



# CAELucinaAR

with HoloLens 2

## User Guide

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training partner  
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# CAUTIONS AND WARNINGS

## AC Adapter Safety

Failure to take the following precautions can result in serious injury or death from electric shock or fire or in damage to the device. To select an appropriate power source for your HoloLens 2:

- Use only the power supply unit and AC power cord that was provided with your HoloLens 2.
- Do not use non-standard power sources, such as generators or inverters, even if the voltage and frequency appear acceptable. Only use AC power provided by a standard wall outlet.
- Do not overload your wall outlet, extension cord, power strip, or other electrical receptacle. Confirm that they are rated to handle the total current (in amps [A]) drawn by the HoloLens 2 (indicated on the power supply unit) and any other devices that are on the same circuit.

On devices where the AC prongs may be folded for storage, before plugging the AC adapter into a power outlet, make sure its prongs are fully extended. On devices where the AC prongs are removable and where the power supply uses a universal adapter, before plugging the AC adapter into a power outlet, make sure the prong assembly is of the proper configuration for the power outlet and fully seated into the adapter.

## Battery Safety

The HoloLens 2 contains a 9V at 2A built-in battery. The battery in the HoloLens 2 is not user replaceable. Improper use or disposal of the battery may result in explosion.

Do not heat, open, puncture, mutilate, or dispose of the product in fire.

Do not leave the HoloLens 2 in direct sunlight for an extended period of time. Extreme sunlight exposure can cause battery damage.

## Potentially Explosive Atmospheres

Areas with potentially explosive atmospheres are often, but not always, posted and can include fueling areas such as:

- Below decks on boats
- Fuel or chemical transfer or storage facilities
- Areas where the air contains chemicals or particles such as grain dust or metal powders

In fueling areas, sparks can occur and cause an explosion or fire. When you are in a fueling area, turn off your HoloLens 2 and do not remove or install battery chargers, AC adapters, or any other accessory.

## Heat Related Concerns

The HoloLens 2 may become very warm during normal use. HoloLens 2 complies with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950-1).

To reduce heat related concerns, follow these guidelines:

- Allow for adequate air circulation under and around the device.
- Use caution when operating your device with a pillow, blanket, hat or other soft material contacting the device because the material can block the airflow which may result in the device overheating.
- If your device gets uncomfortably warm, remove it and allow it to cool.

## Photo Sensitive Seizures

A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns that may appear in virtual environments.

The risk of photosensitive epileptic seizures may be reduced by taking the following precautions:

- Use the HoloLens 2 in a well-lit room.
- Do not use HoloLens 2 when you are drowsy or fatigued.
- If you or any of your relatives have a history of seizures or epilepsy, consult a doctor before using HoloLens 2.

Even people who have no history of seizures or epilepsy may have an undiagnosed condition that can cause these “photosensitive epileptic seizures” while watching virtual simulations.

These seizures may have a variety of symptoms, including light-headedness, altered vision, eye or face twitching, jerking or shaking of arms or legs, disorientation, confusion, or momentary loss of awareness. Seizures may also cause loss of consciousness or convulsions that can lead to injury from falling down or striking nearby objects.

Immediately stop using the HoloLens 2 and consult a doctor if you experience any of these symptoms.

# Skin Irritation

The HoloLens 2 is made of materials commonly used in wearable consumer electronic devices. However, certain people may develop skin irritation due to allergies or sensitivities.

To reduce the risk of skin irritation:

- Wipe your device dry with a cloth if it gets wet.
- Avoid using lotions or other products under the portions of HoloLens that contact your head.
- Do not wear over injured skin.
- Adjust the headband only until snug – avoid tightening the headband uncomfortably.
- If your skin becomes irritated, stop using the HoloLens 2 device.
- If symptoms are severe or persist, consult your physician.

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# HELPFUL LINKS

- **HoloLens 2 Hardware:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-hardware>
- **HoloLens 2 fit and comfort FAQ:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-setup>
- **Charging HoloLens 2:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-setup>
- **HoloLens 2 LED Lights:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-setup>
- **Turning HoloLens 2 ON or OFF:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-setup>
- **Setup HoloLens 2:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-start>
- **Using Gestures:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-basic-usage>
- **Connect to Miracast:**  
<https://docs.microsoft.com/en-us/hololens/hololens-connect-devices#connect-to-miracast>
- **Environment considerations for HoloLens 2:**  
<https://docs.microsoft.com/en-us/hololens/hololens-environment-considerations>
- **Caring for and cleaning your HoloLens 2:**  
<https://docs.microsoft.com/en-us/hololens/hololens2-hardware>
- **Additional instructions and references:**  
<https://docs.microsoft.com/en-us/hololens/>



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# EQUIPMENT OVERVIEW

The Microsoft HoloLens 2 provides a more immersive, untethered experience with more options for collaborating in mixed reality.

## What's Included

- HoloLens 2
  - Visor
  - Headband
  - Brow pad
  - Overhead strap
  - USB-C Cable
  - Power supply
  - Microfiber cloth
- Documentation

## Equipment Features

The table below lists the basic equipment features included that will aid you in using the HoloLens 2.

