



# **SURGIVERSE** **EDUCATION**

## User Guide

### Surgiverse® Education Digital Cockpit

This software is for training and educational purposes only. Not usable for medical purposes.  
Not a medical device.

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The user should consult the instructions for use before using the Surgiverse® Education Digital Cockpit mixed reality application.

The User Guide and the Terms of Use are available at all times for the user through the User Menu on the platform or by following these links:

- User Guide: [https://surgiverse.ai/user\\_guide\\_ed/](https://surgiverse.ai/user_guide_ed/)
- Terms of Use: [https://surgiverse.ai/cgu\\_ed/](https://surgiverse.ai/cgu_ed/)

### 1 Description

The Surgiverse® Education Digital Cockpit mixed reality application is designed for the display and manipulation of documents and 3D images of a session file generated from Surgiverse® Education Web-Planning. The application also enables users to communicate with Surgiverse® Education Web-Planning users. To be viewed and manipulated in Surgiverse® Digital Cockpit, documents must have been loaded into a Session file and 3D images must have been exported from Surgiverse® Education Web-Planning (see Surgiverse® Education Web-Planning User Guide).

### 2 Conditions before use

Surgiverse® Education Digital Cockpit has been designed to run on the Microsoft® HoloLens® 2 display device.



**Precaution of use:** Surgiverse® Education Digital Cockpit must not be installed on any device other than the Microsoft® HoloLens® 2.



**Precaution of use:** The Microsoft® HoloLens® 2 must be used in accordance with the Microsoft® instructions. These instructions are supplied with the Microsoft® HoloLens® 2 and should be consulted before the first use of the Surgiverse® Digital Cockpit application.



**Precaution of use:** No other application should be opened on Microsoft® HoloLens® 2 at the same time as Surgiverse® Digital Cockpit.



**Precaution of use:** The user must ensure that they have a good quality internet connection with a speed of at least 50 Mbp/s before connecting to Surgiverse® Education Digital Cockpit and during the whole use of the platform to ensure fluidity and prevent from latency.



**Precaution of use:** The user should make sure the Microsoft® HoloLens® 2 battery is charged before use and should monitor the battery level of the Microsoft® HoloLens® 2 during use.



**Precaution of use:** The user must carefully read all the warnings and errors that appear on the Microsoft® HoloLens® 2, some may be blocking without user action.



**Precaution of use:** The Microsoft® HoloLens® 2 must be cleaned in accordance with the Microsoft® HoloLens® 2 instructions for use (use only a 70% isopropyl alcohol solution). They must not be subjected to a sterilization process.

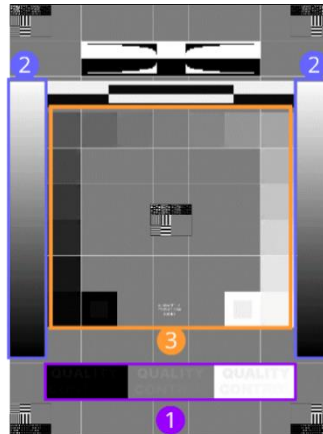


**Precaution of use:** The user must ensure that the date and time are correctly set on the Microsoft® HoloLens® 2.

















**Precaution of use:** Before each use, we advise the user to run mandatory calibration and verification test features available in the Microsoft® HoloLens® 2 settings menu or in the application launcher:

- Eye-calibration (available in the Microsoft® HoloLens® 2 settings menu)
- Display quality test pattern, check the visibility points:
  - “You should be able to read the mention “QUALITY CONTROL” inside the 3 bottom rectangles.” (see 1 in Figure 2)
  - “You should be able to distinguish the grayscale in the sidebands, without artifacts.” (see 2 in Figure 2)
  - “You should be able to distinguish the 19 grayscale squares around the perimeter of the central part of the pattern” (see 3 in Figure 2)
- Sound calibration test (sound quality test and microphone test)



*Display Quality Test Pattern*

-  **Precaution of use:** The user shall not disclose their login details to any third party.
-  **Precaution of use:** The user must ensure privacy during login to avoid password theft.
-  **Precaution of use:** For security reasons, the user is automatically logged out of their account if it is not used for 30 minutes.
-  **Precaution of use:** When starting communication, the user should ensure that all attendees to the call are expected to participate.
-  **Caution:** The user must not use Microsoft® HoloLens® 2 if they are partially or totally damaged and/or if all moving parts are not properly fixed.
-  **Caution:** It is not recommended Surgiverse® Education Digital Cockpit not to be used if any of the test pattern quality control points are not met.
-  **Caution:** Surgiverse® Education Digital Cockpit is not intended for use in the operating room during a surgical gesture implying patient's anatomy manipulation, surgical instruments manipulation, implantable medical device positioning or fixing or any other surgical operation involving direct or indirect contact with the patient lying on the operating table.
-  **Caution:** the device should be kept at least 15 cm away from a pacemaker to avoid any potential risk of interference with the pacemaker.  
When using with a medical device other than a pacemaker, consult the device manufacturer or your physician about the use of other electronic devices near your medical device.
-  **Caution:** Microsoft® HoloLens® 2 should not be used in contact with another device or heating areas.
-  **Caution:** Surgiverse® Education Digital Cockpit does not replace user's medical decision.
-  **Caution:** For temperature above proper functioning, Microsoft® HoloLens® 2 automatically switches off.
-  **Caution:** During communication with Surgiverse® Web-Planning users, the Surgiverse® Education Digital Cockpit user point of view including virtual objects may be shared and visible for all attendees to the call.
-  **Caution:** During communication with Surgiverse® Web-Planning users, captures of the shared Surgiverse® Education Digital Cockpit user point of view including virtual objects may be saved by any attendee to the call.
-  **Caution:** During communication with Surgiverse® Web-Planning users, the call may be recorded, including the Surgiverse® Education Digital Cockpit user point of view including virtual objects and the conversations.



**Caution:** The user should always check the scale and orientation of the used 3D objects. Opening several 3D objects may deteriorate the fluidity of the display.

## 3 Before starting the application

### 3.1 Calibration and tests

As mentioned in the precautions of use, mandatory calibration and test features should be run before starting a session in Surgiverse® Digital Cockpit. Calibration and test features are available either in the Microsoft® HoloLens® 2 settings menu or in the launcher menu.

Eye-calibration is available in the **Microsoft® HoloLens® 2 settings menu**: use the start gesture according to Microsoft® instructions to access the Microsoft® HoloLens® 2 settings menu.

Calibration is available at the following location: **System > Calibration > Eye Calibration > Run eye calibration**



Note: when Surgiverse® Education Digital Cockpit is launched by default, if eye-calibration has not been completed by a new user, the Microsoft® HoloLens® 2 shall detect it automatically and a pop-up shall be displayed proposing to launch the calibration. In this case, it is mandatory to complete calibration or some Surgiverse® Education Digital Cockpit features may not run properly.

### 3.2 Optional settings features

In addition to calibration and test features, the launcher menu provides access to optional settings features.

For users who have never used Microsoft® HoloLens® 2, the **HoloLens Tips** discovery application is available in the Microsoft® HoloLens® 2 start menu: use the start gesture according to Microsoft® instructions to access the Microsoft® HoloLens® 2 start menu.

### 3.3 Subscription

To access the features of Surgiverse® Education Digital Cockpit, the user must have a valid and active subscription for Surgiverse® Education.

