



User manual qube**CONTROLLER**





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GENERAL INFORMATION

DISPOSAL

As our deliveries may include batteries and accumulators, we are obliged under *Batteriegesetz (BattG)* [German Battery Act] to point the following out to you:

Batteries and accumulators must not be disposed of as household waste. Used batteries may contain harmful substances which may cause damage to the environment or your health if they are not stored or disposed of properly. However, batteries also include important raw materials, such as iron, zinc, manganese or nickel, and can be recycled.

After use, you can either send the batteries back to us or return them for free in the immediate vicinity (e.g. in a shop or at municipal collection points or in our dispatch warehouse). Returning batteries in retail shops is restricted to a reasonable quantity for end users as well as being restricted to those used batteries which the retailer offers or has offered as new batteries in their product range.

UPDATES

Please do not implement any updates to new operating systems of the tablet manufacturer Apple without having them authorised by SKILLQUBE. However, we kindly ask you to update the application regularly so that we can guarantee the full functionality and compatibility. If you have any further questions or experience technical problems, please do not hesitate to contact us under www.skillqube.com/support.

SYSTEM SETTINGS

The qubeSERIES offers the option of adapting pre-defined settings for all monitors as well as the controller. This includes, for instance, changing the units for temperature, artificial ventilation and blood sugar or setting the reanimation duration of the AED for the monitors

OPENING THE CONTROL CENTRE

To open the control centre, swipe from the bottom of the screen upwards on any screen. On an iPad with IOS 12 or a newer version, swipe from the top right downwards. With older versions, swipe from the bottom to the top.

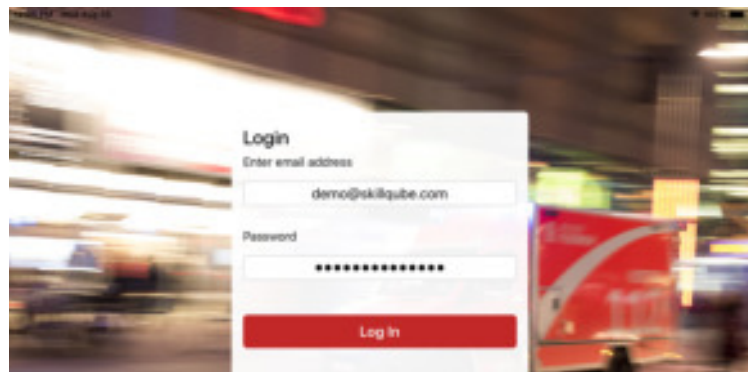
ESTABLISHING A WIFI CONNECTION

Before starting the simulation, ensure that the controller, monitor and assessment are in the same WIFI. For this purpose, in the Home screen, open Settings > WIFI, and select the corresponding network. Repeat this on all devices.



ACTIVATING THE CONTROLLER

In the latest version, qubeSERIE users can decide on which iPads the controller is to be activated. After the initial installation, you will be prompted to log into the cloud. After a successful login, the controller is activated and can be used. If the hardware is renewed or is to be replaced due to a defect, the controller can be deactivated and reactivated on a new device. Only selected persons of an organisation can log in or out. Further information is provided in the qubeCLOUD manual.



CONNECTING SYSTEMS FOR LOGIN

When connecting the controller and the monitor, please ensure that the systems are located in one network to guarantee a stable connection. (Interfering frequencies in the direct surroundings may impair the connection and even cause a loss of connection in the worst case)





To couple the system, now tap on the red flashing “Connect device” button. When pressing the button, all available devices in the area are displayed on the screen. (Figure 2) Search for your monitor and select it. On the monitor, you will be prompted to connect the controller with the monitor (figure 3). Once the devices have been connected, a check mark will appear as confirmation.



CONTROLLER – CONTROLLING THE VITAL VALUES

In “free scenarios”, the patient is controlled via the control module located in the centre. You have the option of switching the values on or off, changing the numeric value or the wave form or implementing other settings. Each module has an identical structure to reduce complexity. The structure is arranged from the bottom to the top, as follows: (Figure 4)

In the modules, the target and the actual value areas are displayed separately. The upper area displays the actual values (numerical value and wave form) which are visible to the participants on the monitor if it is switched on. The target values are displayed in the lower area. (Numeric value and wave form

By tapping on the wave form (figure 5), the submenu with all available wave forms is displayed. By selecting the “i” button, additional information can be





displayed. Tap the ECG wave form to select it. The selected wave form is framed in yellow, and the selection window closes. All vital values are converted to the values to be expected (pre-set if activated in the AppSettings). Subsequently, in the bottom right, select “Send” in order to send the new values to the monitor.