Component	Description
Visor	The visor can be lifted up while wearing the HoloLens 2
Headband	Tighten or expand the headband by turning the adjustment wheel on the back to the right or left
Power button	Located on the back, right side; displays a LED battery level indicator
Brightness buttons	Located on the left side
Volume buttons	Located on the right side
Overhead strap	Attach for comfort when wearing the HoloLens 2 for an extended period
USB-C Cable	Connect to power supply for charging or connect to a computer
Power supply	18W charger, 9V at 2A
Microfiber cloth	Use to clean the visor

For more information about the HoloLens 2 hardware, go to this link:

<https://docs.microsoft.com/en-us/hololens/hololens2-hardware>

# INTRODUCTION

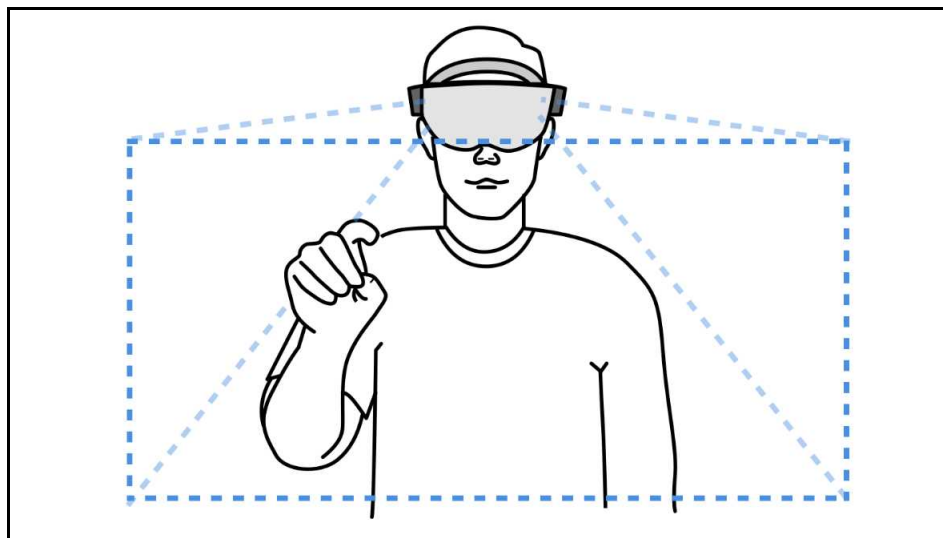
Prior to beginning setup, it is important to understand some basic concepts and environmental considerations to ensure a safe and productive learning experience.

## Using Gestures

The Microsoft HoloLens 2 utilizes several gestures that users should become familiar with to properly operate the device. This section will explain these gestures to help orient yourself in using the HoloLens 2.

### The Gesture Frame

HoloLens 2 has sensors that can see a few feet to either side of the user. When gestures are used, they must be kept inside that frame for HoloLens 2 to detect them. As the user moves around, the frame moves with them. When the user's hand is inside the frame, the cursor will look like a ring. When HoloLens 2 cannot see the user's hand, the cursor changes to a dot.



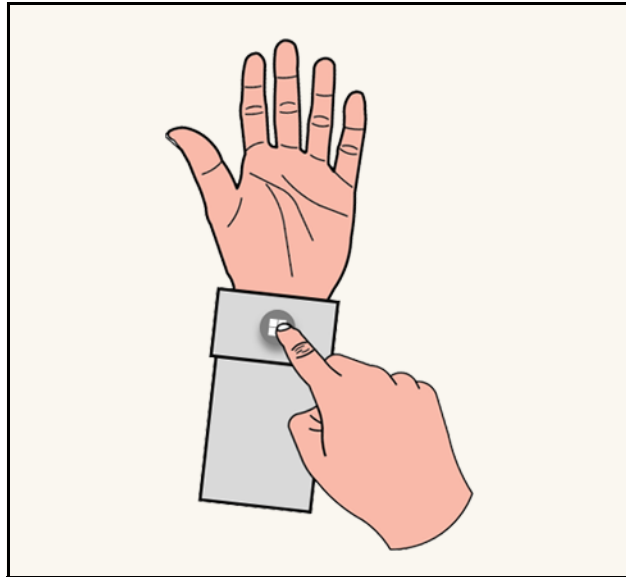
*Gesture Frame*

### Summon Menu Gesture

The Summon Menu gesture, also referred to as the Start gesture, is used to open the Start menu and navigation menus. If a user is uncertain of what to do, the Summon Menu gesture is a good way to get reoriented.

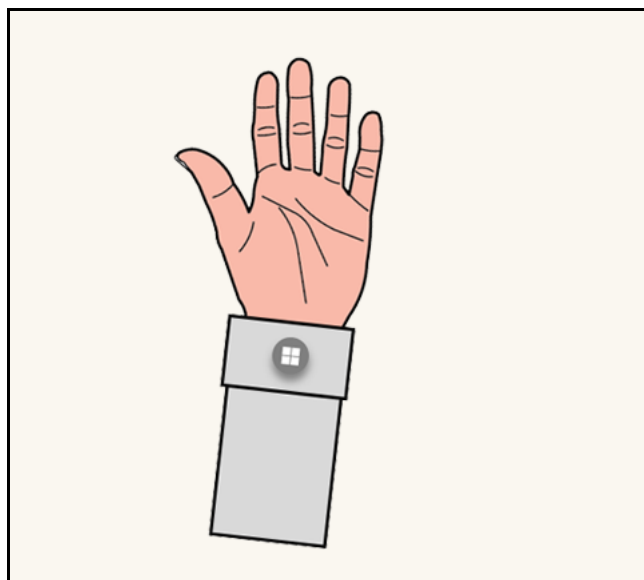
To summon the Start menu or navigation menu:

1. Hold out your hand with your palm facing you.
2. You will see a wrist button appear over your inner wrist. Tap this wrist button using your other hand.



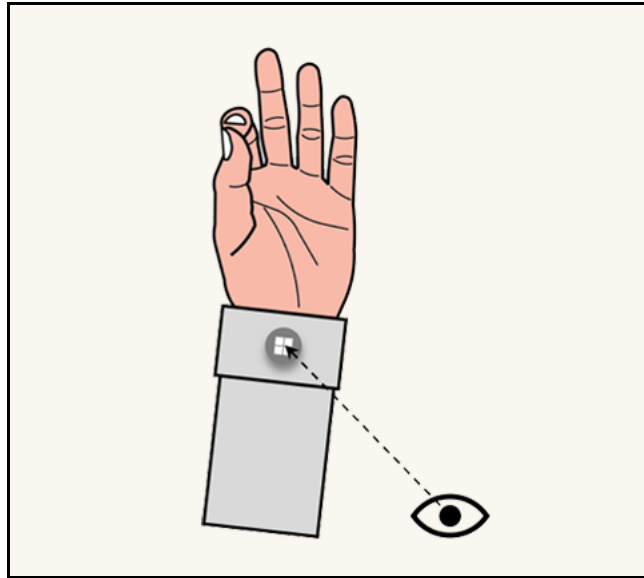
*Wrist Button*

3. The Start menu or navigation menu will open.
4. To close the menu, repeat the **Summon Menu** gesture while the Start menu is open. You can also look at the Start menu and say, "Close".