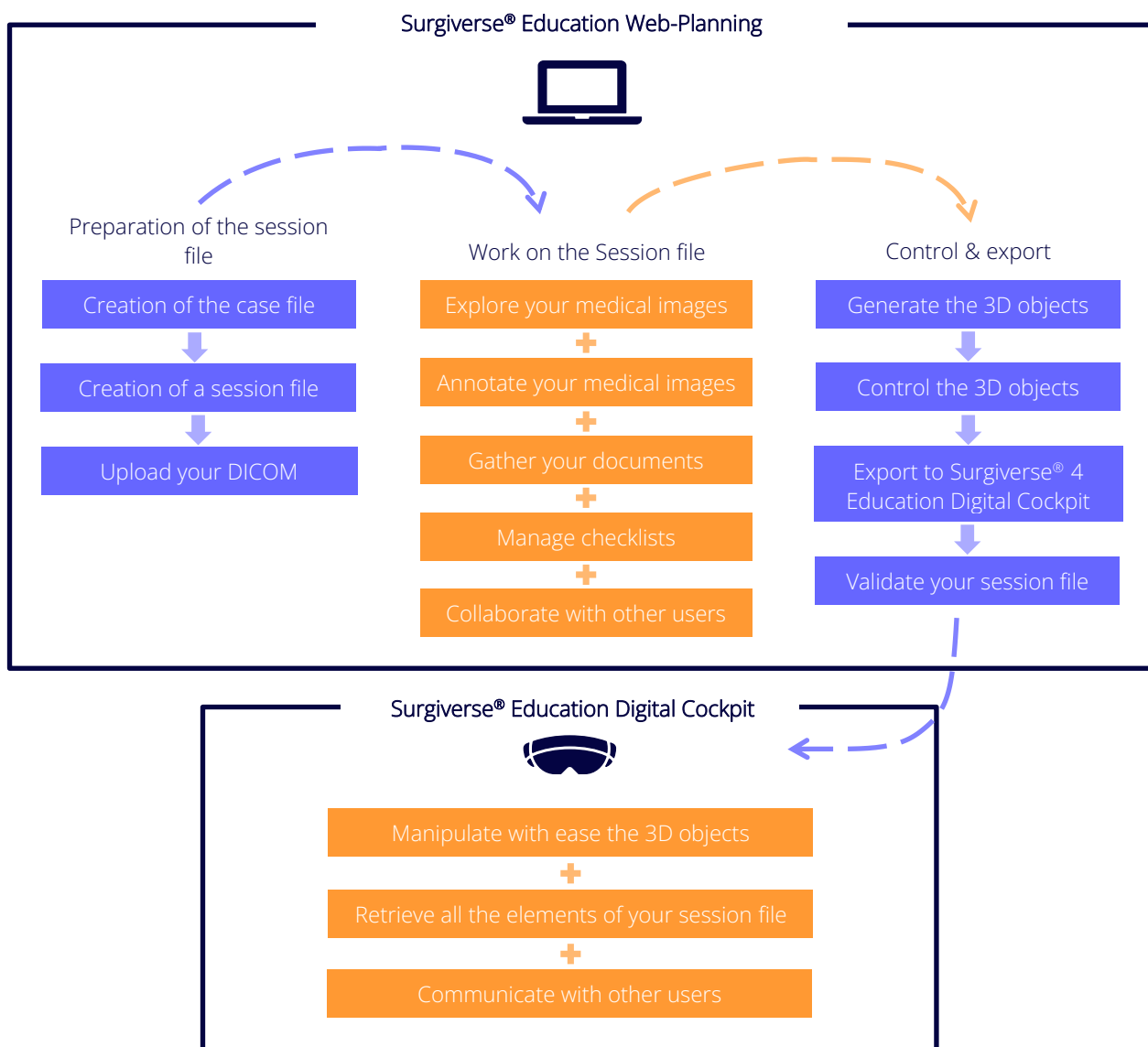
### 4 General description

#### 4.1 What is Surgiverse® Education Digital Cockpit?

Surgiverse® Education is a collaborative platform gathering all the elements used to prepare a session file on Surgiverse® Education Web-Planning and making them available in mixed reality glasses through Surgiverse® Education Digital Cockpit.

A session file is related to a case. It contains the analysis details performed on **3D models generated from DICOM files** (CT Scan or MRI) and other documents.

Surgiverse® Education Digital Cockpit enables the user to consult in mixed reality the sessions prepared with Surgiverse® Education Web-Planning.



### 4.2 Launching Surgiverse® Education Digital Cockpit

- ① Turn on your HoloLens device and enter your code.
- ② Surgiverse® Education Digital Cockpit application can be launched on the main menu if the application has been pinned or directly through the “All apps” menu.
- ③ Click on the Surgiverse® Education logo to launch the application and wait for it to load.

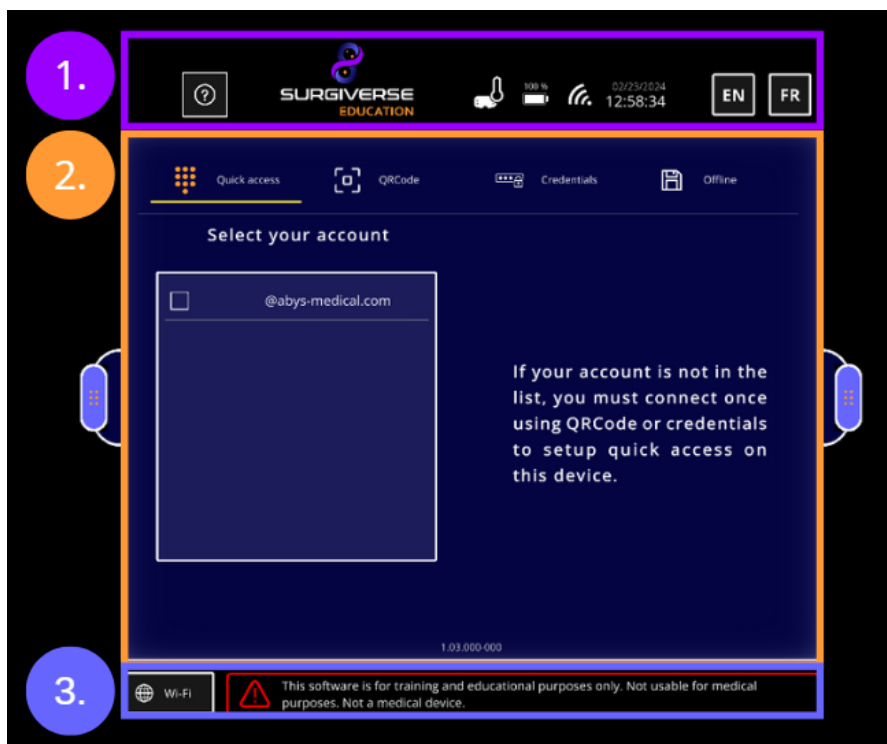


Note: You can always access the HoloLens menu by looking at your wrist with the hand palm facing upwards and holding on the home icon.

### 4.3 Overview of the Surgiverse® Education Digital Cockpit interface

When launching the Surgiverse® Education Digital Cockpit the first page that appears is the launcher menu. The launcher menu is divided into three parts:

1. Headliner
2. Log in menu
3. Footer



#### 4.3.1 Headliner

The headliner gives you access to:



##### About page

You can access the User Guide and the Terms of Use by clicking on the buttons. This action will launch the web browser on your HoloLens.



##### Temperature indicator

Proper function of the HoloLens device requires optimal temperature. During the use of the device, it can overheat. The heat level icon will change color if the device is overheating. Four levels can be shown:



- blue
- yellow
- orange
- red

When the device reaches red heat level, a notification will appear.



Note: Overheating of the HoloLens device can cause the Surgiverse® Education Digital Cockpit application to malfunction.



**Caution:** For temperature above proper functioning, Microsoft® HoloLens® 2 automatically switches off.



### Battery

Battery level is showed in percentage. When battery level is under 25%, the icon will become red and a warning message will appear in your field of view.



### Wi-Fi status

16/07/2018  
13:37:42

### Date and Time



### Language

The available languages for Surgiverse® Education Digital Cockpit are English and French.

## 4.3.2 Log in menu

There are four tabs in the log in menu: three log in modes and access to offline mode. The following sections will detail how to log in each of these tabs.

### 4.3.2.1 Credentials

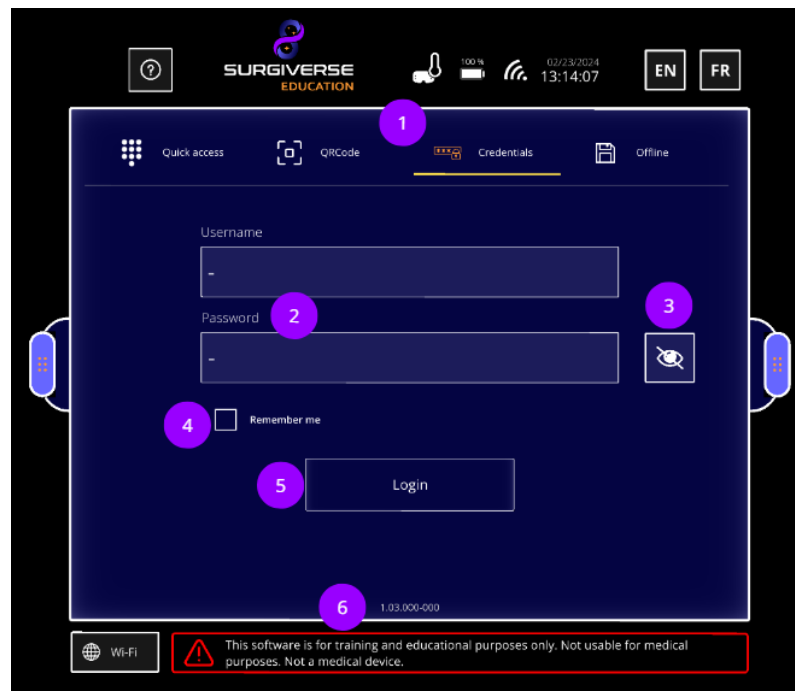
The tab "Credentials" (①) enables the user to connect to Surgiverse® Education Digital Cockpit with the credentials used on Surgiverse® Web-Planning (②).

The show/hide characters button (③) enables to display or hide password characters entered.

The checkbox "Remember me" (④) enables the user to save his username in text input field.

The "Login" button (⑤) sends the login request and checks credentials validity.

Software version is indicated on the bottom of the connection menu (⑥).



### 4.3.2.2 QR Code

The tab “Connect with QR Code” (①) enables the user to automatically connect to Surgiverse® Education Digital Cockpit by flashing an appropriate QR code provided on Surgiverse® Web-Planning.

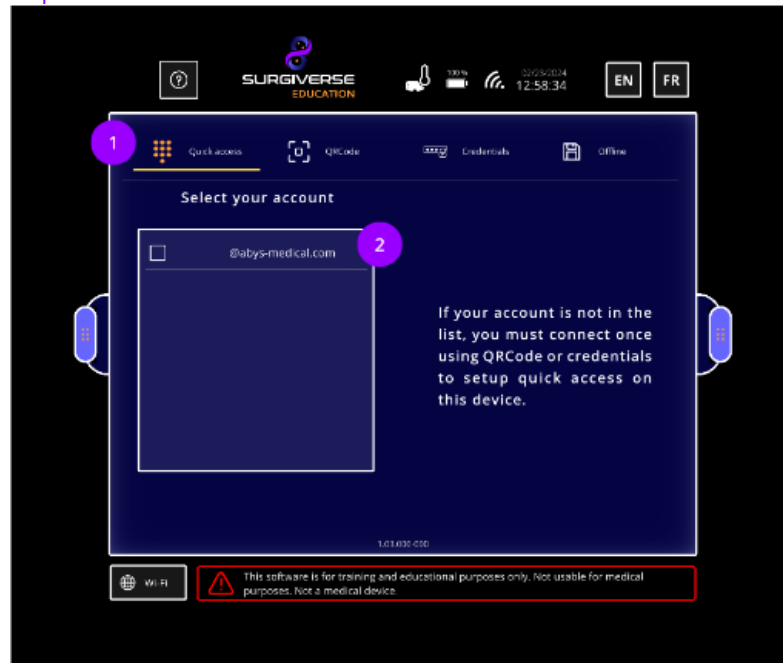
A crosshair (②) is displayed in user’s field of view to aim the QR code displayed on Surgiverse® Web-Planning.



