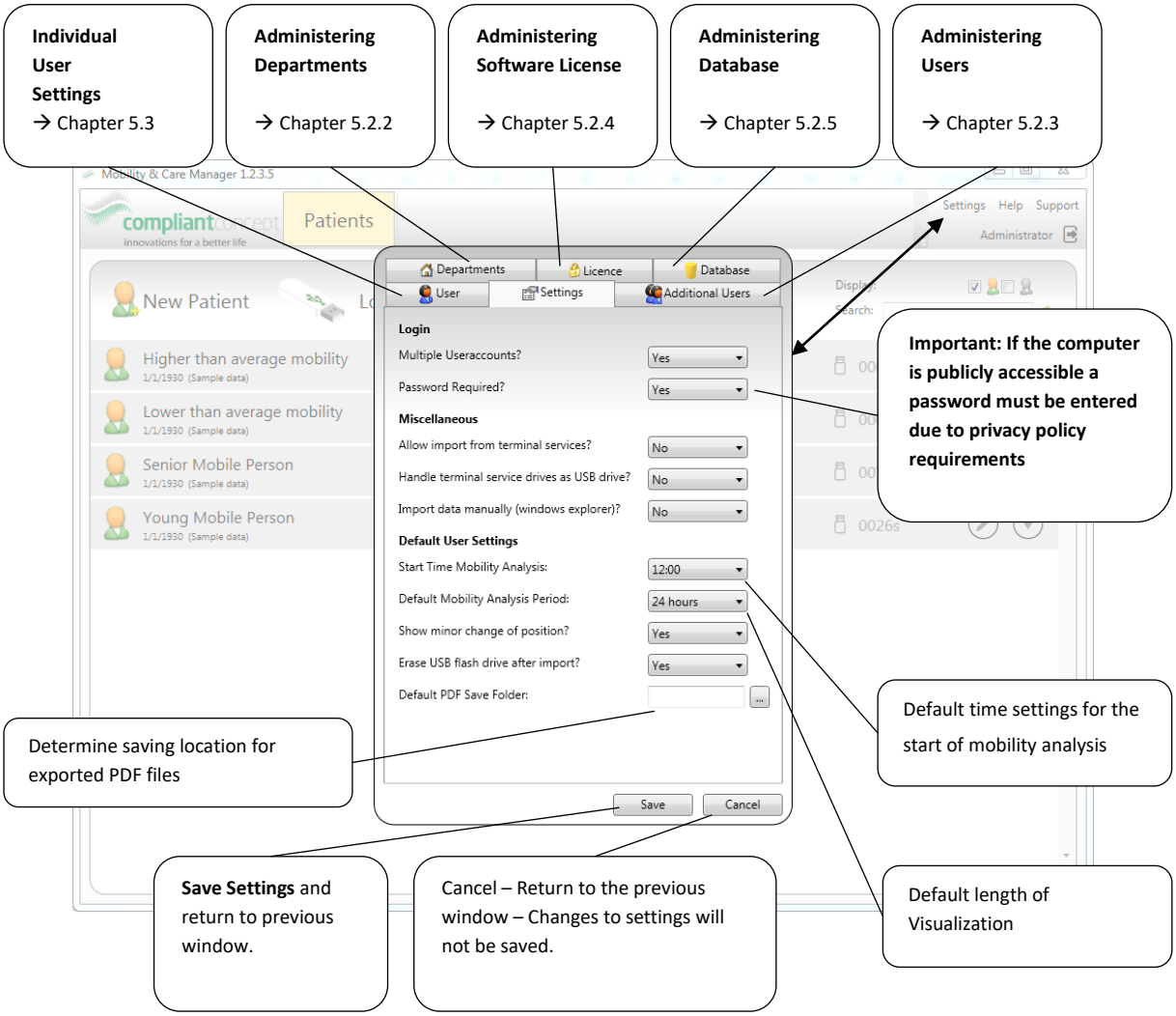


Figure 5 : General Settings

⚠	**Important:** For privacy protection reasons the password must be set if the computer is accessible to the public.
ℹ	Please note that the **default user settings** may be overwritten by the **custom user settings** (→ Chapter 5.3).

5.2.2. Managing Departments

Departments can be managed in Settings, whereby users and patients can be assigned to specific departments. Users can only access patients located in their own department.

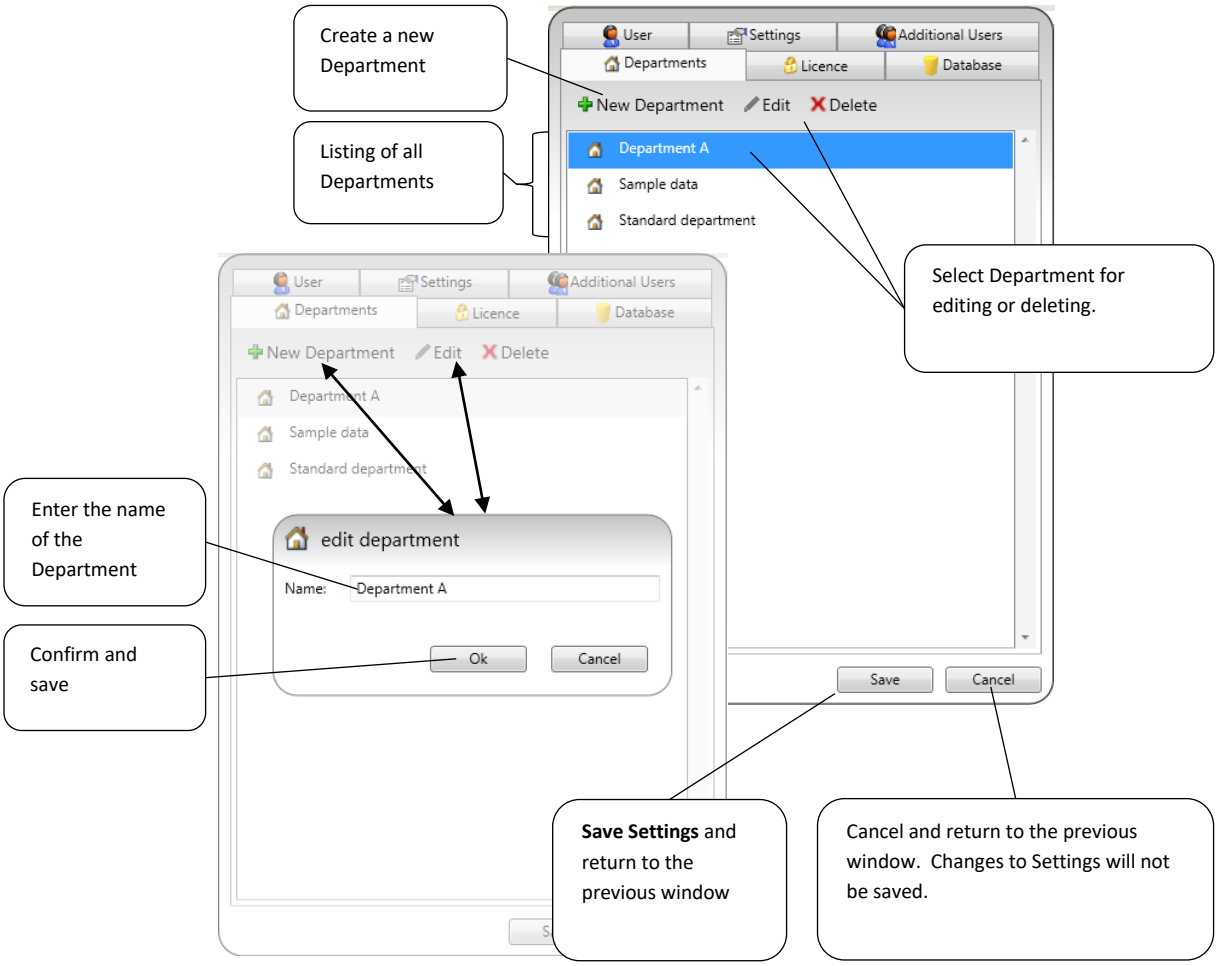


Figure 6: Managing departments

	To manage departments the user has to be logged in as administrator in the software.

5.2.3. Managing Additional Users

Here, additional users can be created. For each user, the language, the department to which he belongs, and a password can be set individually.