*Summon Menu Gesture*

5. You can also open the Start menu with only one hand by using the Summon Menu gesture and Gaze at the wrist button. Pinch your thumb and index finger together while keeping your eye on the wrist button.



*Gaze at Wrist Button then Pinch*

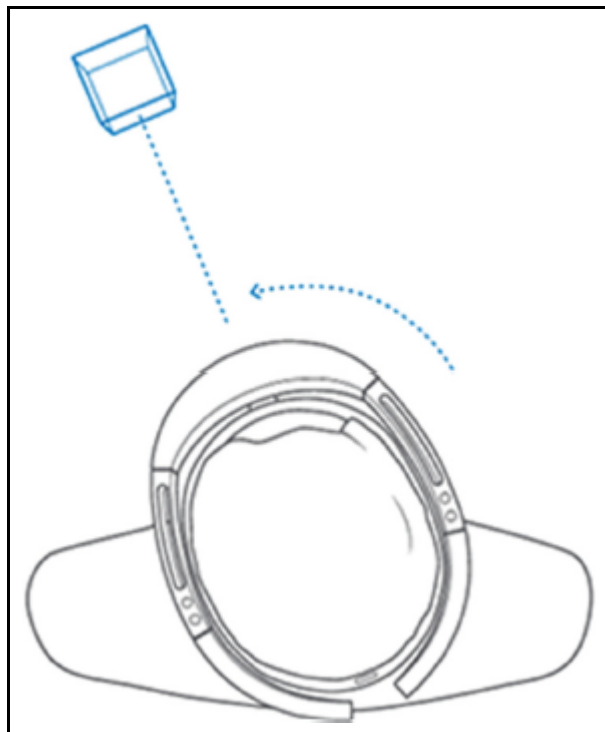
**Note:** This applies to all menus. Each time you need to open a menu, use the Summon Menu gesture. This gesture is shown at the following link:

<https://docs.microsoft.com/en-us/hololens/hololens2-basic-usage>

## Gaze

Gaze can be used to move the cursor and highlight apps and other holograms for selection. The cursor follows whole head movements as opposed to simple movement of the eyes.

Holograms are highlighted when they are available to be selected.



**Gaze**

## Air Tap Gesture

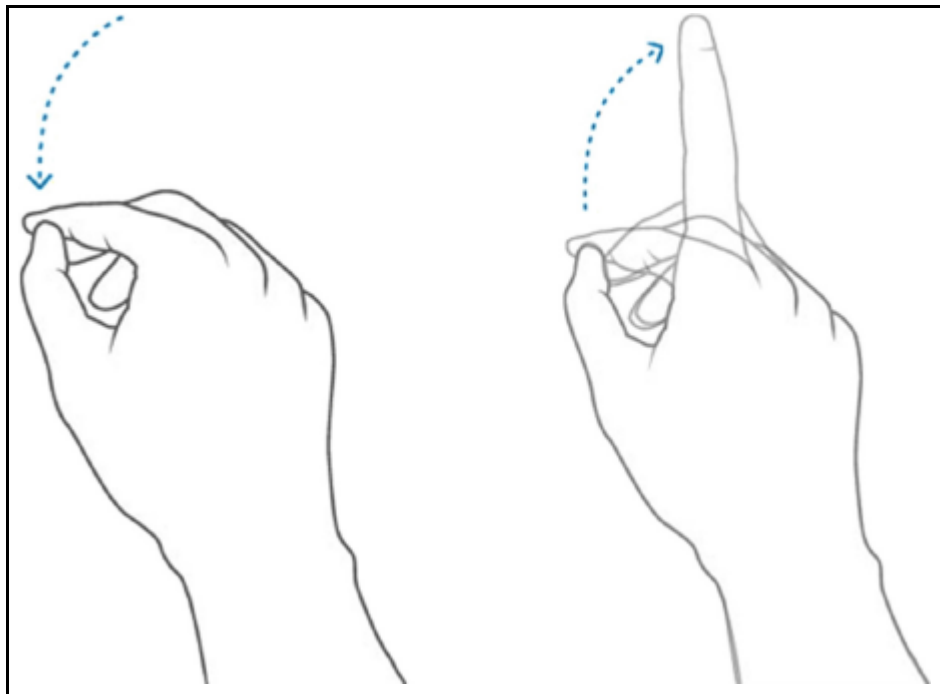
Use Air Tap along with Gaze to select apps and other holograms.

To use Air Tap:

1. Gaze at a hologram.
2. Hold your hand straight out in front of you in a loose fist.
3. Point your index finger straight up toward the ceiling.
4. Point your thumb straight out, forming an "L" with your index finger.



5. Keep your elbow low and comfortable.



*Air Tap*

6. Tap your finger down, then quickly raise it back up again.

## Air Tap and Hold Gesture

To Air Tap and hold, start with an Air Tap but hold your finger down instead of raising it back up. This is also referred to as a pinch.