### 4.3.2.3 Quick access

The tab “Connect with Quick access” (①) enables the user to connect to Surgiverse® Education Digital Cockpit with a PIN code created during the first connection on a particular HoloLens 2 device.

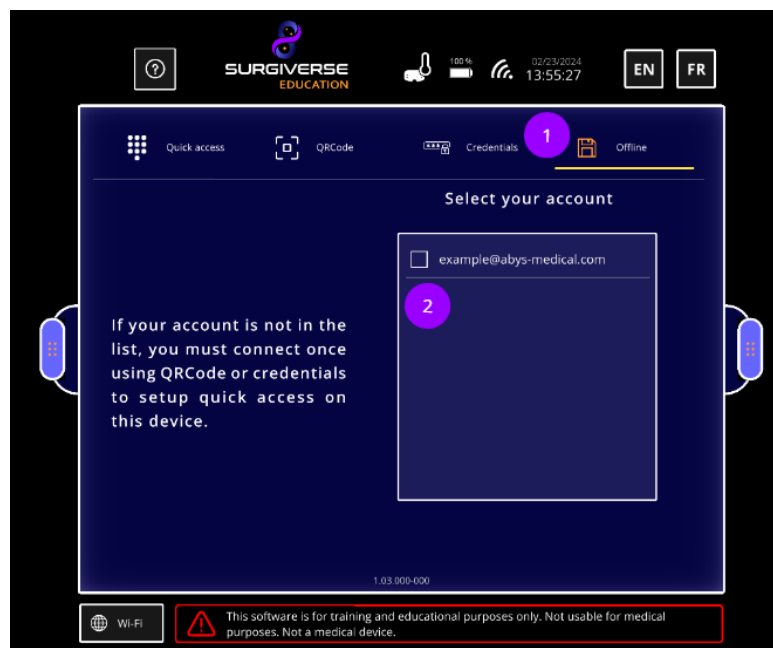
A tab (②) lists the IDs of users who have set up PIN codes on the HoloLens 2 device in use.



### 4.3.2.4 Offline mode

The tab "Offline" (①) enables the user to connect to Surgiverse® Education Digital Cockpit's sessions saved in the HoloLens 2 device being used. Access to offline mode is via a PIN code created during the first connection to offline mode on the HoloLens 2 device.

A tab (②) lists the IDs of users who have set up PIN codes on a HoloLens 2 device in use.



### 4.3.3 Information banner

On the upper part of the interface, an information banner provides information about the current session.

Settings button (①) enables to open the Settings menu.

About button (②) enables to open the About menu.

Notification button (③) enables to open the Notifications menu.

Account reminder (④) indicates the user account connected in the current session.

Temperature indicator (5) displays the Microsoft® HoloLens® 2 temperature level: four levels of temperature are rated in the application. When the temperature reaches the highest level, corresponding to the critical operating temperature, the icon is displayed in red color, and a notification is sent to the user.

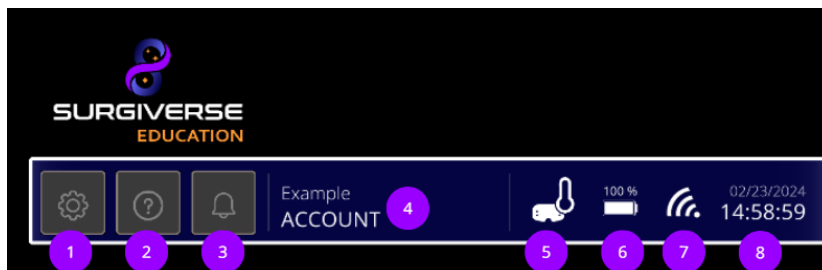


**Caution:** For temperature above proper functioning, Microsoft® HoloLens® 2 automatically switches off.

Battery level indicator (6) displays the Microsoft® HoloLens® 2 battery level (in %). When the level drops to 20% or less, the icon is displayed in red color. With a full battery level, Surgiverse® Education Digital Cockpit should last for 1h30 of use.

Network connection indicator (7) shows if the current session is connected to the network. In case of disconnection, the icon appears crossed out.

Date and time indicator (8) displays the time and date adjusted to the time zone set in the Microsoft® HoloLens® 2.



### 4.3.4 Home menu

Once connected to Surgiverse® Digital Cockpit, the user can reach the home menu and access the session files. The information banner is still present.

The Files tab (1) provides access to a list of sessions created by or shared with the user. This list can be refreshed when needed (2).



The user can manage their offline files (3) by selecting the sessions to be recorded locally.

The "Show my files only" button (4) filters the sessions created by the user only.

A text input field (5) enables to enter searching criterion in the list and automatically opens virtual keyboard to enter characters.

In the list, sessions can be sorted by each table entry.

Session status indicates:

- Validated Sessions  (6).
- Sessions in edition  (7).

If the list covers several pages, the arrow buttons on the side of the panel enable the user to scroll the pages.



### 4.3.5 Main menu

Once a session file is opened, the Main menu is displayed. The information banner is still present.

On the bread crumb on the top of the panel, the current opened session is indicated with its ID (①). The home button (②) enables to exit the current session and go back to the home menu and session list.

On the sides of the panel. Two handles (③) enable to grab and move the panel. They can be caught directly with the thumb and index or with the lasso.

Attached to the panel (as long as they are wired to the panel, they should move with it), two spawn points (④) materialize respectively the appearance areas of documents and 3D objects when they are opened. Each spawn point can be grabbed and moved independently from the panel (the wire then disappears).

On the left side of the panel, several tabs (⑤) provide access to contents of the session and specific features:

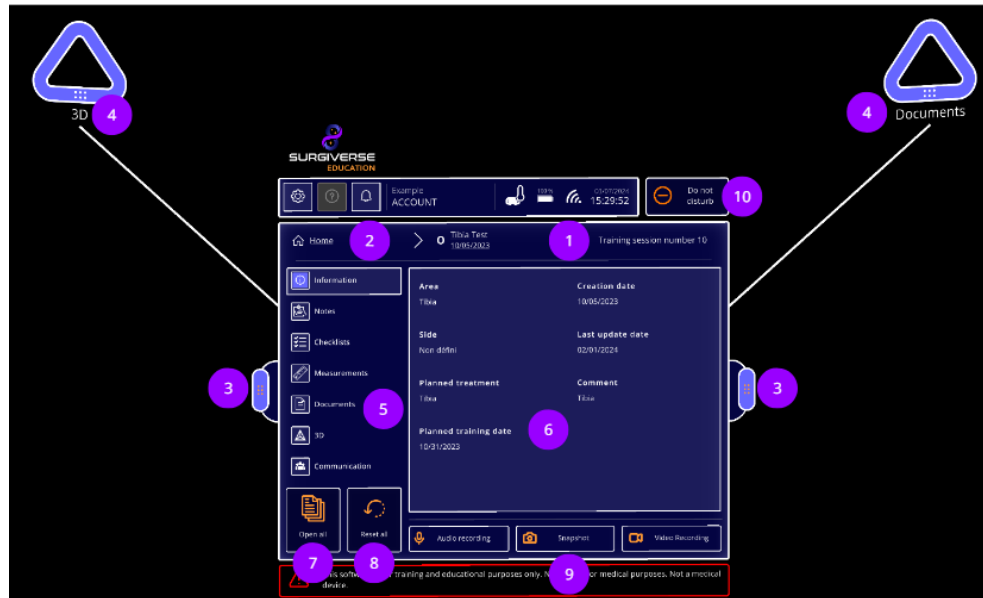
- **Information:** displays main data of the current session when filled on Surgiverse® Web-Planning form (⑥)
- **Notes:** displays notepad created on Surgiverse® Web-Planning
- **Checklists:** displays clickable/checkable checklists created on Surgiverse® Web-Planning
- **Measurements:** displays measurements taken on Surgiverse® Web-Planning
- **Documents:** provides access to the list of documents uploaded on Surgiverse® Web-Planning
- **3D:** provides access to the meshes exported from the series on Surgiverse® Web-Planning
- **Communication:** provides access to the communication feature.

On the bottom of the panel, "Open all" button (⑦) enables to open all the contents of the session file (Documents, 3D) on their respective spawn points.

"Reset all" button (⑧) enables to reset all opened contents of the session file (in position, orientation, and scale) on their respective spawn points when they have been moved, or rescaled.

Capture buttons (9) enable to activate respectively audio recording, snapshot mode, and video recording features.

"Do not disturb" button (10) enables to activate the "Do not disturb" mode.



### 4.3.6 Documents tab

The documents tab displays a list of documents uploaded to the session on Surgiverse® Web-Planning.

Documents can be of several types (1): images, pdf documents, sounds (audio records), video (video records).

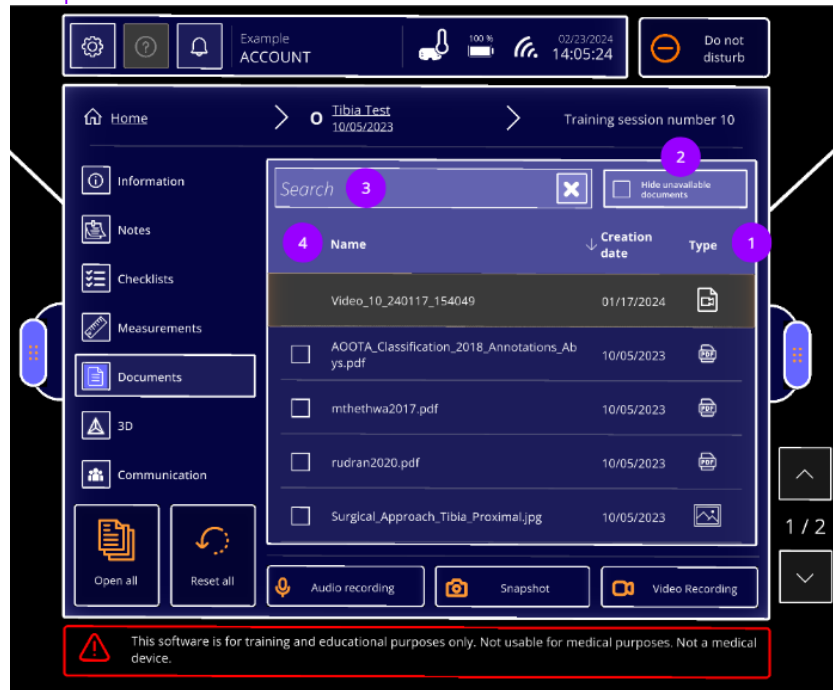


Note: as Surgiverse® Education Digital Cockpit does not provide any audio or video player, sounds and videos cannot be opened in Surgiverse® Education Digital Cockpit and appear in the list only as an indication. Buttons are not clickables for these types of documents.