In the extended settings (figure 6), you have the option of setting the pacer threshold as well as the PP difference. With the pacer threshold, you can set the mA value which is to be achieved on the monitor for the patient to react. With the PP difference, you can set the difference between the eclectically derived ECG heart rate and the measured heart rate via the SpO2 sensor. Additionally, poor circulation and the CO display are indicated here. You can furthermore set the sound volume of the iPad monitor.



SP02

SpO2 is directly connected to the blood pressure. This means that when the blood pressure drops, the SpO2 wave form becomes smaller too. If the systolic blood pressure falls under 50 mmHg, the wave form is automatically displayed as flatline, and the numeric value is replaced by a “?”

There is also an option of simulating a situation in which the SpO2 derivation is not working correctly. For this purpose, “Cold hand” is activated in the settings of SpO2.

Using IABD supports 2 functions of the unit. On the one hand, it is used for displaying the regular NIBD blood pressure value. For this purpose, the instructor only needs to set the desired value. When a participant measures the blood pressure on the unit, the set value is displayed. If the instructor has set a trend time, the value present on the controller at the point in time at which the measurement is terminated is displayed. Via the extended settings, you can de-couple the systole and the diastole in order to set both values independently from each other. By activating and deactivating the IABD value, you can activate the arterial wave form on the monitor. When the artery is switched on, all values are directly displayed on the monitor; for this reason, the system sends you a new security query. To separate the systole and the diastole, tap onto the lock symbol. If it is opened, the systole and the diastole can be set independently from each other. If it is closed, a dependency is given again



ETCO2

EtCo2 offers different wave forms. When etCo2 is switched on, the respiratory frequency is activated automatically. When using EtCo2, it is to be ensured that the respiratory frequency is always greater than 0 since, otherwise, no wave form is visible.

RESPIRATORY FREQUENCY

Under the extended settings, the respiratory frequency includes the option of setting the CO. This can then be displayed on the corresponding devices (monitor interfaces).

SENDING THE TREND TIME AND VITAL PARAMETERS

If new values are set, the button "Send" changes its colour from grey to green. If the button is coloured, this means that a new dataset with vital parameters can be sent to the monitor. Before sending, the period (trend time) of the corresponding change can be adapted, i.e. how quickly the newly set values shall change. Here, several values can be controlled simultaneously, or each value can be controlled independently. After sending, the button is displayed in grey again.

IMPACTING SENT VITAL PARAMETERS WITH TREND TIME

By moving the desired slider, the instructor can select a submenu offering the following options:

Stop all trends -> All active trends will be stopped and can be set again

Stop SpO2 trend -> Only the specifically selected trend will be stopped. All other trends remain unaffected.

Continue all trends -> All trends will continue running as usual.



REANIMATION

To simplify the processing of reanimation situations, instructors can change over to the CPR area. Here, the instructor can select which rhythm is to be set after the shock, including a trend time. Additionally, the total number of shocks administered is displayed. If the “Artefacts” button is activated during reanimation, the assessment starts and, in the end, indicates the CPR fraction value.

If the “PEA” button is pressed, all values except for the heart rate fall to 0. PEA remains illuminated in red until the blood pressure or EtCo2 value is changed. The “PEA” button can be deactivated by pressing it again.

To be able to use the CPR feedback, you will need the controller, the monitor and the CPR sensors by SKILLQUBE. The sensors are connected via Bluetooth. To connect the sensors, please proceed as follows.

- Connect the controller and the monitor
- Move the CPR sensors within reach of the monitors (50cm)
- On the controller, under “Menu”, tap on “Integrate CPR sensor”
- The system then automatically searches the sensors in the surroundings of the iPad monitor
- The sensors found can now be connected via “Connect”
- The system is ready to start and can be used

To register the performance of the participants, you can enter the names in the beginning of the scenario. Now open the CPR view; you can see the participants who you have entered before. By selecting the participant, the reanimation performance is allocated to the corresponding participant. After the training, each participant has their individual performance displayed in the logbook.