Use Air Tap and hold to:

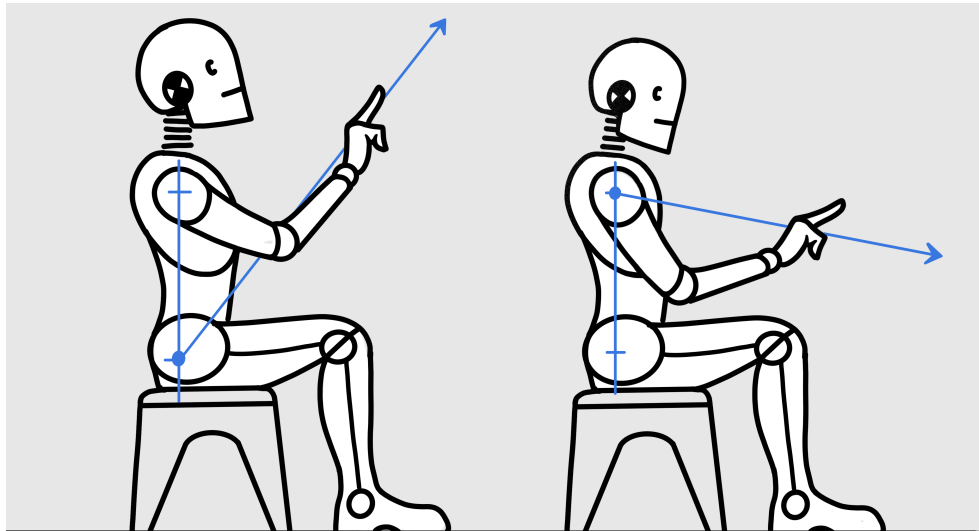
- **Drag:** Air Tap and hold on an icon, window, or 3D hologram then slowly move your hand up and down or side to side to drag it to the desired location.
- **Pin, unpin, or uninstall an app:** Air Tap and hold the app icon in the Start menu or in the All apps menu, then Air Tap pin, unpin, or uninstall. Air Tap again to pin or unpin it to the desired location, or Air Tap uninstall to uninstall the app.

## Hand Ray Gesture

The hand ray gesture allows you to interact with holograms or menus out of reach, also known as far field manipulation. It is used to interact with menus and content in the application.

To use the hand ray, place your palm forward facing you with your elbow relaxed, and draw an imaginary line from your shoulder to your palm. As the hand ray moves over objects, a white line will

appear between your index finger and thumb, and the cursor in the application. When the line is white, you can interact with the object in the distance by performing an Air Tap.



*Hand Ray Gesture*

**Note:** To show or hide hand rays, say “Hide hand rays” or “Show hand rays”.

Use Air Tap to perform the following actions with hand ray:

- **Scroll:** On the app bar, select the Scroll Tool. Air Tap and hold until the tool appears, then slowly move your hand up and down or side to side. To scroll faster, move your hand farther from the center of the tool.
- **Grab:** Grab an app window or hologram to target the app title bar or hologram with the hand ray gesture and then Air Tap and hold. One or both hands can be used to perform these actions.
- **Open context menus:** Air Tap and hold with the hand ray gesture.

The hand ray gesture is shown at the following link:

<https://docs.microsoft.com/en-us/hololens/hololens2-basic-usage>

## Near Interactions

As you approach your hand to a menu or objects, you can use your hand to poke or grab certain objects and menus. Your index finger will emit a blue light as you approach such objects.

## Zoom and Rotate

You can move, resize, and rotate app windows and 3D objects using the pinch or grab and hold gesture with hand ray. One or both hands can be used to perform these actions.

### Zoom:

- **Zoom IN:** Pinch or grab and hold, then slowly move your hand(s) towards you.
- **Zoom OUT:** Pinch or grab and hold, then slowly move your hand(s) away from you.

### Rotate:

- **Rotate CLOCKWISE:** Pinch or grab and hold, then slowly move your hand(s) towards the left.
- **Rotate COUNTERCLOCKWISE:** Pinch or grab and hold, then slowly move your hand(s) towards the right.

## Resizing Holograms and App Windows:

- **Resize holograms:** Pinch your index finger and thumb on the hologram or face your hand down and close your fist over it. Grab the resize handles that appear on the corners of a 3D hologram and push or pull to resize it. Release your fingers to place it. You can also use the resize controls (up, down, left, right arrows or the rotate arrow). One or both hands can be used to perform these actions.
- **Resize app windows:** Pinch your index finger and thumb on the hologram or face your hand down and close your fist over it. Grab the resize handles that appear on the sides and bottom edges of an app window and push or pull to resize it. Release your fingers to place it. One or both hands can be used to perform these actions.

**Note:** These gestures are shown at the following link:

<https://docs.microsoft.com/en-us/hololens/hololens2-basic-usage>

## Follow Me, Stop Following

Holograms and app windows by default will remain where you placed them. The HoloLens 2 allows these holograms and app windows to follow you as you move around if you prefer. To ask an app to start or stop following you, select **Follow me** in the top right corner of the app window next to the Close button.

## Voice Commands

In addition to hand gestures, you can use your voice with the HoloLens 2 to perform many actions.

### Built-In Voice Commands

Speech recognition is enabled to allow interaction with supported voice commands. This setting can be confirmed by navigating to **Settings**, then **Privacy**, and then **Speech**.

**Note:** For best performance, keep Online speech recognition turned Off since the HoloLens 2 will not have access to the Internet.

The following list contains a description for each voice command:

Voice Command	Description
"Select"	Bring up the Gaze cursor; turn your head to position the cursor as needed and say "Select" again
"Go to Start"	Opens the Start menu
"Close"	Closes the Start menu
"Go to Start", then "Mixed Reality Home"	Leave an immersive app
"Show hand ray" / "Hide hand ray"	Show or hide hand ray
"What can I say?"	See list of available commands

For more information on voice commands, go to this link:

<https://docs.microsoft.com/en-us/hololens/hololens-cortana>

## Environmental Anchoring

The stability of the anchoring is highly impacted by the knowledge the HoloLens 2 has of its environment. It is important to scan your surroundings when using the HoloLens 2 in a new room. This prevents the hologram from drifting causing the device to lose its tracking.