The "Hide unavailable documents" button (2) enables to display only available documents in the list.

Searching tool (3) is also available in the documents list.

Clicking on an element in the list (4) opens it on the Documents spawn point. Clicking again on the element in the list closes the document.



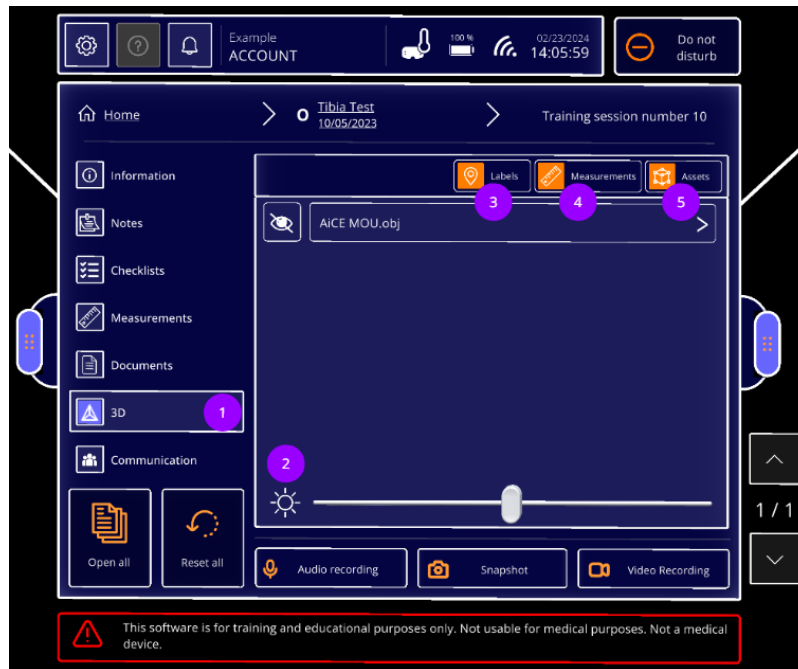
### 4.3.7 3D tab

The 3D tab displays (1) a list of 3D objects exported from the series on Surgiverse® Web-Planning.

Clicking on an element in the list opens it on the 3D spawn point. Clicking again on the element in the list closes the 3D object.

A brightness adjustment slider (2) enables to adjust the brightness of all 3D objects in the scene.

The 3D objects can have associated elements: labels (③), measurements (④) or assets (⑤). For each of these elements, the respective button allows the user to show or hide all the elements of the same type associated to the 3D object.



The associated elements (labels, measurements and assets) to a 3D object are listed in the 3D object menu (⑥). They are ordered (⑦) by type of element and can also be individually displayed when clicking on their respective eye icon (⑧).



### 4.3.8 Settings menu

Clicking on the settings button (①) always available in the information banner opens the Settings menu.

The following settings and features are available:

- Display quality test (②) also available in the launcher menu
- Sound calibration test (③) also available in the launcher menu



- Reset appearance zones button (④) enables to reset spawn points position on either side of the panel and wired to it, when they have been moved by the user
- Language settings button (⑤) also available in the launcher menu, enable to choose preferred language
- Lay-out mode activation toggle (⑥) activates Lay-out mode
- Lay-out settings button (⑦) opens layouts menu, enabling to delete existing layouts saved in memory
- First use mode toggle (⑧) activates First use mode
- Display virtual hands (⑨) displays or hide virtual hands as detected by the Microsoft HoloLens® 2
- Send statistics toggle (⑩) activates log recording for support and maintenance purposes
- Exit button (⑪) also available in the launcher menu, enables to exit Surgiverse® Digital Cockpit
- Logout button (⑫) also available in the launcher menu, enables to logout session

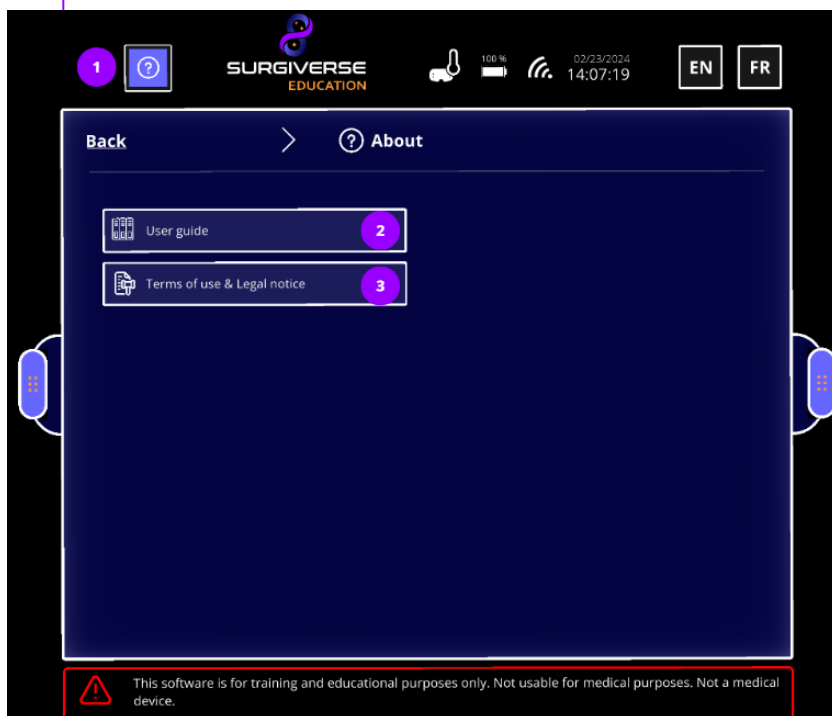


### 4.3.9 About menu

Clicking on the settings button (①) always available in the information banner opens the About menu and provides access to product documentation.

Dedicated buttons enable to open respectively:

- The user guide (②)
- The Terms of use and legal notice (③)

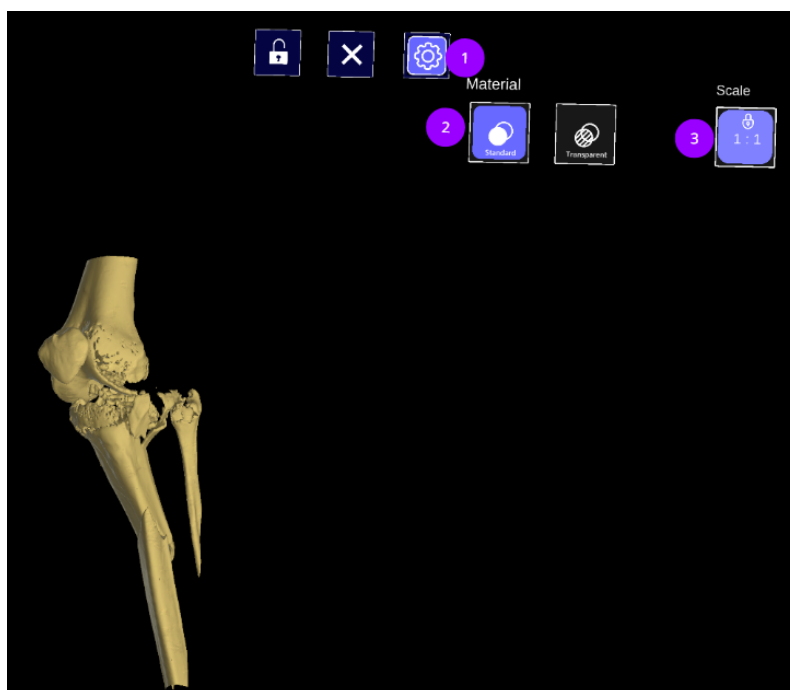


### 4.3.10 3D contextual menu

When a 3D object is opened, clicking on the 3D settings button (1) displays a contextual menu dedicated to the 3D object.

This menu provides access to:

- Display mode setting (2) enabling to display 3D object with a standard or transparent material
- Scale modification or lock at 1:1 (3)



### 4.3.11 Communication tab

Communication tab provides access to communication and sharing features with contacts who can be members of the user's team, or that have access to the session.

A list of contacts (①) shows contacts ID, rights on the current session, and communication status:

- = Connected/Available
- = In communication
- = Not available
- = Disconnected

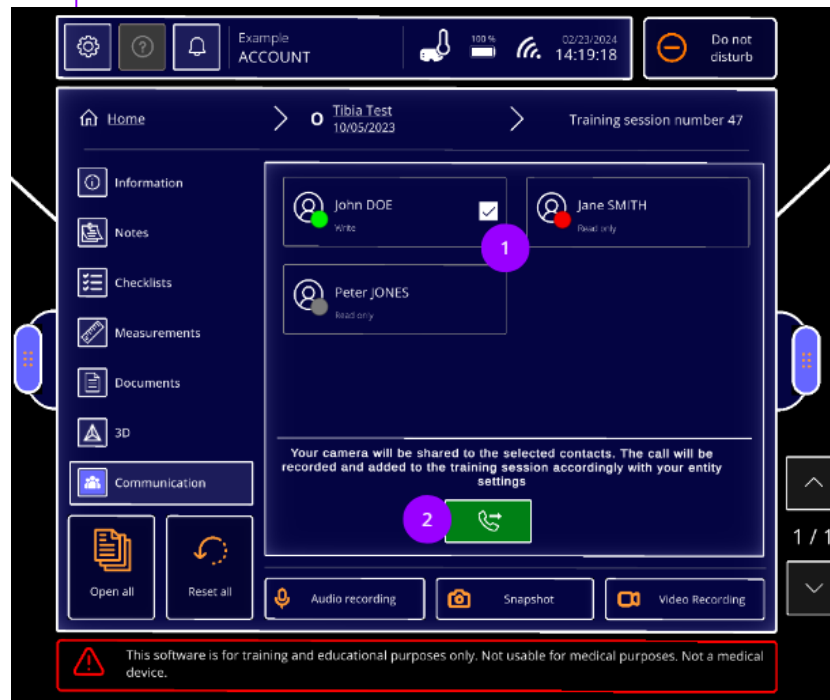
The interface features also a live broadcast button (②).