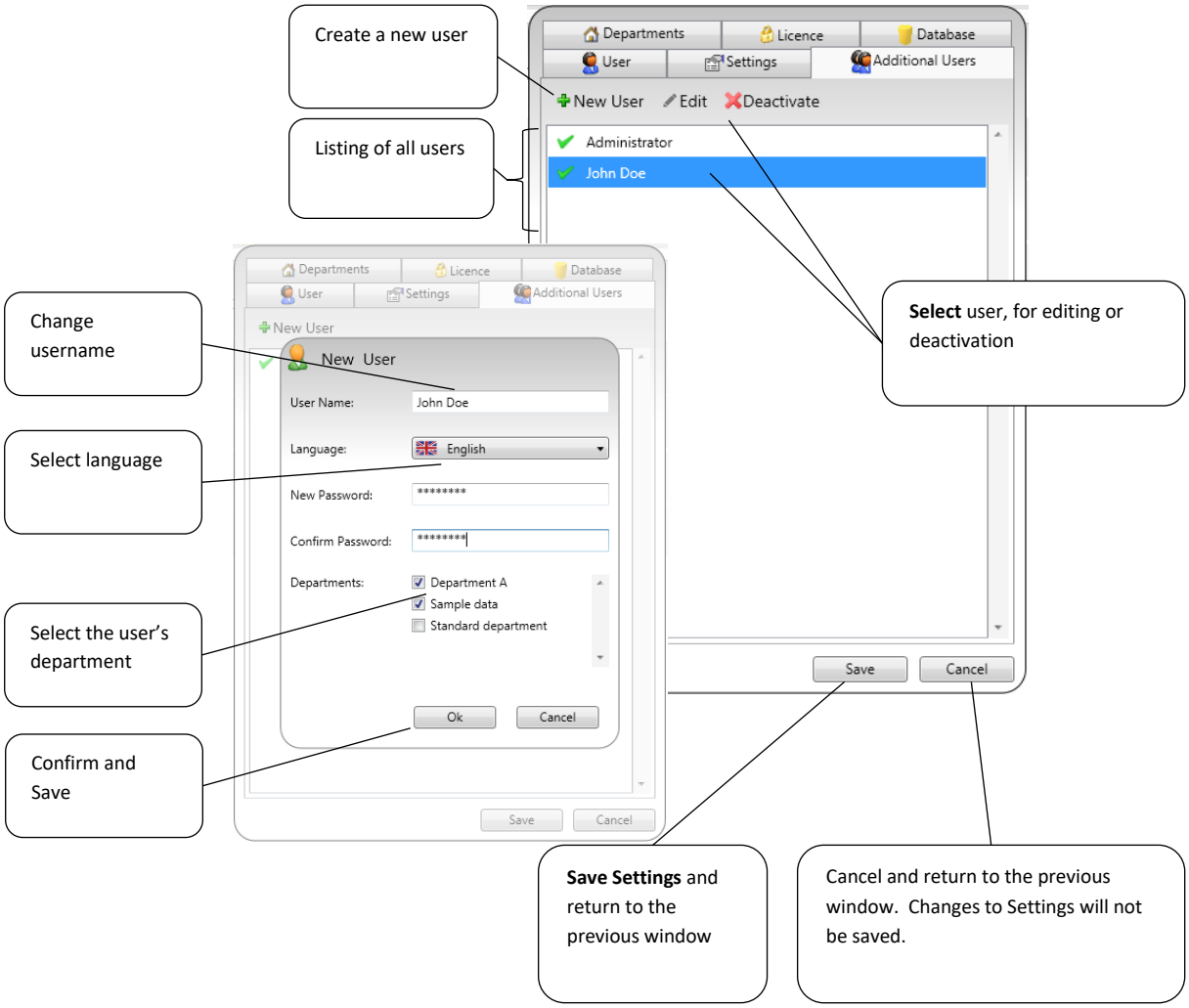


Figure 7: Creating / editing users

	To manage users you have to be logged in as administrator in the software.

5.2.4. Managing Software Licensing

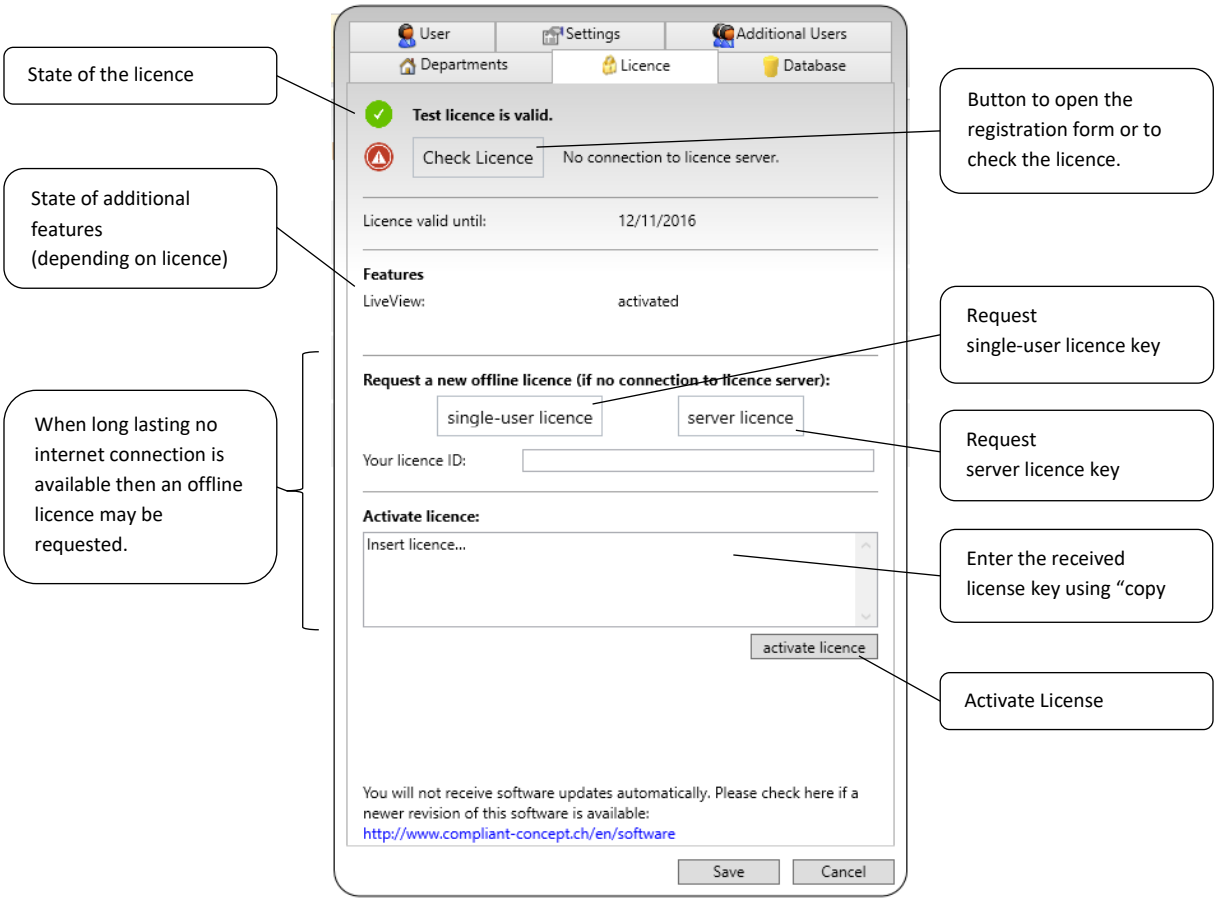


Figure 8: Licensing Settings

TEST LICENCE

After the first installation a temporary test licence is activated for testing purposes.

ONLINE LICENCE (WHEN CONNECTED TO THE INTERNET)

When connected to the internet the installation may be registered and activated online. This procedure is only needed once per database. The software checks periodically in the background if a valid licence is present.

OFFLINE LICENCE (WITHOUT INTERNET CONNECTION)

When you request a license key using one of the buttons, an Email message is created in your existing Email client that includes your license ID, which is addressed to license@compliant-concept.ch. Please complete the message with your name and the name of your institution.

If the computer is not connected to the Internet, or if no Email program is configured, please send us the license ID, which appears in the text field when you press the corresponding button, using a different computer.

Your personal license key will usually be delivered within one business day via e-mail.

	To view the license and edit it, you must be logged in as an administrator in the software.
	A server license allows an unlimited number of installations within your institution, which will all access your central database. Obtaining and entering the license key needs to be done only once per database server, because the key is stored centrally in the database.

5.2.5. Managing the Database

In the Settings, the database connection can be adjusted. Clicking on the **"Manage connection"** opens the window from Chapter 3.2.2.

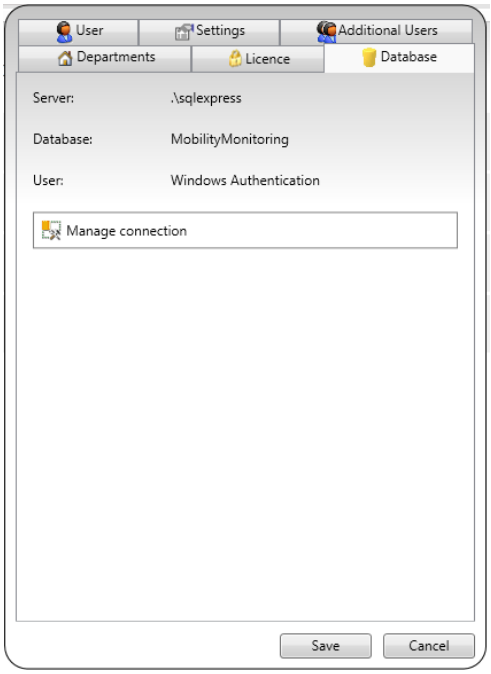


Figure 9: Database Settings

	To manage the database you must be logged in as administrator in the software.