Prior to launching CAE LucinaAR, walk around with the HoloLens 2 on your head so it can map the surroundings. Microsoft suggests doing this for between 5 and 10 minutes, to look at the ceiling, the floor and other objects from all sides. This step is important so the holograms stay grounded in the world preventing the device from "getting lost". One trick is to finger tap in the air while looking around. This directs the device to return visual feedback on its spatial mapping, drawing green triangles on the surfaces it knows about.

**Note:** The HoloLens 2 continuously tracks its surroundings to maintain its position in the World. Below are examples of things that can confuse the device. None of them is critical by itself but combined they can create a bad experience where the device may lose its tracking ability.

- Windows, mirrors
- White empty walls (posters help)
- No furniture
- Looking at a display monitor (ex: having a large TV in the field of view when looking at the manikin)

**Note:** During the experience, you may see an image with the following text: **Trying to map your surroundings...** This message is an indication that the HoloLens 2 is having difficulty tracking the environment. Ensure that you are taking the environmental conditions listed above into

consideration and scan your environment with the HoloLens 2 until the warning disappears from your field of view.

## Know Your Surroundings

Getting around HoloLens 2 is a bit different from using Windows on other devices. Instead of moving the cursor with a mouse, you use your gaze instead of moving a mouse and hand gestures instead of clicking or tapping.

## Use in Safe Surroundings

When using the HoloLens 2 you will move your body and walk around the mannequin to change your field of view and viewing angle. Be sure to use the HoloLens 2 in a place that is free of obstructions and tripping. Clear the area of any tripping hazards and provide enough clear space to move freely.

## About Your Environment

- Use HoloLens 2 in a room with adequate light and plenty of space. Avoid dark spaces and rooms with a lot of dark, shiny, or translucent surfaces.
- Avoid spaces with a lot of motion, as this may cause distraction and interfere with HoloLens 2 calibration.

## Be Physically Capable

Make sure your balance and physical abilities are sufficient for any movements while using HoloLens 2. Take breaks periodically and stop and rest if you get tired, sore, or experience any discomfort.

## Stay Comfortable

Some people may experience discomfort such as nausea, motion sickness, dizziness, disorientation, headache, fatigue, eye strain, or dry eyes when using mixed or virtual reality, particularly as they adjust to using it. Typically, motion sickness and related symptoms occur when there is a mismatch between what you see and what your body perceives. If you are prone to motion sickness in other situations, are afraid of heights, get migraine headaches, have an inner ear disorder, or other health conditions, you may be at increased risk of discomfort.

## Certain Situations Can Increase Your Risk of Discomfort

For example:

- Being a new user - symptoms tend to decrease as your vision system adapts
- Display not calibrated, or headset not oriented correctly on your head. Make sure HoloLens is properly calibrated and that it is properly aligned by using the Calibration application.
- Certain types of content, particularly games or movies that make you feel as if you are moving through space or looking down from high, or interactions that involve tracking moving objects
- Using HoloLens 2 for extended periods without a break
- Using HoloLens 2 in a completely dark environment that keeps you from seeing visual cues with your peripheral vision

## Consider Keeping Your First Sessions Brief

Start slowly and look around to get a feel for how the virtual objects and the outside world interact. For most people discomfort should decrease as you get more practice over your first few sessions.

## Take Periodic Breaks

Take breaks periodically and stop and rest if you experience any discomfort. The timing and length of breaks may depend on the individual user and what you are doing with HoloLens 2.

## If You Experience Discomfort

If you experience discomfort, stop using HoloLens 2 and rest until you feel better. Sitting still in a well-lit environment can help speed recovery from disorientation. If you feel disoriented, avoid activities that require balance, coordination, or other capabilities until you recover. Be sure the display is properly calibrated. Take note of the type of content you were viewing and other aspects of the situation in which the discomfort occurred so you can adjust or ease into the situation next time. People differ in the time they take to adapt. Consider taking more frequent or longer breaks.

If symptoms are severe or persist, consult your doctor. Viewing AR or Mixed Reality is not known to harm vision development or cause binocular vision disorders. If you are not able to view the AR effect clearly and comfortably, consider consulting an eye doctor, as you may have an undiagnosed binocular vision disorder.

# SETUP PROCEDURE

Prior to using the HoloLens 2 and simulator exercises, it is necessary to follow these steps.

Setup Procedure	
1	Charge the HoloLens 2
2	Adjust HoloLens 2 Fit
3	Power on CAE LucinaAR
4	Power on the HoloLens 2
5	(Optional) Connect to Miracast
6	Establish the Network Connection
7	Start CAE LucinaAR SCEs

## Step 1: Charge the HoloLens 2

Connect the power supply to the charging port using the included USB-C cable. Plug the power supply into a power outlet to charge the HoloLens 2.

**NOTE:** Put the HoloLens 2 in sleep mode by briefly pressing the **Power** button.

The battery indicator shows the battery level in increments when the HoloLens 2 is on. While the device is charging, the battery indicator will light up to show the current charge level. When only one of the five lights is on, the battery level is below 20%. If the battery level is critically low when you power on the device, one light will blink briefly and then stop.