CONNECTING SYSTEMS

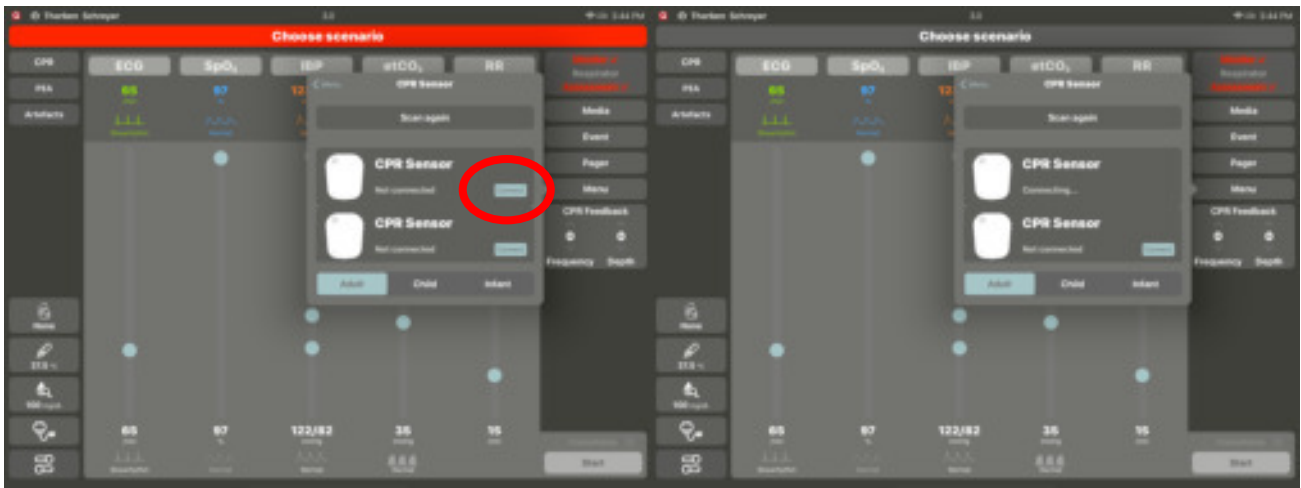
To successfully connect the systems, take the sensor out of the charging device and ensure that the sensor battery is not empty. Then connect your controller with the monitor. After a successful connection, now, the surface should look like displayed in the figure below.

Subsequently, move the sensor close to the monitor to establish a connection. For this purpose, open the "Menu" tab on the controller and press "CPR sensor". (If you use the CPR feedback for the first time on the monitor used, a prompt will appear asking whether the app is allowed to access Bluetooth. Confirm this with "OK")