5.3. Individual User Settings

Each user can personalize these default settings.

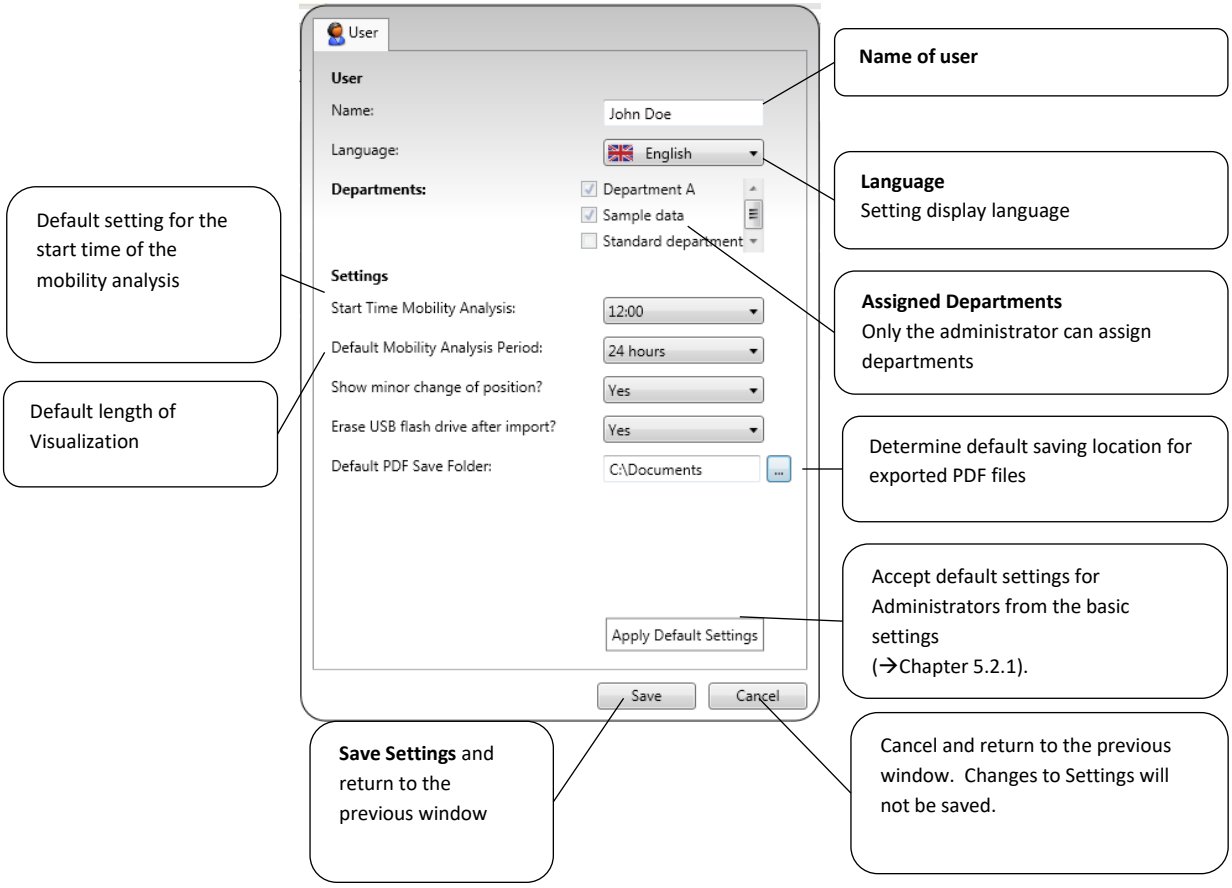


Figure 10: Individual user settings

6. Managing Patients (Patient View)

6.1. Overview Patients

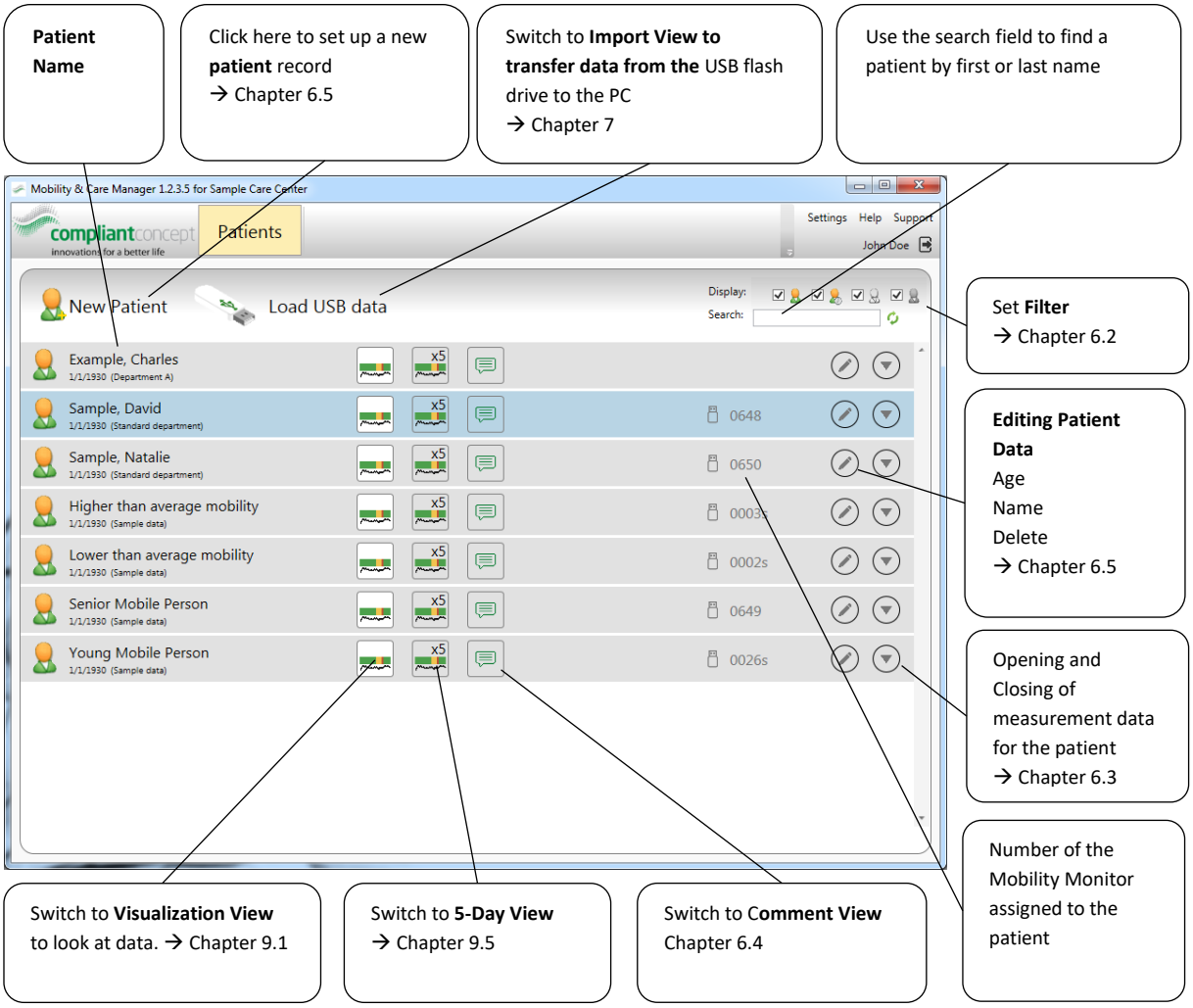


Figure 11: Patients Overview

6.2. Filtering the patient list

6.3. Measurement Data for the Patient

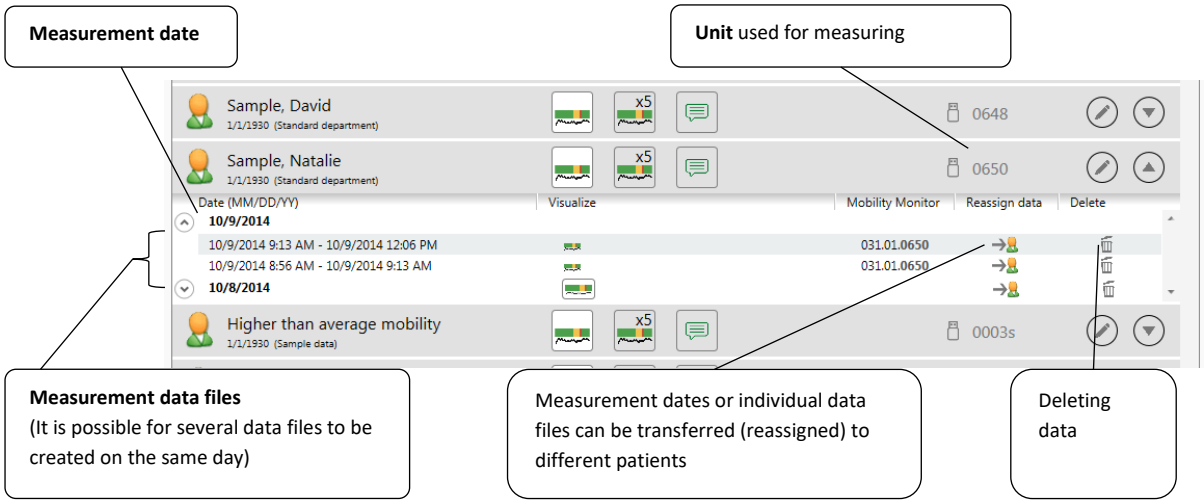


Figure 12: Measurement data for a patient

6.4. Comments View

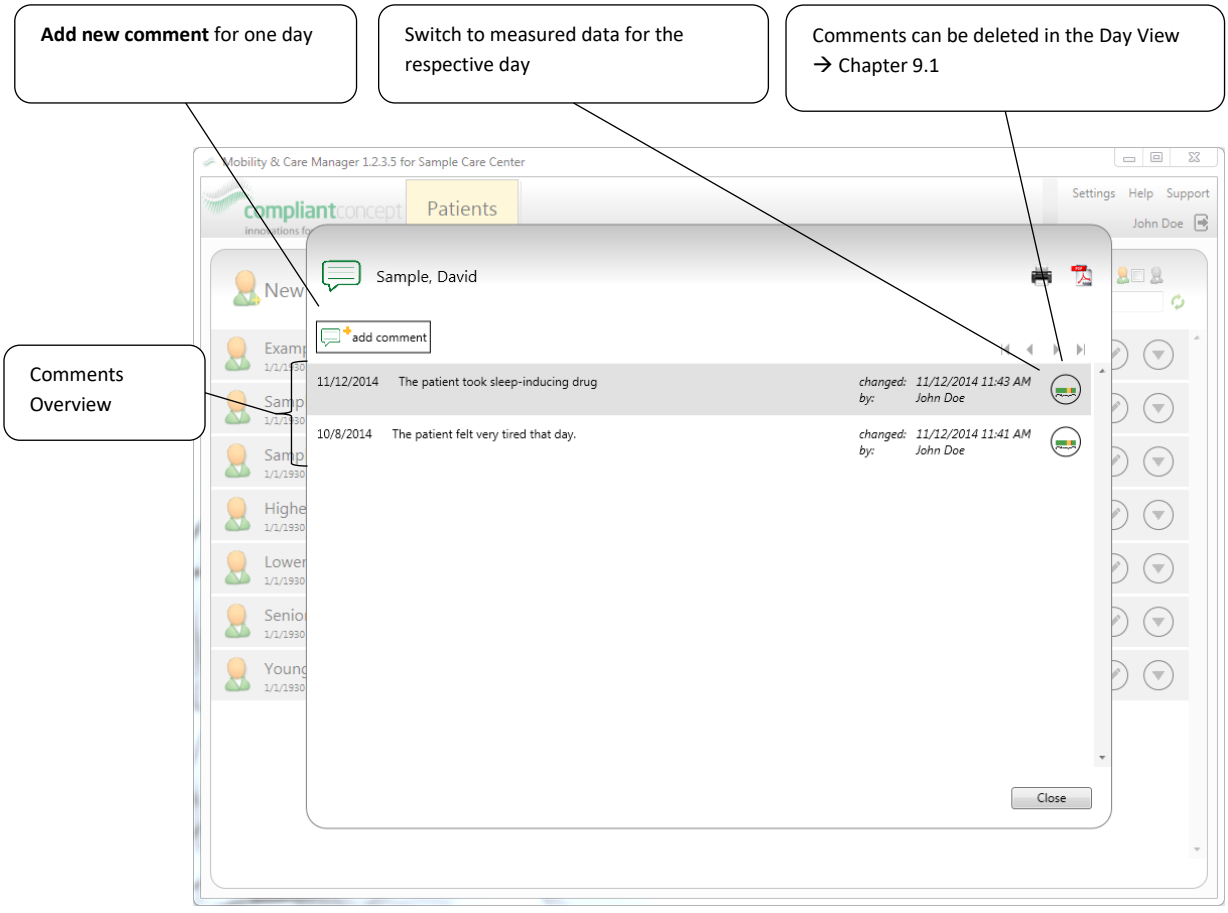


Figure 13: Comments View

6.5. Creating / Editing / Deleting a Patient

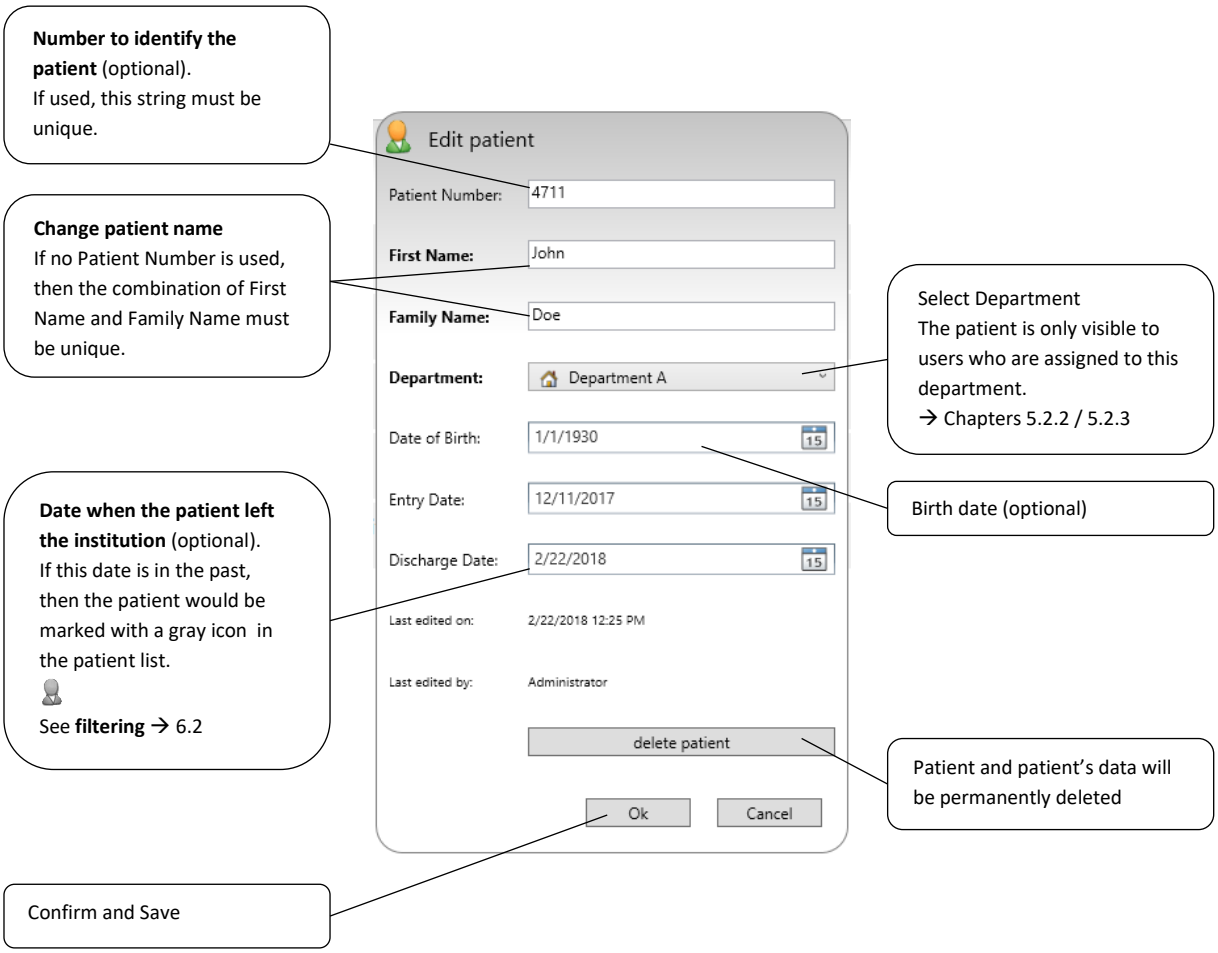


Figure 14: Creating / editing / deleting a new patient

7. Importing and Assigning Data via USB

Before data can be imported into the software, it must be transferred from the Mobility Monitor to the *compliant concept* USB flash drive. Plug this USB flash drive into the control unit and **wait** until the green **"Data Transfer" light stops flashing**. You can then remove the USB flash drive.

	The Mobility Monitor control unit can store up to 7 days of data; then the older data will be overwritten by new data. We therefore recommend transferring the data before the end of the 7 day period onto the USB flash drive.
	Data transmission works only with an original *compliant concept* USB flash drive.

After you have transferred the data from the Mobility Monitor to the USB flash drive, in the next step plug the USB flash drive into your PC. Then start the "Mobility & Care Manager" (if not already done) and click "Load USB data" in the patient view. This opens the "Data-Import" View.