## Battery LEDs

LED Status	Indication
All on at once	HoloLens 2 is turning On or waking up
All turn off at once	HoloLens 2 has gone into Standby mode
Turning off one at a time	HoloLens 2 is shutting down
Some or all on	HoloLens 2 is On (battery life is shown in 20% increments)
Some or all on and next level blinking	HoloLens 2 is On and Charging (battery life is shown in 20% increments)
One blinking quickly - then off	Battery is Critically Low - HoloLens 2 needs to charge

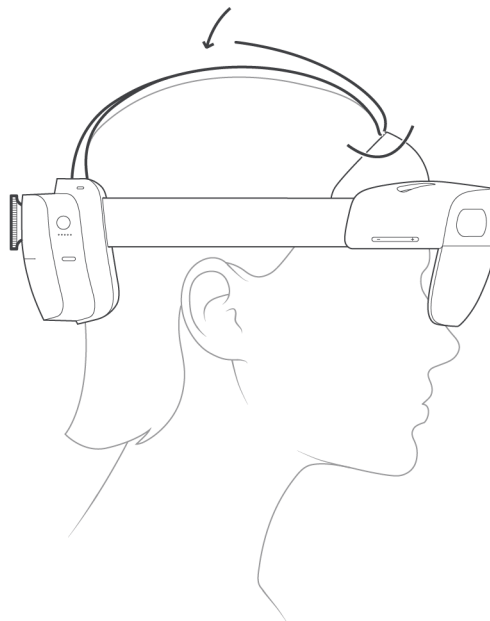
## Step 2: Adjust HoloLens 2 Fit

To adjust the fit of the HoloLens 2:

- a. Place the HoloLens 2 on your head. The brow pad should rest comfortably on your forehead. The back band should rest in the mid-back of your head.

**Note:** If you wear eyeglasses, leave them on.

- b. To expand or loosen the fit, turn the adjustment left or right then loosen the overhead strap.



**HoloLens 2 Overhead Strap**

## Attach and Detach the Overhead Strap

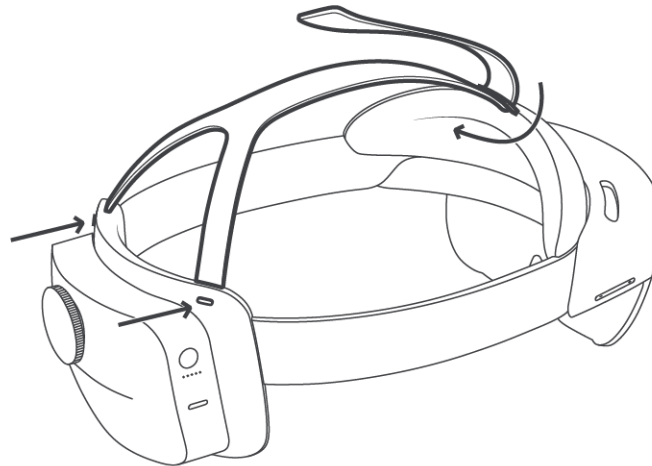
The overhead strap is not required, however it can aid in comfort when wearing the HoloLens 2 for long periods of time.

To attach the overhead strap, pull out the retractable loop and slide the strap through it.

To detach the front of the overhead strap, unhook the strap and slide it through the retractable loop on the brow pad.

To attach the back of the overhead strap, push the connection tabs into the slots until they click.

To detach the back of the overhead strap, press the button below each connection tab and gently pull the strap out.



***Attaching and Detaching the Overhead Strap***

## Step 3: Power on CAE Lucina

Prior to beginning this process, start with the router and HoloLens 2 powered off.

To connect the HoloLens 2:

- a. Plug in the power supply and turn on the wireless router.



**5 Ghz Wireless Router**

- b. Connect the network cable between any of the blue ports on the router and the Ethernet LAN port on CAE Lucina's right side.
- c. Press the power button on the computer located on the right side of the manikin's torso to turn on CAE Lucina and wait for the manikin to say "Hello."



**CAE Lucina Ethernet Ports**

## Step 4: Power on the HoloLens 2

To power on the HoloLens 2:

- a. Press and hold the **Power** button down for one second. Allow it to boot up.

**Note:** LED lights near the power button indicate the current battery level. For more information on the battery LED light indicators, see *Charge the HoloLens 2* section of this user guide.

- b. Use the **Summon Menu** gesture to open the Start menu.

## Step 5 (Optional): Connect to Miracast

You can share what's on your HoloLens 2 device to an HDTV or monitor with a Microsoft Wireless Display Adapter (not included).

To connect to Miracast:

1. Do one of the following:
  - a. Open the Start menu and select the display icon.
  - b. Say "Connect" while gazing at the Start menu.
2. Select an available device from the list of devices that appears.
3. Complete the pairing to begin projecting.

For more information on how to connect to Miracast, go to the following link:

<https://docs.microsoft.com/en-us/hololens/hololens-connect-devices#connect-to-miracast>

## Step 6: Establish the Network Connection

The HoloLens 2 is preconfigured to connect to the router. To ensure the router is connected:

- a. Verify the wireless connectivity to the network by viewing the WiFi status indicator at the top of the Start menu.
- b. Verify that it indicates **LUCINA####**, where **####** is the serial number of the simulator.

If the network does not match the desired simulator, see the *Troubleshooting* section of this guide.

## Step 7: Start CAE LucinaAR SCEs

To start CAE LucinaAR SCEs, select and start one of these five augmented reality supported SCEs:

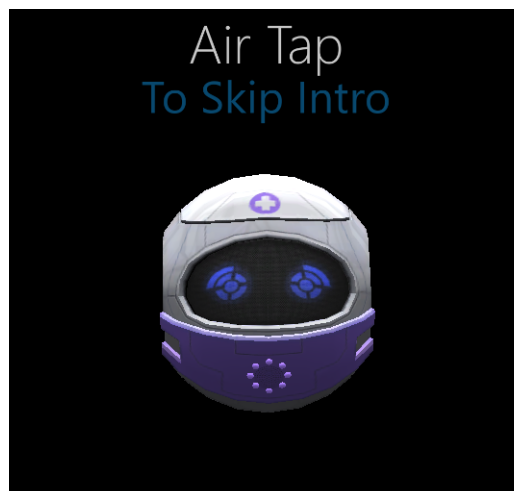
- Shoulder Dystocia
- Normal Delivery
- Breech
- Instrumental Delivery
- Postpartum Hemorrhage

# USING CAE LUCINAAR

The CAE LucinaAR application enhances the simulation learning experience through the use of augmented reality and allows learners to gain a deeper understanding of the manikin's physiology during clinical scenarios.