### 4.3.11.1 Call

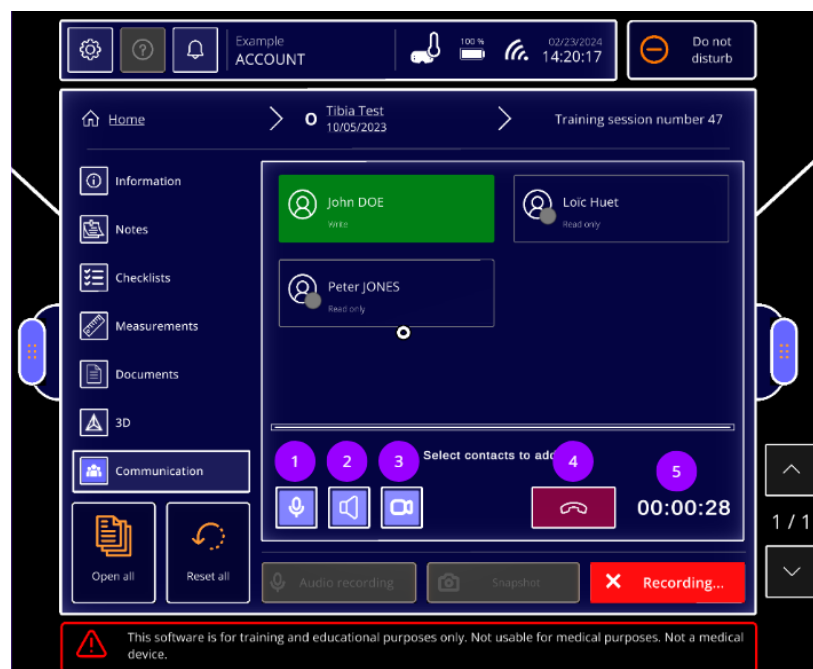
Clicking (①) on one or several available contacts enable to select them and to initiate a call.

Clicking on the start call button (②) enables to start a call.





During the communication, a communication toolbar is available:

- Mute/unmute button (1) enables to activate or deactivate user's microphone.
- Sound button (2)
- Sharing the point of view button (3) enables to activate or deactivate the display of user's point to contacts connected to the broadcast.
- End broadcast button (4) enables to exit the broadcast.
- A timer (5) is launched at the start of the communication and indicates the duration of the broadcast.



When the call is in progress and sharing mode is active:

The  to indicate a call is in progress, and the  icon to indicate active sharing mode.

Both stay visible in the up-right corner of the user's field of view.



**Caution:** During communication with Surgiverse® Education Web-Planning users, the Surgiverse® Education Digital Cockpit user point of view including virtual objects may be shared and visible for all attendees to the call.



**Caution:** During communication with Surgiverse® Web Planning users, captures of the shared Surgiverse® Education Digital Cockpit user point of view including virtual objects may be saved by any attendee to the call.



**Caution:** During communication with Surgiverse® Web Planning users, the call may be recorded, including the Surgiverse® Education Digital Cockpit user point of view including virtual objects and the conversations.



Note: according to the settings of the entity of the Surgiverse® Education Digital Cockpit user, communication may be automatically recorded and stored in the session's documents. The recordings are available in Surgiverse® Web Planning only.

Note: by default, sharing mode is activated, and during a call, all participants may see to the user's point of view.

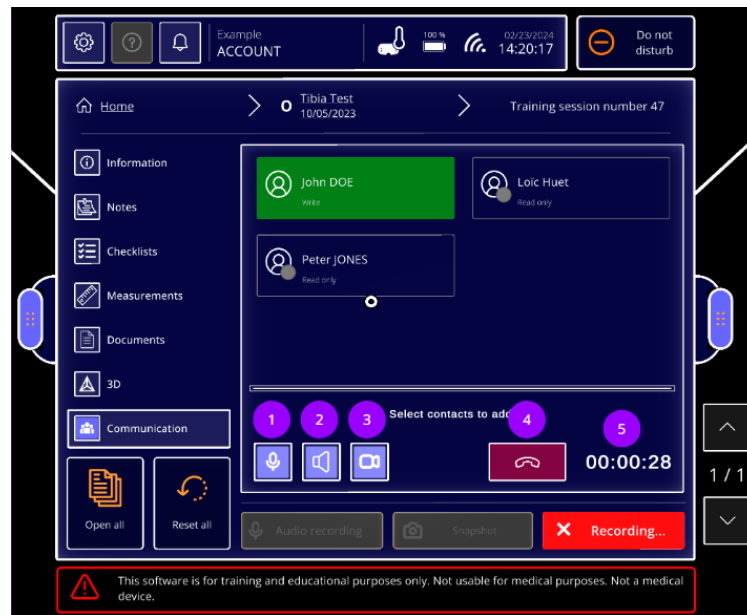
### 4.3.11.2 Live broadcast

Click on the live broadcast button (1) to start broadcasting.




During the broadcast, a communication toolbar is available:

- Mute/unmute button (1) enables to activate or deactivate user's microphone.
- Sound button (2)
- Sharing point of view button (3) enables to activate or deactivate the display of user's point to contacts in communication.
- End broadcast button (4) enables to hang up the call.
- A timer (5) is launched at the start of the communication and indicates the duration of the in-progress call.



When the live broadcast is in progress and sharing mode is active:

The  icon appears to indicate active sharing mode and to show the number of participants having joined the broadcast. It is visible at the upper right corner of the user's field of view.



**Caution:** During communication with Surgiverse® Web-Planning users, the Surgiverse® Education Digital Cockpit user point of view including virtual objects may be shared and visible for all attendees to the call.



**Caution:** During communication with Surgiverse® Web-Planning users, captures of the shared Surgiverse® Education Digital Cockpit user point of view including virtual objects may be saved by any attendee to the call.



**Caution:** During communication with Surgiverse® Web-Planning users, the call may be recorded, including the Surgiverse® Education Digital Cockpit user point of view including virtual objects and the conversations.


### 5 Index of Surgiverse® Education Digital Cockpit features

#### 5.1 Before starting, connect the Microsoft® HoloLens® 2 to the Internet



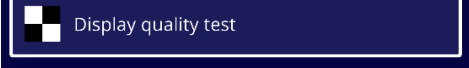
**Caution:** The user must not use Microsoft® HoloLens® 2 if they are partially or totally damaged and/or if all moving parts are not properly fixed.

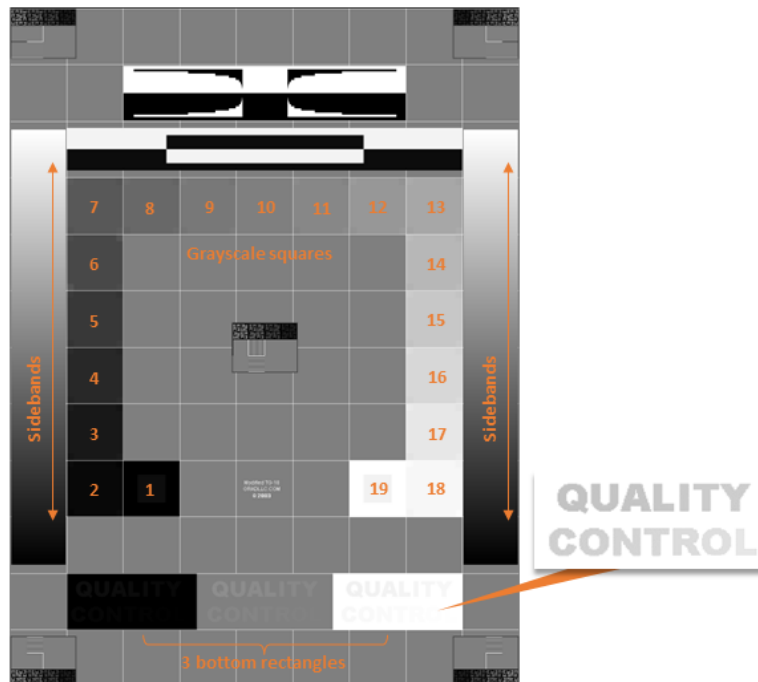
Once the application is launched, Launcher menu is opened. If needed, it is possible to set up the Wi-Fi to connect to the internet.

- ① Click on  to open the network settings menu.
- ② Select the desired Wi-Fi network.
- ③ Enter the Wi-Fi network password.

#### 5.2 Before starting, display quality pattern test

Once the application is launched, the launcher menu is opened. Before starting Surgiverse® Education Digital Cockpit and opening a session, it is advised to complete display quality test.

- ① Click on  to open the display quality test.
- ② Check the visibility points on the pattern displayed:
  - You should be able to read the mention "QUALITY CONTROL" inside the 3 bottom rectangles.
  - You should be able to distinguish the grayscale in the sidebands, without artifacts.
  - You should be able to distinguish the 19 grayscale squares around the perimeter of the central part of the pattern.



- ③ Click on  or "Back" button on the breadcrumb to go back to the Launcher menu.



**Caution:** it is recommended Surgiverse® Education Digital Cockpit not to be used if any of the test pattern quality control points are not met.