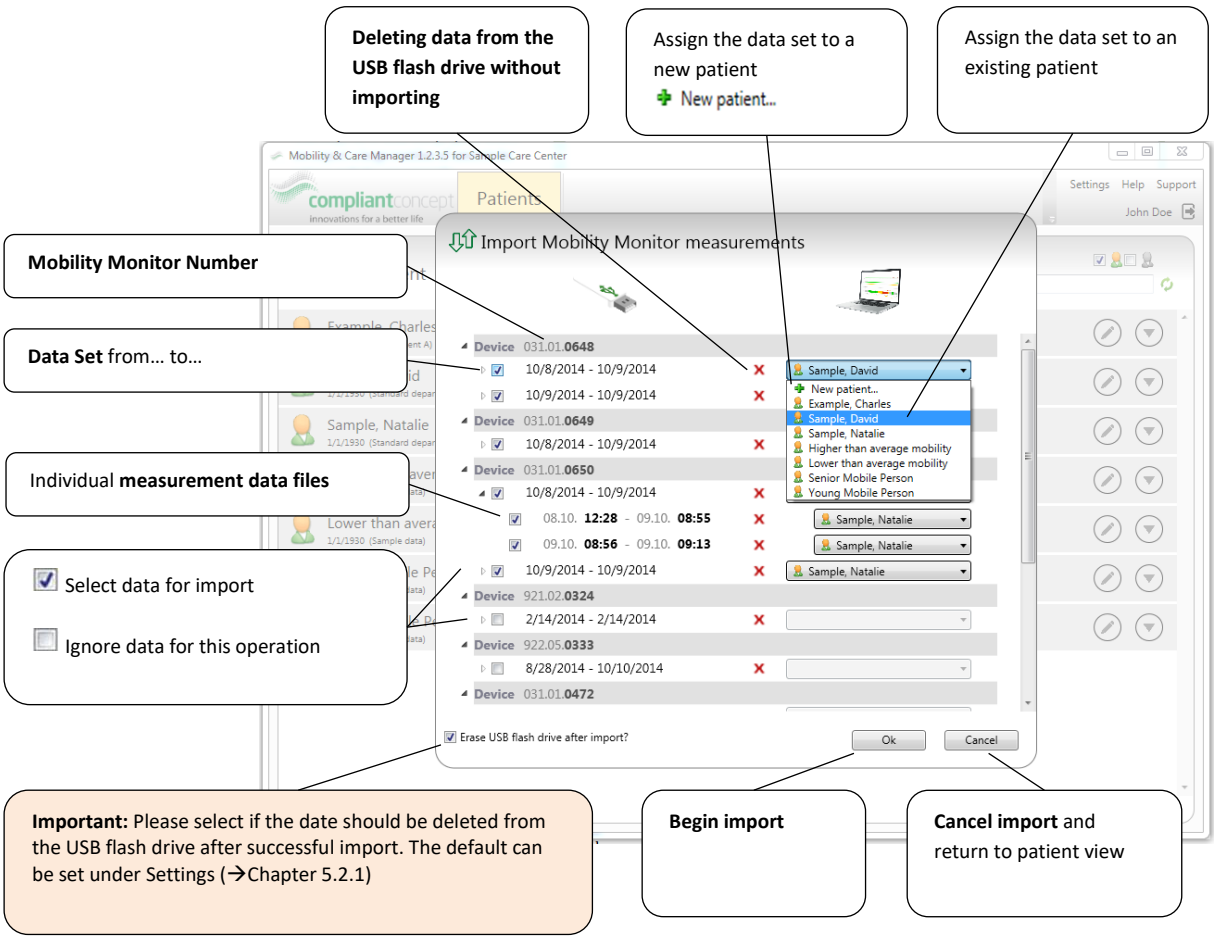


Figure 15: Importing and assigning data via USB

8. Assigning Wireless Mobility Monitors to Patients

	This chapter is only for Mobility Monitor **Wireless** devices.

8.1. Button "Assignment required"

Whenever a Mobility Monitor is assigned to a new patient, the Mobility Monitor must be re-calibrated and then assigned in the software.
The yellow "Assignment required" button appears when new non-allocated data becomes available. When all data is assigned to the patients, this button disappears.