## Launch the CAE LucinaAR App

1. Use the **Summon Menu** gesture and tap the icon on your wrist once to view the Start menu.
2. Verify that the HoloLens 2 is connected to the **LUCINA####** wireless network.
3. Air Tap the LucinaAR button to launch the application.
4. The Iris bot will appear. Air Tap "To Skip Intro" to skip the introduction.



*Skip Iris' Intro*

# CAE LucinaAR App Icons

The following icons will provide feedback and allow you to perform functions:



**Connected:** Indicates that the HoloLens is connected to Lucina's Ethernet.



**Not Connected:** Indicates that the HoloLens is NOT connected to Lucina's Ethernet.



**Multi-User:** Indicates that you are operating in Multi-User Mode.



**Instructor:** Indicates that you are operating as the Instructor. Learners will see what you see but you will have full control of the experience.



**Learner:** Indicates that you are operating as the Learner. You will see what the Instructor sees. The Instructor will have full control of the experience.



**Connection Counter:** Indicates the number of Learners connected. The Connection Counter is ONLY visible to the Instructor.



**Settings Icon:** Opens the Settings menu.



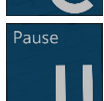
**Home Icon:** Exits the current Chapter and returns you to the Chapters menu.



**Initial Icon:** Returns you to the beginning of the simulated clinical experience.



**Replay Icon:** Replays the current Chapter Experience.



**Pause Icon:** Pauses the current Chapter Experience. Tapping it a second time resumes the current Chapter Experience.



**Next Icon:** Advances you to the Next chapter.



**Information Icon:** Provides an informational narrative of the current chapter.



**Previous Icon:** Returns you to the previous chapter.

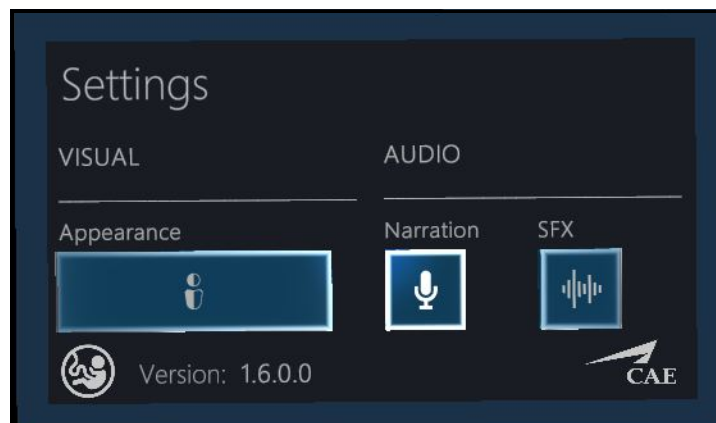


# Settings Menu

Lift your hand, palm facing you to open the Settings menu.

The settings menu contains buttons that allow you to:

- Change the language of the application (currently unavailable)
- Mute the narration in Single User mode, or mute the narration of Learners and the Instructor sharing an experience
- Change the skin color of the holographic manikin
- Mute all the sound effects
- View the Software Version



**Settings Menu**

**NOTE:** Instructors and single users can use all options. Learners cannot change the skin color of the manikin or change the mute settings.

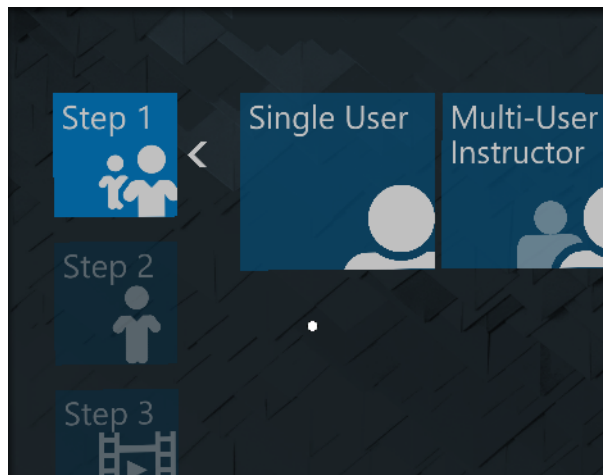
# Physical Modes

## Single User Mode

The single user mode uses pre-recorded data to drive the physiological values during the experience and can only be used by a single user. For instructions on how to use the application in Holographic Mode, see the *Holographic Modes* section of this user guide.

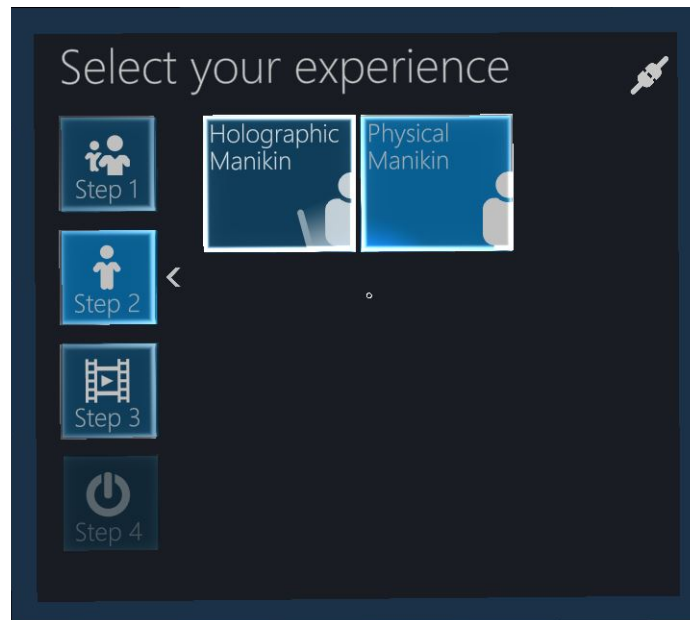
To use the application in single user mode:

- a. Lower your hand to view the **Select Your Experience** menu.
- b. Steps 1-4 will appear on the left side of the screen. In Step 1, Air Tap **Single User**.