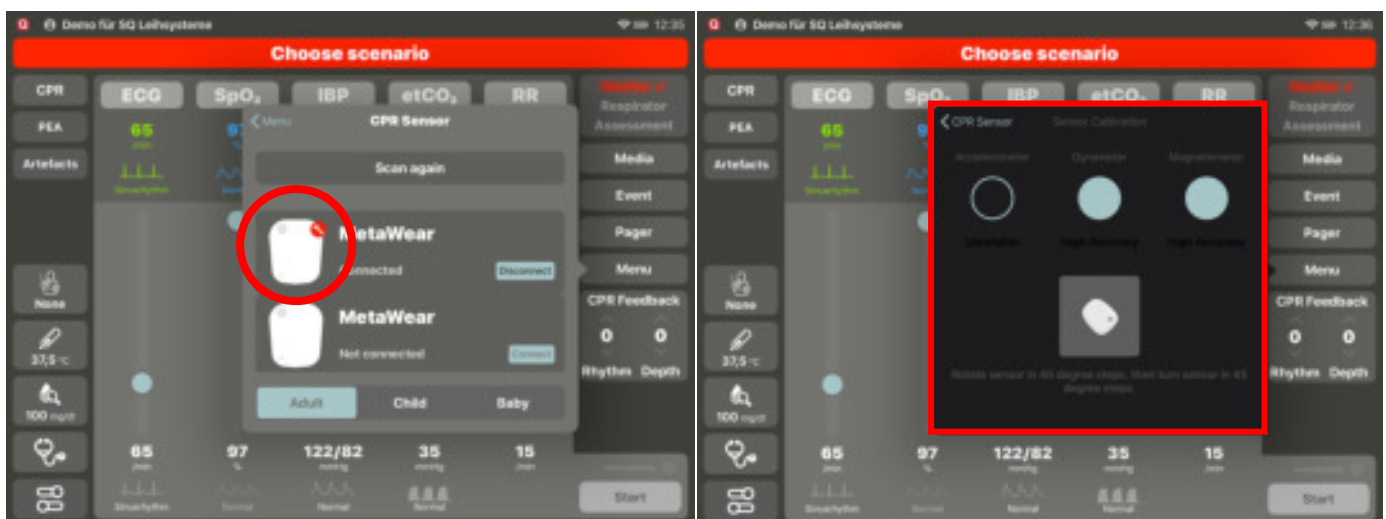


The monitor will now search for all sensors in the vicinity; for this purpose, Bluetooth must be activated! Now tap on Connect; the selected sensor will flash briefly in the beginning.



CALIBRATING THE SENSOR

If a red open-end wrench is visible on the displayed sensor, tap on it and follow the instructions until they disappear. Once all steps have been correctly implemented, the sensor is calibrated and connected.





CPR POD

Once you have successfully connected the sensor and no calibration is required, insert the sensor into the CPR Pod included in the scope of delivery. Here, please ensure the correct orientation of the sensor; the upper side must be pointed upwards in the pod.



CORRECT



WRONG

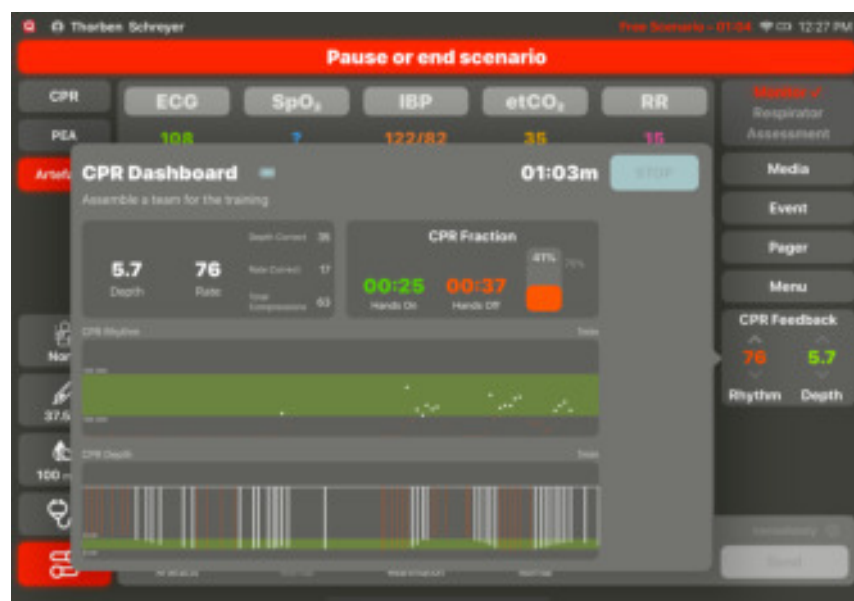


REPRESENTATION OF THE CPR DASHBOARD

In the left-hand field, the compression depth and speed as well as the total number of compressions carried out, and, above it, information as to how often the participant has pressed deep enough and whether the correct speed of the compressions has been achieved, are displayed to the instructor.

In the top right field, the CPR fraction is displayed; here, the hands-on/hands-off time is indicated in %. A fraction between 60 – 80% is ideal. A high-performance CPR is given as of 90%.

The field for the CPR rhythm indicates the compression speed in the course of one minute. This should be between 100 – 120/min. The lower field displays the compression depth, which can be set in the app settings, so that it can be adjusted to the usual guidelines. The values displayed in white are the correctly implemented ones, while the values displayed in red are the incorrectly implemented ones.



ASSESSMENT CONTROL

In addition to the monitor, the assessment app can be connected to the controller and will then provide the values for temperature, blood sugar and auscultation. To change the values, press the corresponding field in the bottom left corner of the controller and change the values as desired. These will be sent directly and displayed on the assessment app when opening it.

PAGER ALARM

Participations in a simulation can be alarmed in the simulation via a pager. For this purpose, the assessment software must be installed on a terminal device. By default, SKILLQUBE delivers an iPod Touch for this purpose.



The alarm texts can be entered and stored on the controller as desired. An alarm is issued if the instructor taps onto one of the alarm notifications entered before. The latter is then displayed with an alarm sound and a displayed pager on the assessment app. The participant can confirm the alarm by tapping on the monitor of the assessment app. An alarm may be issued at any point in time.