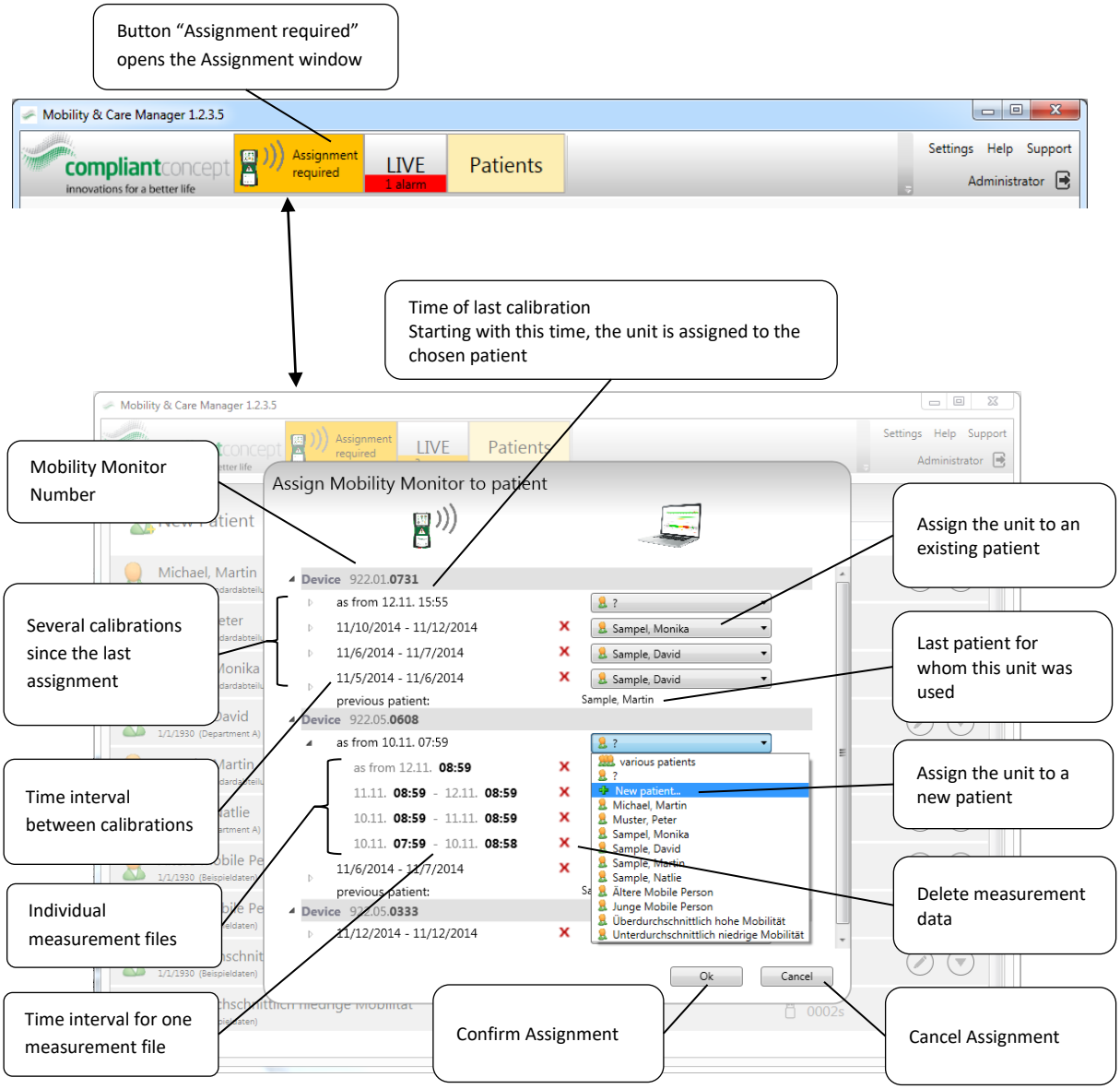


Figure 16: Assignment window for Mobility Monitor Wireless

9. Visualization of Measurement Data

9.1. Overview

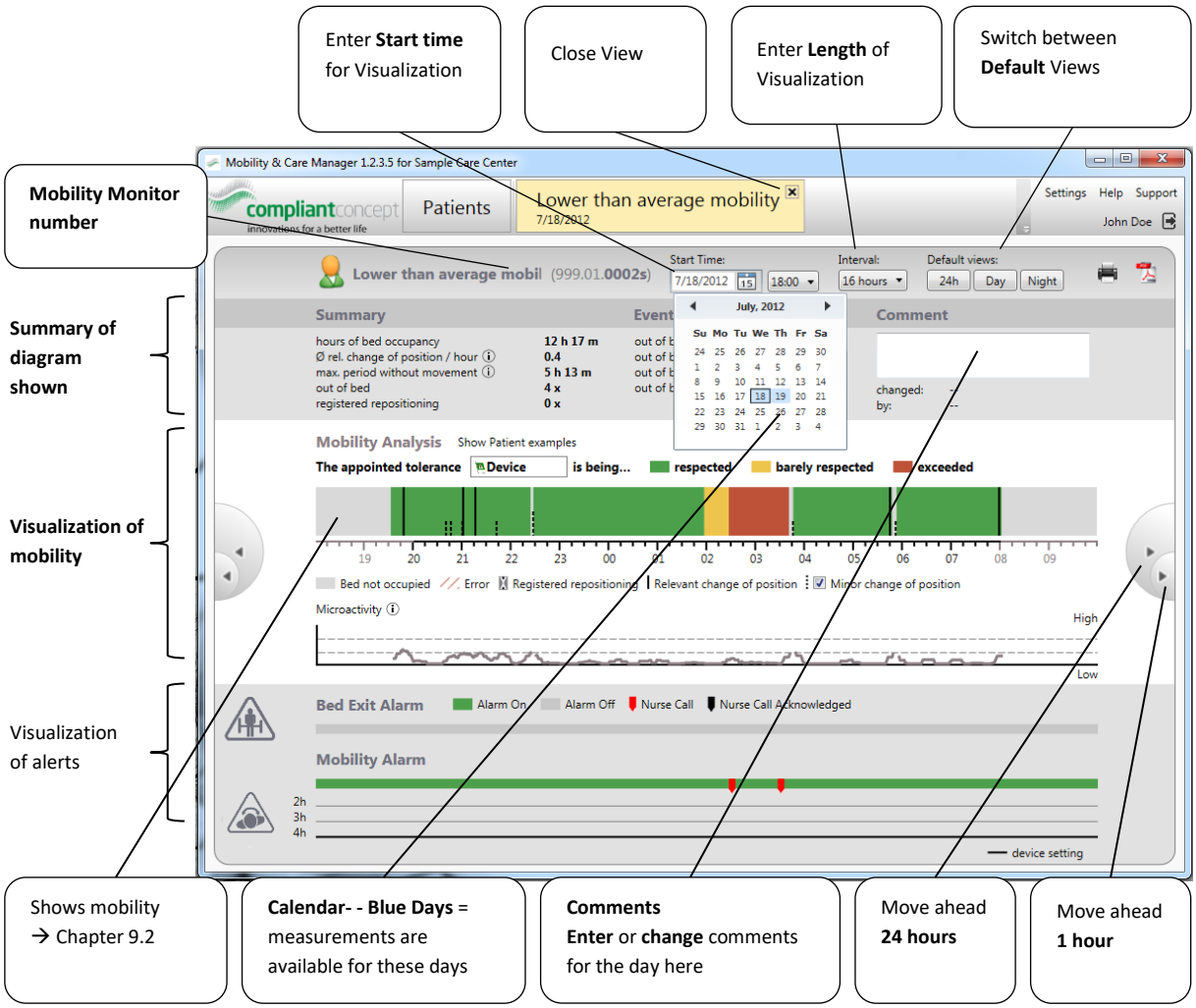


Figure 17: Visualization Overview

9.2. Mobility Analysis

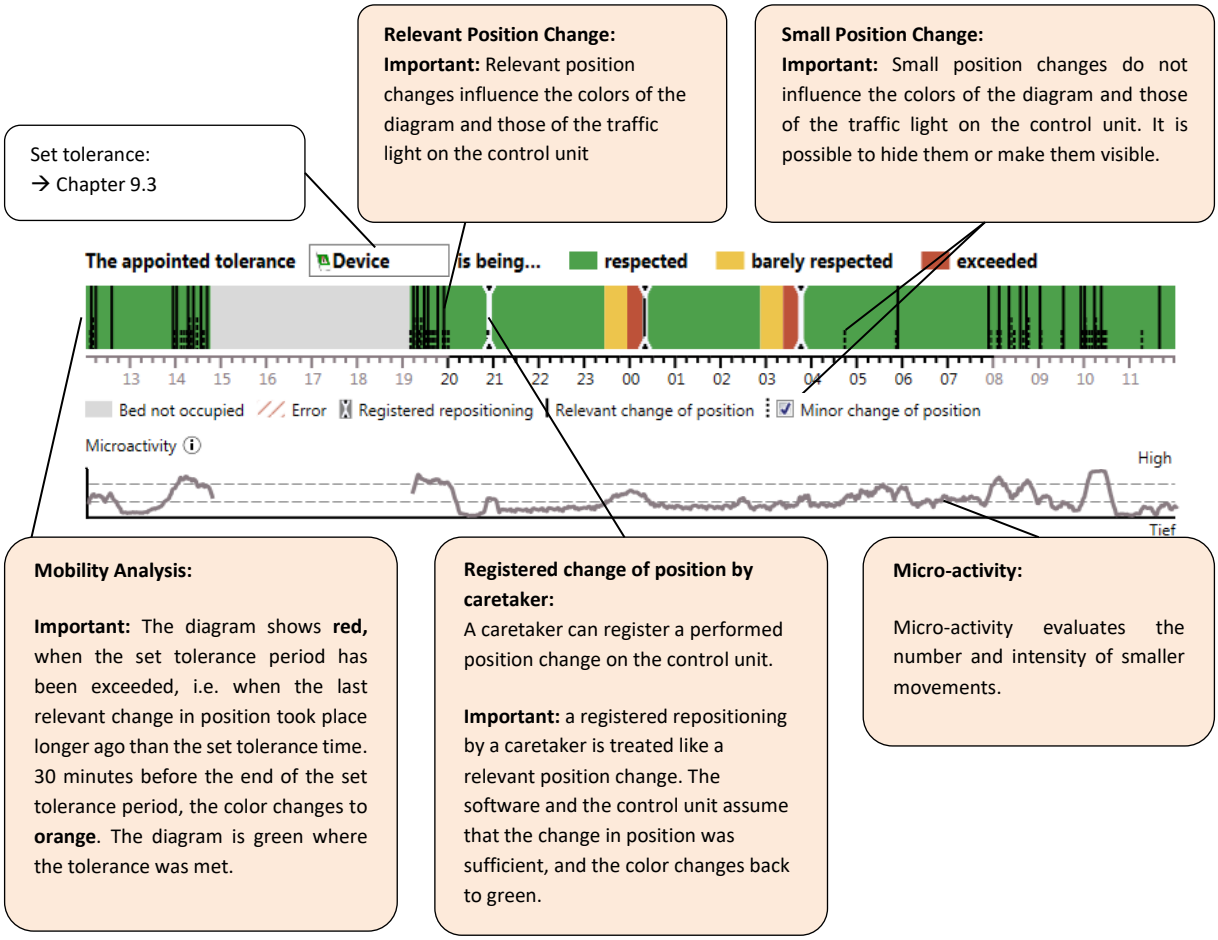


Figure 18: Mobility Analysis

9.3. Setting the Tolerance Period for preview

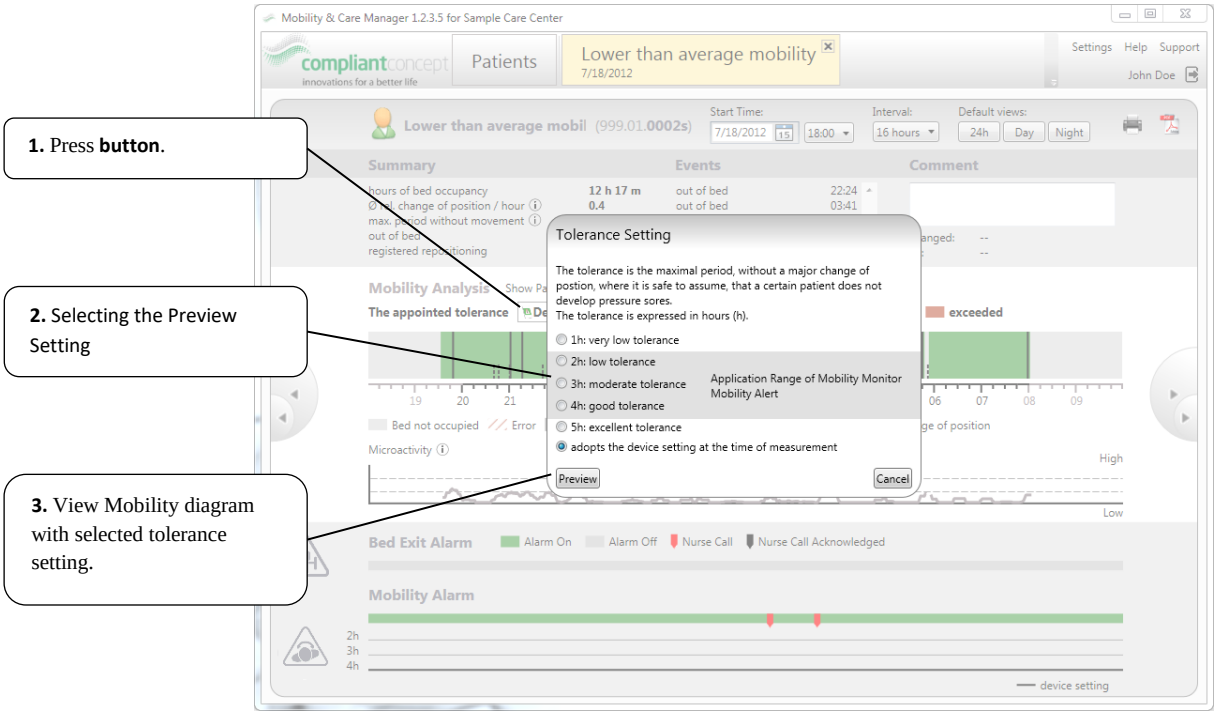


Figure 19: Setting the Tolerance

⚠	The tolerance period set in the software does not get transferred to the Mobility Monitor's Control Unit at the bed automatically. It must always be set separately on the Control Unit.
⚠	Defining the tolerance is the responsibility of the nursing staff. The specified value must be checked constantly and adjusted if necessary.