Before starting, sound level and microphone test are advised to be performed.

Once the application is launched. Launcher menu is opened. Before starting Surgiverse® Education Digital Cockpit and opening a session, it is advised to complete sound level and microphone test.


① Click on  to open the sound level and microphone test.

② Click on  to start the sound test.

You should distinctly hear the sound played. If not, consider increasing sound volume with the buttons on the side of the visor.

③ Click on  to start the microphone test.

④ Speak normally. You should see the dynamic sound level meter react to the sound. If not, microphone may be deactivated and communication feature of Surgiverse® Education Digital Cockpit will not work normally.

⑤ Click on  or “Back” button on the breadcrumb to go back to the Launcher menu.

### 5.3 Connection with login and password

After launching Surgiverse® Digital Cockpit, connection menu enables to log in to the application. You can use your credentials from Surgiverse® Web-Planning with an ID and a password.

① Click on  tab to use login and password connection.

② Click on the Username text input field to open the virtual keyboard

③ Enter your login with the virtual keyboard. Use your index for typing and favor slow gestures. A sound is emitted when a key on the virtual keyboard is pressed.

④ Close the virtual keyboard by clicking on the little cross button in the up-right corner of the keyboard.


⑤ If needed you can click on  checkbox to store your login for a next connection.

⑥ Click on the Password text input field to open the virtual keyboard

⑦ Enter your password with the virtual keyboard.

⑧ If needed you can click on to  display the password. Click again to hide it.

⑨ Close the virtual keyboard by clicking on the little cross button in the up-right corner of the keyboard.

⑩ Click on  to connect to Surgiverse® Digital Cockpit.

### 5.4 Connection with QR code

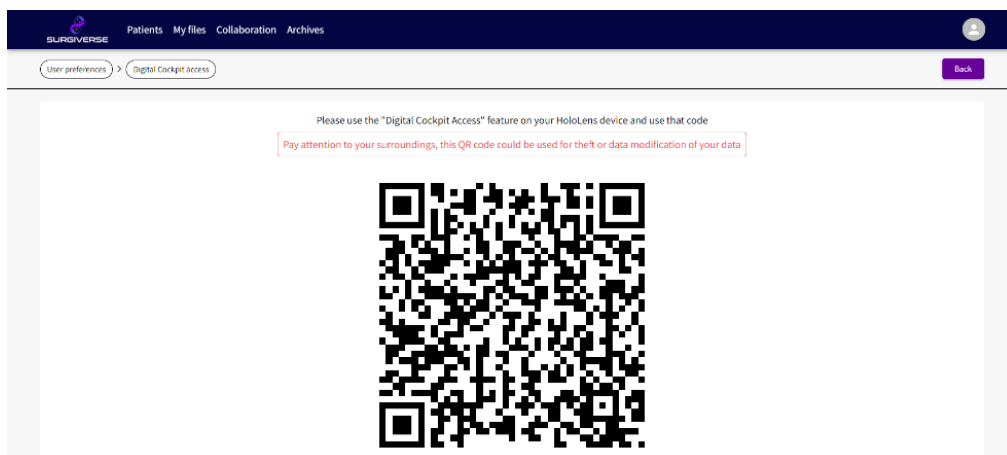
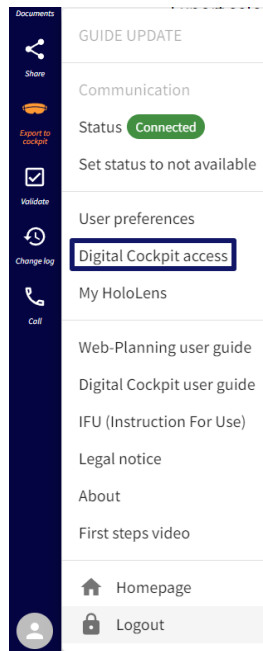
After launching Surgiverse® Digital Cockpit, connection menu enables to log in to the application. You can use QR code automatic connection.

To get QR code, you need to connect to Surgiverse® Web Planning and access your profile:

① In Surgiverse® Web Planning, click on the avatar  at the top right of the navigation bar to open user menu.



② Click on "Surgiverse® Education Digital Cockpit Access" to display QR code.



③ In Surgiverse® Digital Cockpit, click on  QRCode tab to use QR code connection.

④ A virtual pattern is displayed. Align the pattern on the frame of the QR code to optimize its scanning. A confirmation check is briefly displayed when QR code is recognized, and when connection succeeds.



Note: For safety reasons, the QR code changes every 30 sec.

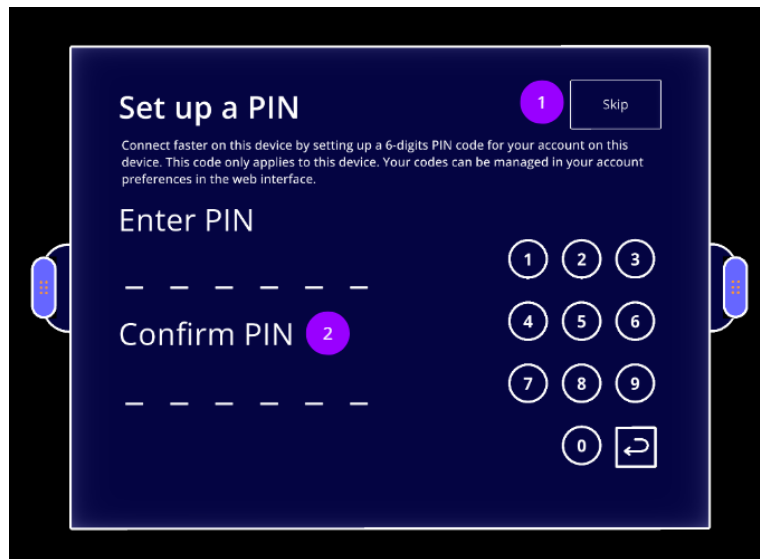
Note: You may need to reduce the brightness of your screen to optimize QR code scanning.

## 5.5 Connection with Quick access

### 5.5.1 First connection

When the user logs in to the application on a pair of HoloLens 2 for the first time, the application will suggest them to set up the quick access log in. The user can skip (①) this step as many times as they want.

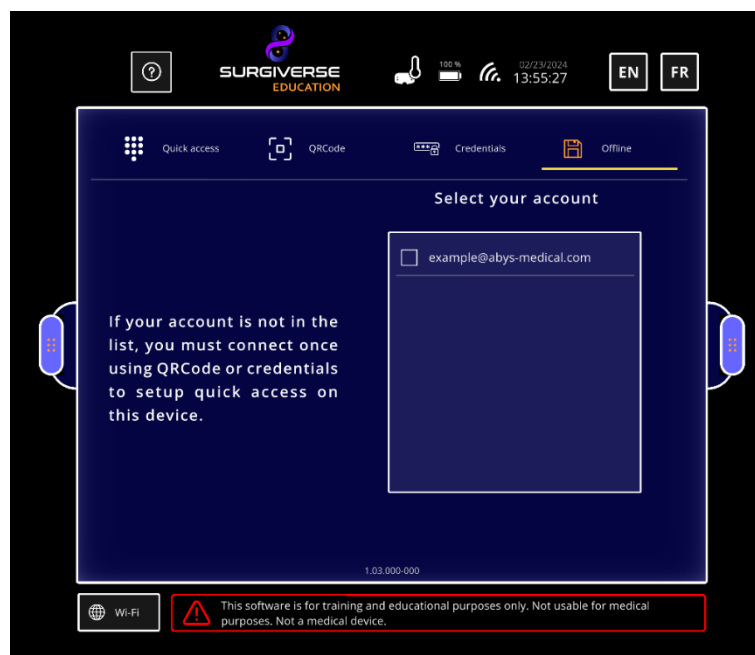
Setting up the quick access login requires the user to define a 6-digit PIN code that will be associated to their account and to the HoloLens 2 device. A confirmation of the code is needed (②).



### 5.5.2 Routine connection

Logging into the Surgiverse® Digital Cockpit using the quick access requires only 2 steps:

- ① Select your account on the list
- ② Enter your PIN code



## 5.6 Connection to Offline mode

### 5.6.1 First connection

When the user logs in to the offline application on a pair of HoloLens 2 for the first time, the application will suggest them to set up a code. The user can skip (①) this step as many times as they want.

Setting up the access to offline mode requires the user to define a 6-digit PIN code that will be associated to their account and to the HoloLens 2 device. A confirmation of the code is needed (②).



### 5.6.2 Routine connection

Logging into the offline mode on Surgiverse® Digital Cockpit using the quick access requires only 2 steps:

- ① Select your account on the list (①)
- ② Enter your PIN code (②)



### 5.7 Handling main menu

It is possible to grab the main menu to move it in space.

Grab the



handle on one side of the main menu by pinching it between thumb and index.

It is also possible to grab it with the lasso.

### 5.8 About menu: access to product documentation

About menu enables to access to product documentation:

- Labeling
- User guide
- Terms of use and legal notice
- Instructions for use

Labeling:

Click on



In the information banner to open about menu.

Labeling is displayed in the panel.

User guide:

① Click on



In the information banner to open about menu.

② Click on



to display user guide as a pdf file next to the panel.

Terms of use and legal notice:

① Click on



In the information banner to open the information menu.

② Click on



to display terms of use.



Note: When opening a product documentation, if another one is already opened, it shall be automatically closed and replaced by the new one.

### 5.9 Setting the language

① Click on



to open Settings menu.

② Click on



to select language.

### 5.10 Filtering validated sessions in a list / Filtering my session file in a list

In the sessions list, all session files are displayed in the list by default. It is possible to filter a session file created by the user only.

① Click on



to filter session files created by the user in the list.

② Click on the button again to display all the sessions files in the list.

### 5.11 Searching in a list

In Documents tab or session files list, it is possible to search an element in the list.

- 1 Click on  text input field.

The virtual keyboard is automatically opened.

- 2 Enter the first characters of your research in the virtual keyboard.