VENTILATION DEVICE

If a ventilation device is connected to the controller, the icon for the control and/or overview for the ventilation device appears in the left bottom corner. Here, the instructor is informed about all set values and the current ventilation mode. Based on this information, the instructor can react to the settings of the participants at all times and change the patient.

MENU

To provide the instructor with a better overview, various menu points have been summarised. This includes the training logs, the settings of the monitor volume at the iPad, the integration of a CPR sensor for using the CPR feedback and access to the AppSettings, which can no accessed more easily.

TRAINING LOGS

Training logs are created for each scenario. They are used for logging the implemented measures of the participants in the simulation and the set values at the controller by the instructor.

To open them, tap on “Menu” and then on “Training logs”. All available logs will be displayed. By tapping on the desired log again, the latter is displayed. It is possible to transfer it to another device via the Apple export function. By swiping from the left to the right, you are provided with the option of deleting the training log. Alternatively, via “Edit”, a multiple selection can be made to delete it. Once logs have been deleted, they can no longer be restored.

INTEGRATING THE CPR SENSOR

You need a CPR sensor to use the CPR mode. To integrate the CPR sensor, proceed as described under CPR feedback. Via the selection “Adult, child, baby”, you can allocate the values set by you in the app settings as quick selection. These are decisive for the compression depth and frequency as well as the related evaluation.



APP SETTINGS

By means of the App settings menu item, you can access the app settings, via which the basic controller settings can be implemented. The following settings can be made:

Setting	Value
Temperature unit	°C or °F
Blood sugar unit	mg/dl or mmol/l
Co2 unit	mmHg or kPa
Parameter pre-settings on/off	Defines whether pre-set vital values are taken over
CPR settings	CPR pre-settings (baby, child, adult) with frequency and compression depth

MEDIA

You can send all media present on the iPad to the assessment app. For this purpose, tap the "Media" button in the top left corner and, subsequently, select the image or video that you wish to send. When pressing "Send", the image will be sent to the assessment app.

EVENT DOCUMENTATION

Via the event documentation, you can document special events in the training log. Pre-fabricated events exist which you can supplement by your own. For this purpose, enter the desired text in the text field.

Select "Save" to add your event to the library. All events marked with * can be deleted by swiping from the right to the left.



SCENARIOS IN THE qubeController

You can create scenarios in the qubeCloud, which are then played back via the controller. To ensure that the scenarios can be stored on your system, you must connect to the internet and establish a cloud connection with your access data. Once the scenarios have been updated, the internet connection is no longer required. An internet connection is only required if you wish to update the existing scenarios. The creation of a scenario is explained in detail in the qubeCloud manual.

LOGIN TO THE CLOUD

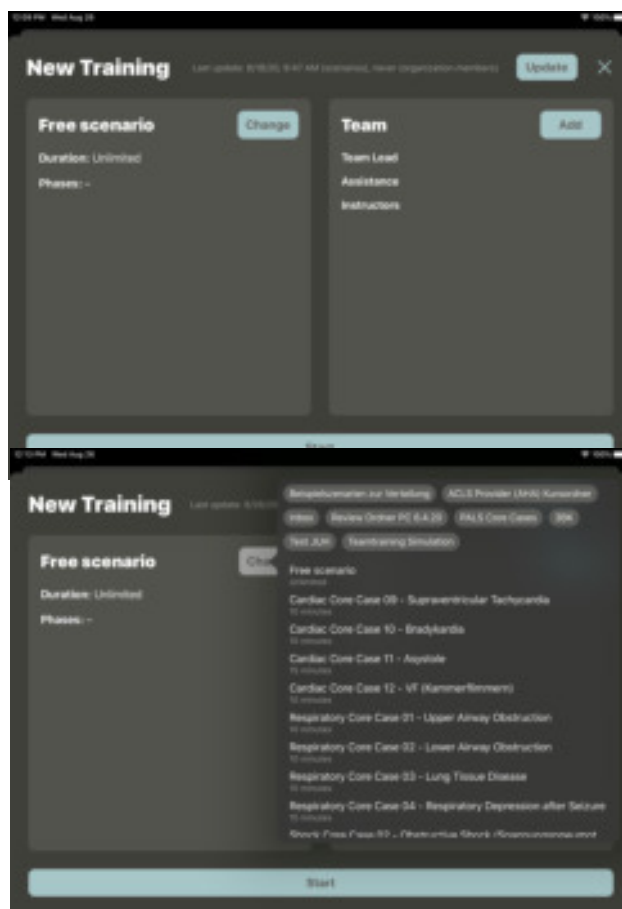
To log in to the cloud, if this has not been done already, select “Login” (1) in the top left corner. A login window appears. The login data is identical to the login data used in the qubeCloud.