9.4. Marking of noticeable measurement data / time periods

With the star symbol ☆ the currently displayed data analysis can be marked.

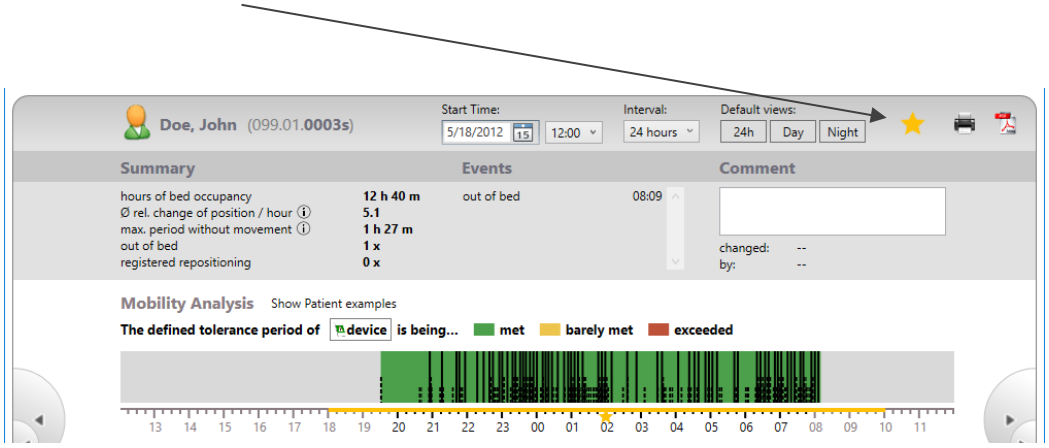


Figure 20: For the marked view, the time axis is colored yellow and marked with an asterisk.

To remove a marker, click on the star button again. Afterwards, you can remove a marker with the Delete icon 🗑.

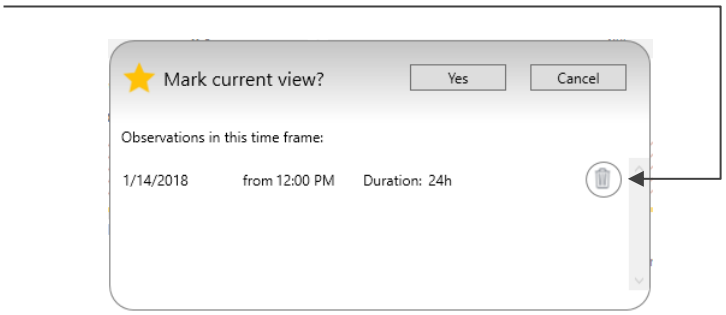


Figure 21

ℹ	Marked time periods can be found more easily using the calendar selection. In addition, the data selected in this way can be queried and transferred via an interface by a third party software (such as nursing documentation).

9.5. 5-Day View

The 5-day view shows the last five days at a glance. The start date and time period can be adjusted.

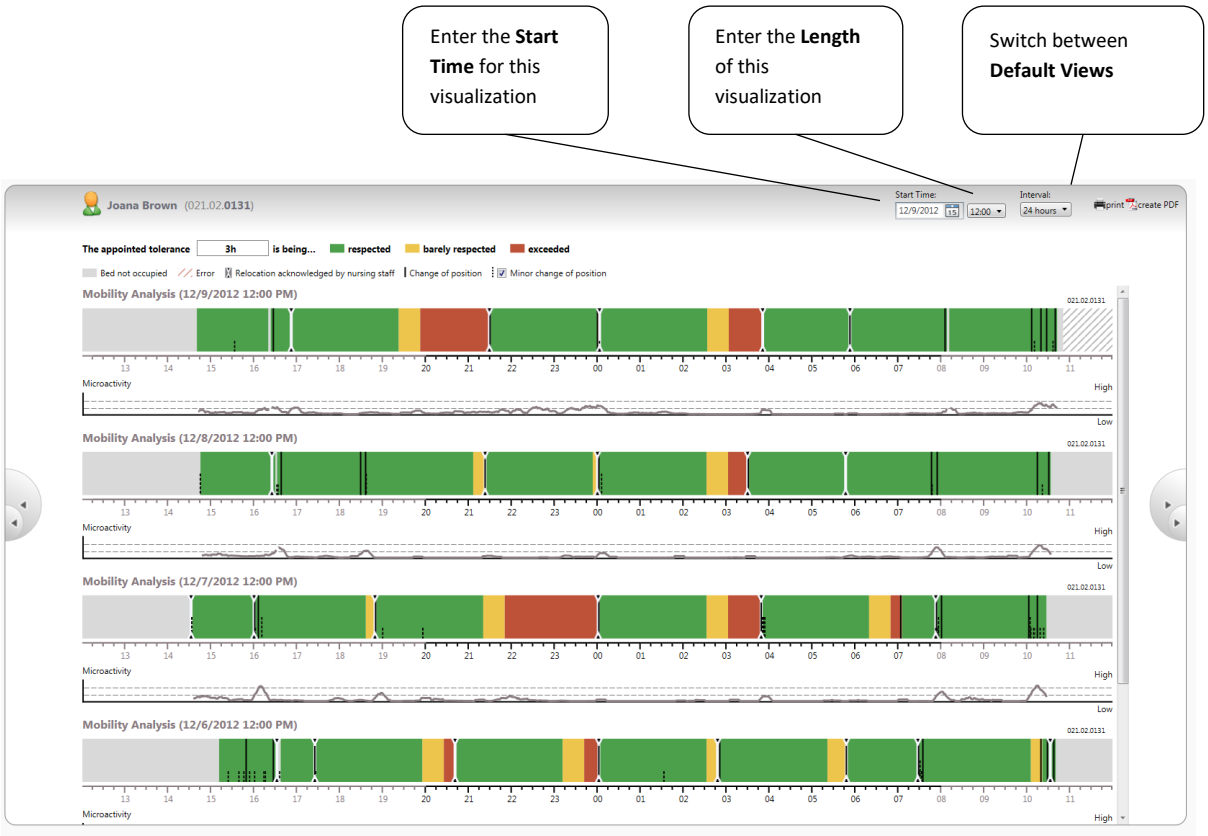


Figure 22: 5-Day View

10. LIVE View

To use LIVE View, it must be activated with the respective license. Whether it is activated, can be checked in the Licensing Settings (→ Chapter 5.2.4). To purchase a license for LIVE View, please contact our support (→ Chapter 12).

In LIVE View the data recorded by Mobility Monitor can be viewed in real-time. The individual user can see all devices, which are connected via wireless and assigned to the same department.