List is filtered and updated with searching criterion.

- 3 Close the keyboard.
- 4 Click on the cross button if needed to clear the text input field.

### 5.12 Sorting elements in a list

- 1 In a list, click on the header of the column you want to sort.
- 2 The order is represented by an arrow up or down.

### 5.13 First use mode: activation/deactivation

To assist the user during the first uses of Surgiverse® Digital Cockpit, a first use mode identifies the commands and features available in each menu displayed. Based on eye-tracking and hand tracking, this mode displays a tooltip with some explanations next to each button or area of interest in the user interface that:


- You look at during at least 1 second
- You approach with your finger

If needed, it is possible to display all tooltips available for a given menu displayed at a time.

- 1 Click on  to open Settings menu.

- 2 Click on  toggle to activate first use mode.

- 3 Look at buttons or area of interest in the user interface you wish to have information about.

 Note: First use mode is activated by default for the first use. Afterward, it keeps its last state.

### 5.14 Layout mode: activation/deactivation

The layout mode allows the user to set up a specific spatial configuration and organize the virtual dashboard of the session relative to a physical point of reference.

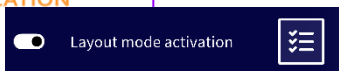
The point of reference used is a QR code which must be positioned and fixed in space, on a wall or a table for example. The positions of the main menu and spawn points are saved relative to the position of this QR code and linked to it. Each layout is saved in the user profile. Several QR codes can be edited to save several configurations.

When activated, layout mode can scan and recognize eligible QR codes to store layout information.

 Note: Eligible QR codes contain the following data: "AbysMedical\_layout\_[char]" with [char] from 1 to 8 characters.

- 1 Click on  to open Settings menu.

② Click on



toggle to activate layout mode.

③ Click on toggle again to deactivate layout mode.

### 5.15 Layout mode: saving a layout

Once layout mode is active, it is possible to save a layout.

① Place the main menu and the spawn points as you wish.

② Scan a valid QR code. A menu is displayed on the QR code. If no layout is saved:



③ Click on



to save the layout and attach it to the QR code.

If a layout is already saved in memory:



④ Click on



to save the layout and attach it to the QR code.

A confirmation is required to save the layout.



- ⑤ Click on  to confirm the choice.

Layout is saved. Main menu and spawn points positions are saved and attached to the QR code and can be loaded later.




Note: Be aware that the position of your workspace is saved relatively to the QR code. If you move the QR code, you might experience discrepancies in workspace position.

### 5.16 Layout mode: loading a layout

Once layout mode is active, it is possible to load a previously saved layout.

- ① Scan a valid QR code. A menu is displayed on the QR code.



- ② Click on  to load a layout attached to this QR code.

A confirmation is required to load the layout.



- ③ Click on  to confirm the choice.




Layout is loaded. Main menu and spawn points are automatically positioned relative to the QR code.



Note: Be aware that the position of your workspace is saved relatively to the QR code. If you move the QR code, you might experience discrepancies in workspace position.

### 5.17 Layout mode: delete a layout



When a layout is stored in the user profile, it is possible to delete it.

- ① Click on  to open Settings menu.
- ② Click on  to open layouts list.
- ③ Click on  next to a layout in the list to delete it.
- ④ Confirm choice to validate the action

### 5.18 Autosave

Session files are autosaving at regular intervals. Autosave considers the session file's contents opened, as well as their position and orientation relative to the spawn points. This enables to retrieve a session state when disconnected or when the application has been quit.

When reopening a session that has already been opened and then closed, or after disconnecting from the session, a window is displayed asking whether you want to open last session on this file.

- ① Click on  to open the session with last autosave configuration.
- ② Click on  to open the session with a reset configuration.



### 5.19 Reset spawn areas positions

If needed, it is possible to reset the position of spawn points. Once reset, spawn points shall be attached and wired to the main menu.

① Click on



to open Settings menu.

② Click on



to reset spawn points.

### 5.20 Reset all positions

If needed, it is possible to reset the position of all opened contents of a session file. They shall return to their respective spawn points.

Click on



to reset all opened contents.

### 5.21 Display notepad

If notes from Surgiverse® Web Planning, they can be retrieved in Surgiverse® Digital Cockpit.

Click on



to open the Notes tab and display the notepad inside the panel.



Note: Personal notes cannot be edited from Surgiverse® Digital Cockpit.

### 5.22 Checklists

Checklists created in Surgiverse® Web-Planning are available in Surgiverse® Education Digital Cockpit in a dedicated tab on the main menu.

① Click on



to open the checklists tab. A list of available checklists is displayed.

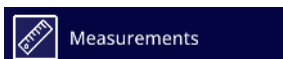
② Click on the checklist you want to work on.

③ Click on each item you want to check/uncheck in the current checklist.

### 5.23 Measurements

If measurements have been taken on Surgiverse® Education Web-Planning on a series exported to Surgiverse® Education Digital Cockpit, it is possible to display them in a list with their respective values.

Click on



tab to display the measurements list.

All measurements are displayed with names and values.

Or, ① click on



tab to display the 3D objects list.

② Click on



to display all measurements in 3D on opened 3D objects.

To display measurements individually:

① Click on



tab to display the 3D objects list.

② Click on



to access all the elements associated to the 3D object.

③ Click on the eye icon



of the measurement you want to display.



Note: button appearance changes to show current state (displayed/hidden).

### 5.24 Labels

If labels have been added on Surgiverse® Web-Planning on a series exported to Surgiverse® Digital Cockpit, it is possible to display them in their respective associated 3D object series.

① Click on



tab to display the 3D objects list.

② Click on



to display all the labels on the opened 3D objects.

To display labels individually:

① Click on



tab to display the 3D objects list.

② Click on



to access all the elements associated to the 3D object.

③ Click on the eye icon



of the label you want to display.



Note: button appearance changes to show current state (displayed/hidden).

### 5.25 Assets

If assets (instruments or implants) have been added on Surgiverse® Web Planning on a series exported to Surgiverse® Digital Cockpit, it is possible to display them in their respective associated 3D object series.

① Click on



tab to display the 3D objects list.

② Click on



to display all the assets on the opened 3D objects.

To display assets individually:

① Click on



tab to display the 3D objects list.

② Click on



to access all the elements associated to the 3D object.

③ Click on



of the measurement you want to display.



Note: button appearance changes to show current state (displayed/hidden).

### 5.26 Filtering available documents in a list

In the documents tab, all documents are displayed in the list by default. It is possible to filter available documents in order to hide non available documents such as video or audio files.

① Click on



to filter available documents in the list.

② Click on the button again to display all documents in the list.

### 5.27 Free or constrained mode for documents

When opened in the scene, for better readability and visibility, documents are always oriented toward the user. If moved, they will automatically turn to face the user when released. Yet it is possible to disengage this constrained mode. When free mode is activated, documents stay in their last position and orientation when released by the user.

① Click on



button in the upper banner above the concerned document to activate free mode.

② Click on the button again to activate constrained mode.



Note: the document handling mode is active on the concerned document only.

### 5.28 3D: brightness adjustment

Display brightness of all 3D objects opened can be adjusted for better comfort and visibility.

① Click on



to open the 3D tab on the main menu.

② Grab the slider cursor by pinching it between the index and thumb

③ Move the cursor to the left to decrease brightness, and to the right to increase it.

### 5.29 3D: change objects scale

3D objects are displayed at 1:1 scale by default when opened and this scale is also locked by default. It is possible to unlock scale and allow upscaling up to x2.5 and downscaling down to x0.5.

When unlocked, current scale of the 3D object is displayed on the button.



Note: the scale value is displayed with one decimal place and is rounded down or to the upper 1/10.

Note: when unlocked, a warning informs the user that object may not be at scale.

① Click on



next to the 3D object concerned, to open contextual 3D object settings menu.

② Click on



to unlock 3D object scale.

③ Grab the object with both hands, pinching the thumb and index finger of each hand, then spread the hands apart to enlarge the object, or bring the hands together to decrease it.

④ Click on the scale button again to scale the 3D object back to 1:1 and lock it.



Note: the scale 1:1 is the size of 3D object as exported from Surgiverse® Web Planning. Moreover, the size of the 3D object is inherent to the medical images and cannot be edited on Surgiverse® Web Planning.



**Caution:** The user should always check the scale and orientation of the used 3D objects. Opening several 3D objects may deteriorate the fluidity of the display.

### 5.30 3D: display mode

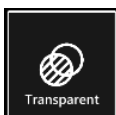
3D objects can be displayed with standard opaque material or with transparency if needed.

① Click on



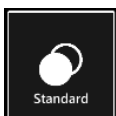
next to the 3D object concerned, to open contextual 3D object settings menu.

② Click on



to display 3D object with transparency.

③ Click on



to display 3D object with standard opaque material.

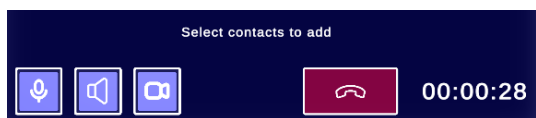
### 5.31 Communication: starting a live broadcast

If communication feature is available, it is possible to start a live broadcast on one session file that can be joined by people having access to it.

① Click on



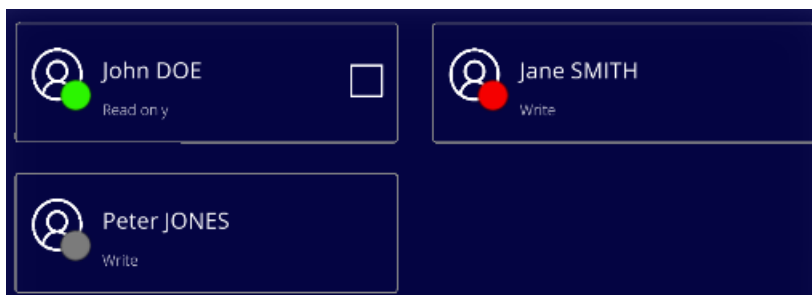
to start the live broadcast.