To log out, tap on your name and confirm with “Log out”.

SCENARIOS

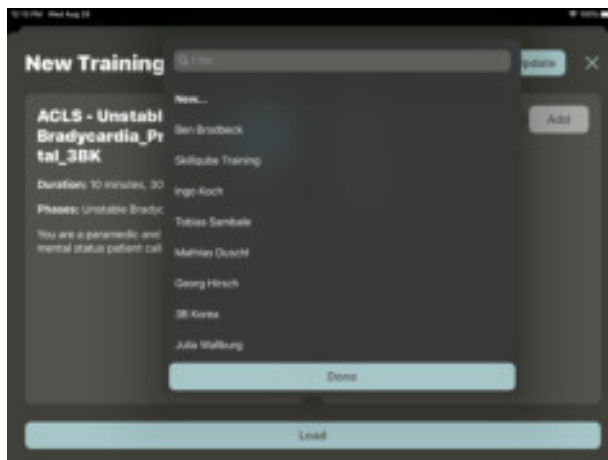
Tap on “Select scenario” to use the scenarios from your cloud. The Scenario menu (13, figure) will appear.

Here, you can update the scenarios and users by tapping on Update. The timeliness will be notified to you by means of a time stamp. If all data is up-to-date, you can select a scenario by tapping on “Select”. An overview with all approved scenarios appears. (14, figure) Select the desired scenario and tap on it. It is then loaded into the overview. Subsequently, you can invite participants to the scenario.





These are either established in your cloud or can be added manually (figure 15).



After having selected all participants and the scenario, you can load the scenario (figure 16 & 17)



SCENARIO DESCRIPTION

In the scenario description, the instructor can gather all relevant information on the scenario. The description is written in the cloud.





CHECKLISTS

Checklists are cross-phase and can be opened, displayed and marked as implemented at any time. Implemented tasks are displayed with a checkmark after the scenario, while the outstanding scenarios are displayed with a X in the logbook.



MEDIA

All previously uploaded media intended for the scenario are displayed here. The media can be transferred to the assessment app and displayed there.

STARTING OR CHANGING A SCENARIO

By tapping onto the “Play” button, the scenario is started. The scenario can be changed by tapping on “X” and selecting a new one.

PAUSING OR TERMINATING THE SCENARIO

Once the scenario has been started, it can be paused or terminated by tapping on the “Pause” button. The pause can be terminated again and the scenario is continued with a 3-seconds countdown.

If the scenario is terminated, the logbook can be viewed afterwards.

CONTROLLING THE SCENARIO

To ensure that the instructor can concentrate on the participants during the scenario, the controller has been designed in a way that the instructor can confirm measures, and the phases are then implemented automatically.



PHASES

The phases are determined in the qubeCloud. Here, it is also defined whether a duration or trend time is stored as well.

If a trend time is stored, the red bar appears above the set trend time. A “duration” can also be stored for a phase; in this case, the red bar is then reduced in size. Once the “duration” has expired, the phase is changed automatically.

Phase changes are offered once all defined measures have been done, or they are implemented automatically if a defibrillation has been carried out or the duration of a phase (if set) has been expired. There is also an option of changing a phase by tapping on it. With every change, the stored parameter is taken over and set correspondingly.

The scenario must aim at ensuring that the instructor spends less time with controlling the controller and is thus able to focus on the measures of the participants.

MEASURES

Each phase may contain measures. These are stipulated in the cloud. Here, it is differentiated between phases which are detected by the system and measures which are to be confirmed by the instructor themselves. Measures which are detected automatically have an icon, while measures which are to be confirmed by the instructor do not.



Once all measures of a phase have been implemented, the automatic change is offered. The latter can be confirmed or cancelled.

Measures are displayed as implemented or not implemented in the end of the logbook.

WRITTEN LOGBOOKS

Logbooks can be accessed via the menu at any time and can be opened and distributed



IMPRINT

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