10.1. Overview

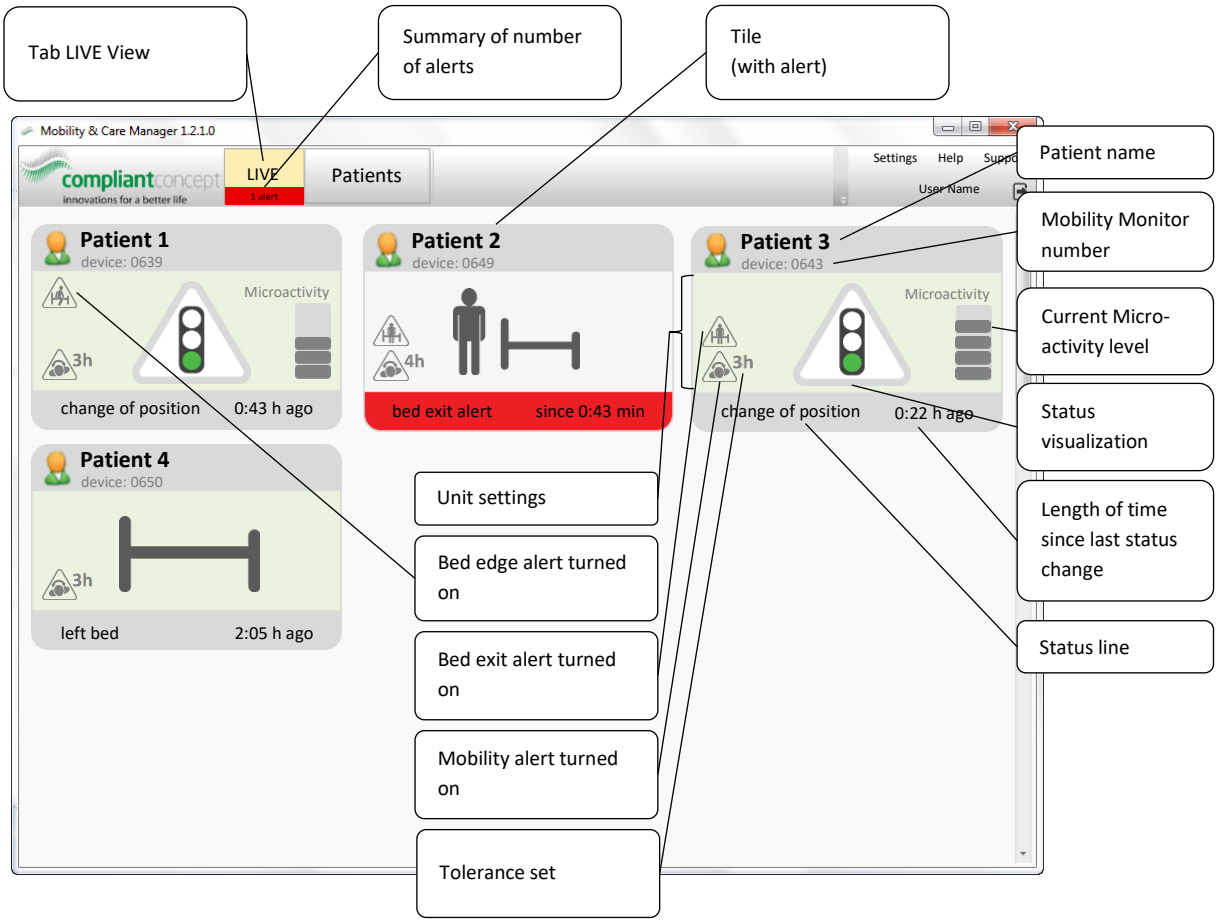
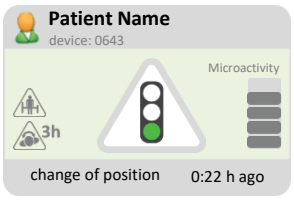


Figure 23: LIVE View

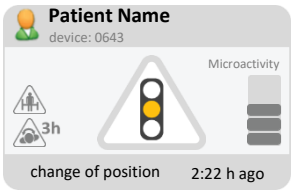
10.2. Tiles

Various Statuses



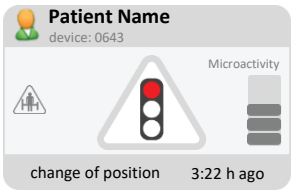
Green light: mobility is within the set tolerance

The tolerance set on the operating unit is observed.

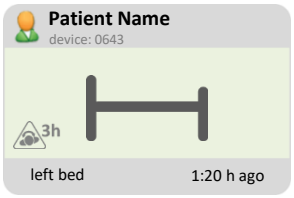


Orange light: mobility is just barely within the set tolerance

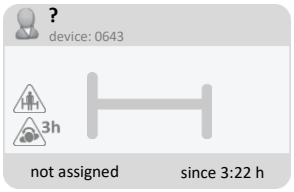
Less than 30 min until the set tolerance is exceeded.



Red light: The set tolerance period was exceeded, but alert was not turned on



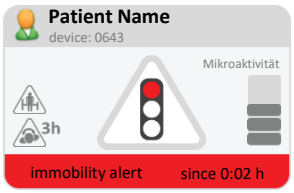
The patient left the bed



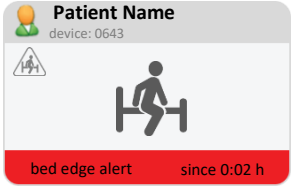
The device is not assigned to a patient yet.

Assign the device to a patient using the button "Please assign".
→ Chapter 8.1

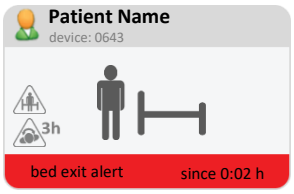
Alerts



Immobility alert was triggered

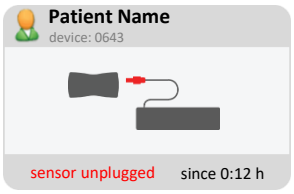


Bed edge alert was triggered



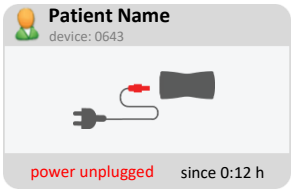
Bed exit alert was triggered

Errors



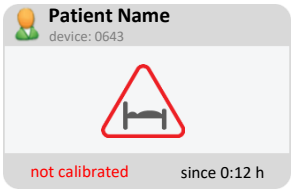
The sensor unit is unplugged

Please connect the sensor cable into the green port.



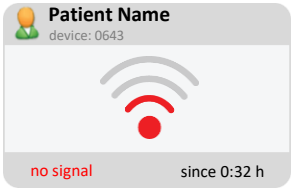
No electrical power

Please check if the power cable is connected to the device and to the power outlet.



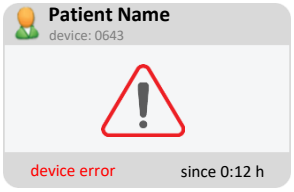
The Mobility Monitor is not calibrated

Please calibrate the Mobility Monitor.



The wireless connection is interrupted

If the device is not assigned for more than 24 hours, it disappears from LIVE View. Once the connection is restored, the unit appears again in LIVE View within 1 minute.



A general device fault has occurred

See Mobility Monitor manual.

11. Troubleshooting

11.1. Installation

Error Description	Possible Cause	Solution
The software cannot be found after installation.	The software was installed under a different user account (e.g. Administrator account) using the ClickOnce method.	**Please run the installation with the same windows user under which you want to use the program then (log in user → double-click on the setup file).** Administrator rights are not required for this installation. If during the installation administrator rights will possibly be required, they will be called for. Alternately, you can also choose the MSI installation method. See corresponding Installation manuals for more information.
Error message: "No connection to the Internet".	The user does not have permission to access to the Internet.	It is possible to install the software "offline". Please follow the instructions in the Software Installation manual.
Error message: "cannot create database".	A Mobility Monitor database is available already	A new database can be created only if one is not already available on the server. Existing databases can be deleted using the SQL Management Studio.
"Test Connection" fails.	The database does not yet exist.	"Test Connection" (→ Chapter 3.2.2) only works if the database already exists. For an initial installation just click on Ok.
The installation of SQL Server fails.	You are using Windows 8 or a version of SQL Server is already installed.	If any errors occur during the automatic installation of SQL Server Express, the installation can be done manually. The following links can be used: 64-bit: http://www.compliant-concept.ch/software/MobilityAndCareManager/1.0/SqlExpress2008R2/SQLEXPR_x64_ENU.EXE 32-bit: http://www.compliant-concept.ch/software/MobilityAndCareManager/1.0/SqlExpress2008R2/SQLEXPR32_x86_ENU.EXE

The user cannot connect to the central database of Mobility & Care Manager.	The user does not have permission to access the database.	Please assign the respective rights to the appropriate users. For this, SQL Management Studio can be used. Please assign the rights "db_owner" in SQL Management Studio.
	The SQL server is not configured correctly.	Please check if the SQL Server has been installed and configured following the separately available "SQL Server Installation Guide".
	A firewall is blocking the network connection to the database server.	

11.2. Importing of Mobility Data

Error Description	Possible Cause	Solution
There is **no data** on the USB flash drive	The USB flash drive was pulled out before the copy operation was completed. When copying is completed successfully, the green “Data Transfer” light stops flashing.	If you're using an original, compliant concept provided, USB flash drive, you have to return to the Mobility Monitor control unit and try to collect the data again. After connecting the USB flash drive the green data transfer light should blink for several seconds. Once saving is successfully completed, the light will stop blinking and you can remove the USB flash drive again. For Mobility Monitor MX devices a short beep will sound after a successful saving operation.
	A USB flash drive not provided by compliant concept was used or the USB flash drive was accidentally completely reformatted.	
	The data has already been loaded onto another PC and was automatically deleted after the operation.	Disable the option "delete data after successful import". In Settings a default value can be specified for this purpose.
The PC software **does not recognize** that a **USB flash drive** is plugged in.	A USB flash drive not provided by compliant concept was used or the USB flash drive was reformatted.	If a USB flash drive provided by compliant concept was used (which has not been reformatted), please wait a minute and then try again.
	The PC has not recognized the USB flash drive yet.	
	The USB port is locked.	Ask IT staff if the USB port is possibly disabled and if it can be unlocked for you.
There is **data** on the flash drive, which **should not** be **imported.**		In the Import View of the PC software it is possible to delete data. Click on the "red cross", and then confirm the removal.

11.4. Data Analysis

Error Description	Possible Cause	Solution
The data was assigned to **the wrong patient**.	Incorrect operation	It is possible to manually move the data to another patient. To do so, go to the patient view and open the patient to whom the data is currently assigned. Then you can assign the individual data to a different patient.

12. How to Reach Us

Do you have questions about Mobility Monitor and Mobility & Care Manager? Our Support Team will gladly assist you by phone or email.

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