② The communication toolbar is displayed when the live broadcast is on, and a timer is launched at the start of the broadcast to indicate its duration. Surgiverse® Web-Planning users having access to the session can then join the live broadcast.

### 5.32 Communication: starting a call

If communication feature is available, it is possible to start a call if at least one contact having access to the session file is listed as available.



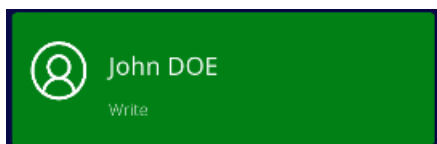
① Click on the contact(s) in the list you wish to add to the call.

② Click on

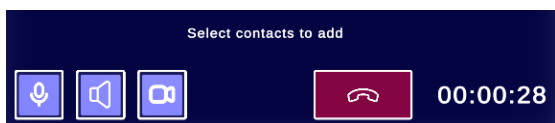


to start the call. Dialing is launched.

If the concerned contacts accept the call, they will be successfully added to the conversation.



Contacts become green when participating to the call.



The communication toolbar is displayed, and a timer is launched at the start of the communication to indicate the duration of the call in progress.



Note: Unavailable contacts cannot be added to a call.

### 5.33 Communication: activate/deactivate video sharing

While a call or a live broadcast is in progress, it is possible to activate or deactivate video sharing. When activated, video sharing enables to share with participants to the call, the user's augmented point of view, including real scene filmed by Microsoft® HoloLens® 2 cameras, and all virtual objects present in the field of view.

Click on



in the communication toolbar to activate or deactivate sharing mode.



A small icon is visible in the up-right corner of the field of view, indicating that sharing mode is activated.



Note: video sharing is activated by default.

Note: the button appearance changes and indicates the current state.

### 5.34 Communication: mute/unmute microphone

While a call or a live broadcast is in progress, it is possible to mute/unmute your microphone.

Click on



in the communication toolbar to mute or unmute your microphone.



Note: by default, when a call starts, your micro is unmuted.

Note: the button appearance changes and indicates current state.

### 5.35 Communication: activate/deactivate sound

While a call is in progress, it is possible to mute/unmute incoming sound.

Click on



in the communication toolbar to mute or unmute your microphone.



Note: by default, when a call starts, the sound is activated.

Note: the button appearance changes and indicates current state.

### 5.36 Communication: hanging up a call or a live broadcast

While a call or a live broadcast is in progress, it is possible to hang up and terminate it. Video sharing mode and any call recording of the Surgiverse® Education Digital Cockpit session will be terminated.

① Click on



to hang up the call or the live broadcast. A popup is displayed to ask for confirmation/cancellation.

② Click on



on the displayed popup to confirm or cancel the action. The call is terminated.



small icons disappear from the up-right corner of the field of view.

### 5.37 Captures: taking a snapshot

If the user has the right to edit the session file, it is possible to make captures of the session and to store them in the session file. These snapshots are taken from the user's augmented point of view including real scene as captured by Microsoft® HoloLens® 2 cameras and all virtual objects present in the field of view.

① Click on



to activate snapshot mode.



small icon is visible in the up-right corner of the field of view, indicating that snapshot mode is activated.

② Pinch your thumb and index to take a snapshot. Snapshot mode is automatically exited after capture.



Note: you get a notification once the snapshot is uploaded to the session file. The file appears as a picture in the documents list of the session.

Note: snapshot mode is not available if the user does not have the rights to edit the session.

Note: snapshot mode is not available in the case of network disconnection.

### 5.38 Captures: recording audio

If the user has the right to edit the session file, it is possible to record audio and to store it in the session file data.

① Click on



to start audio recording.



A small icon is visible in the up-right corner of the field of view, indicating that audio recording is in progress.

② Click on the button again to stop recording. A progression bar indicates uploading progression.



Note: you get a notification once the audio record is uploaded to the session file. The audio file appears in the documents list of the session file.

Note: audio recordings cannot be read in Surgiverse® Education Digital Cockpit.

Note: audio recording is not available if the user does not have the rights to edit the session.

Note: audio recording is not available in the case of network disconnection.

### 5.39 Captures: recording video

If the user has the right to edit the session file, it is possible to record video and to store it in the session file data. Video recordings are taken from the user's augmented point of view including real scene filmed by Microsoft® HoloLens® 2 cameras and all virtual objects present in the field of view.

① Click on



to start video recording.



A small icon is visible in the up-right corner of the field of view, indicating that video recording is in progress.

② Click on the button again to stop recording. A progression bar indicates uploading progression

Note: you get a notification once the video record is uploaded to the session file. The video appears in the documents list of the session file.



Note: video recordings cannot be read in Surgiverse® Education Digital Cockpit.

Note: video recording is not available if the user does not have the rights to edit the session.

Note: video recording is not available in the case of network disconnection.

### 5.40 Notifications: receiving and reading notifications

Two kinds of notifications can be received by the user: information and warnings.

Warning notifications can be critical and are mandatory. A long sound is emitted, and a permanent icon with the following text "Warning, check your notification panel" is displayed in the field of view.

A warning notification is sent when:

- A network error occurred
- A session has been unvalidated and/or modified
- Microsoft® HoloLens® 2 temperature has reached critical value
- Microsoft® HoloLens® 2 battery level is low

An information notification is sent when content has been added to the session.

① Click on



button to open notifications.

② Click on the "Open" button in the right of the line of the notification in the list you want to open or look at the notifications list during at least 1 second to mark it as read.

### 5.41 Notifications: clear notifications

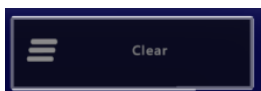
Once notifications are read, it is possible to clear them from the list.

① Click on



button to open notifications.

② Click on



to clear read notifications.



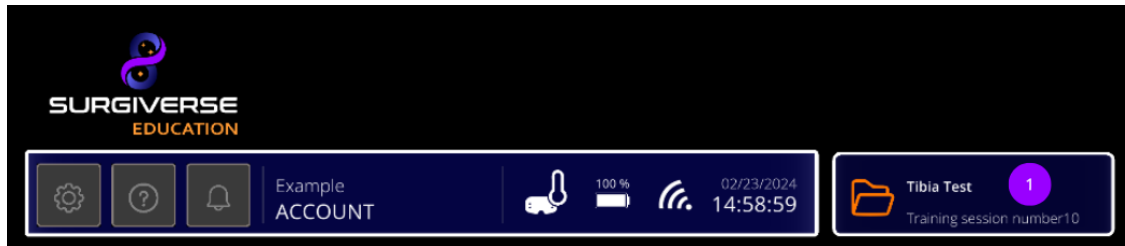
Note: Clearing notifications shall also clear unread information notifications.

### 5.42 “Do not disturb” mode

This mode enables the user not to be distracted nor disturbed by Surgiverse® Digital Cockpit interface.

Once activated:

- Main menu panel is reduced
- Information banner is always visible at the top of the user's field of vision. Next to the banner, a button (①) indicating the current opened session enables to deactivate the mode
- All virtual objects in the scene are locked in position and orientation, avoiding wrong or unexpected handling
- All information notifications are disabled
- Warning notifications are still activated



① Click on



Located next to the information banner to activate the «Do not disturb» mode.

② Click on



located next to the information banner to deactivate the «Do not disturb» mode.

### 5.43 Display/hide virtual hands

During communication with sharing mode, or video recording, it may be useful for the user to point a specific area on a 3D object with the finger.

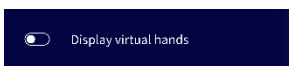
3D objects are perceived to be localized in space, but the 3D image is projected onto the visor of the HoloLens. This can induce an obfuscation of the finger/hand by the 3D object when both occupy the same space. To avoid it and to ensure both hand/finger and 3D object are visible, it is possible to display user's virtual hands as they are detected by Microsoft® HoloLens® 2 sensors.

① Click on



to open Settings menu.

② Click on



toggle to display virtual hands.

③ Click on the toggle again to hide virtual hands.

### 5.44 Managing offline files

The offline mode of Surgiverse® Digital Cockpit enables the user to save locally session files onto the HoloLens 2 device. The user can then open documents and 3D objects on the session files without the need for internet connection. Communication features are not available while on offline mode.

To manage offline session files:

- ① Click on “Manage offline files” (①) button in the main menu
- ② Tick the session files (②) you want to save locally
- ③ Click on the “Save on disk” (③) button





Note: every time the user saves sessions locally, the data will erase all data on disk. The user must select all the files that they need every time they save data locally.

### 5.45 Logout from Surgiverse® Digital Cockpit

① Click on



to open Settings menu.

② Click on



to log out.

③ Click on



to confirm choice.

### 5.46 Exit Surgiverse® Digital Cockpit

① Click on



to open Settings menu.

② Click on



to exit Surgiverse® Digital Cockpit.

③ Click on



to confirm choice.

## 6 Software installation / maintenance / decommissioning

No installation, maintenance or decommissioning procedures are needed for users. Surgiverse® Education Digital Cockpit is a software under responsibility of Abys Medical® ensuring all operations.

Users will be noticed for updates and related timelapses of unavailability of platform if needed.

In the event of a major modification of Surgiverse® Education Digital Cockpit that could have an impact on the technical performance of Surgiverse® Digital Cockpit, a new validation will be performed. If applicable, the new performance parameters will be communicated to users if they are modified.

## 7 Complaints

Any user with a complaint regarding the quality of this software, its identity, reliability, safety, efficacy, or performance should notify Abys® Medical. For additional information on this software, please contact Abys® Medical Customer Service at [support@abys-medical.com](mailto:support@abys-medical.com).

## 8 Troubleshooting

If you have any problems with hand or wall motion detection or graphics display, please turn off the Microsoft® HoloLens® 2 and turn it back on using the following procedure: <https://docs.microsoft.com/fr-fr/hololens/hololens2-setup>.

## 9 Legal information

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