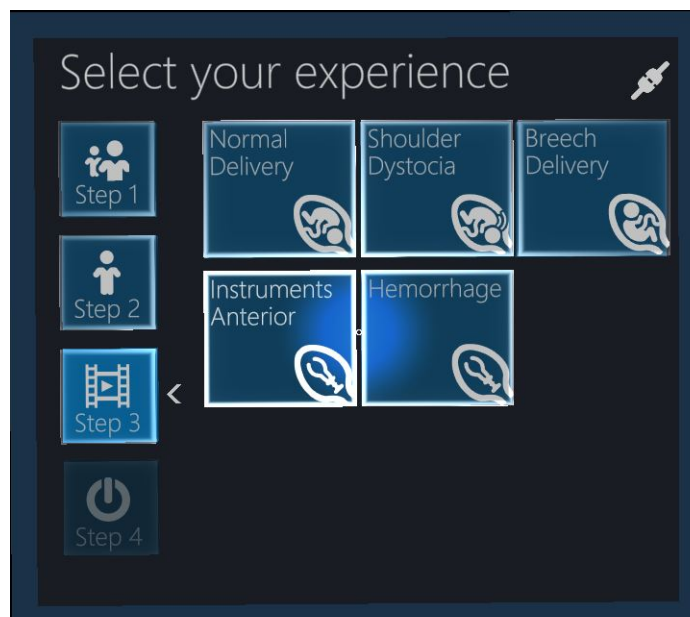
*Select Your Experience Menu - Step 1*

- c. In Step 2, Air Tap **Physical Manikin**.



*Select Your Experience Menu - Step 2*

- d. In Step 3, five SCEs are available. Air Tap the SCE that you want to experience.

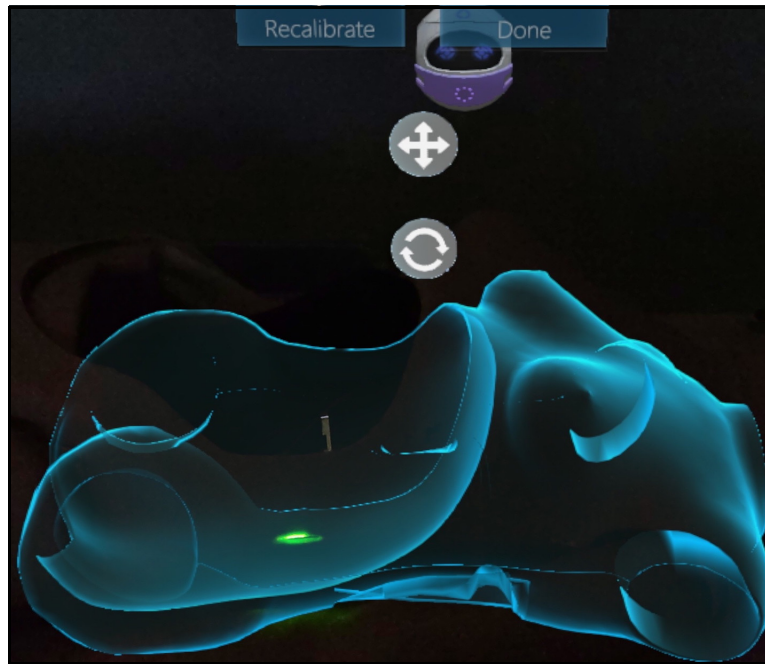


*Select Your Experience Menu - Step 3*

- e. In Step 4, Air Tap **Start** to start the simulation.

- 5. On Gaze Calibration:

- a. Manipulate the orientation arrows to move and rotate the holographic manikin to the desired position over the physical manikin.



*Fine Tuning Calibration - Holographic Manikin*

- b. Air Tap the **Done** button to go to Fine Tuning.
6. On Fine Tuning Calibration:
    - a. Using the rotation or displacement circles, grab and move the hologram to the desired position. Release to set the hologram in place.

- b. Try to place the hologram as close as possible to the figure below, focus specially on the red circle on the lower border of the vaginal area.



***Fine Tuning Calibration - Single User Mode***

- c. When you are placed on the side of Lucina as shown below, keep the hologram at one inch of distance as in the above figure.



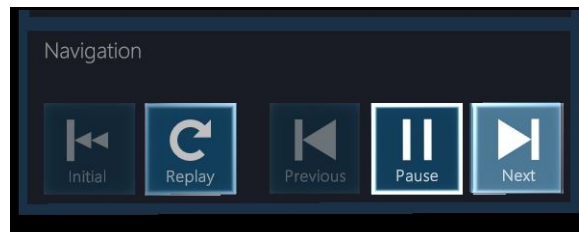
***Hologram within One Inch of Manikin***

- d. When the holographic manikin is in place, Air Tap **Done** to start the simulation.

The list of available chapters will depend on the selected SCE.

- e. A disclaimer window will appear. Gaze to the left at Iris and lift your hand, palm facing you to open the In Experience Chapter controls.

The In Experience Chapter controls are as follows:



*In Experience Chapter Controls*

- f. Air Tap **Next** to go to the first chapter. Here you will be able to view the holographic manikin.

**Note:** If the holographic anatomy has a flashing highlight, click on the **Info** button then tap on the anatomy that is highlighted. The anatomy or organ will rise and provide an informative clinical experience. The Info button is not always available, in which case the button will be disabled.

- g. When the chapter is complete, Air Tap **Next** to play the next chapter. If you need to replay a chapter, Air Tap **Replay**.

**Note:** To select a new SCE, hold up your palm facing you to access the Home button. To return to the main menu, use the Summon Menu gesture and Air Tap the button on your wrist.

## Multi-User Modes

When a user chooses Multi-User Instructor mode, that user becomes the designated instructor for the duration of the simulation and has sole control of advancing the SCE chapters using the In Experience Chapter controls.

The individuals who select the Multi-User Learner function during this time will be able to view the ongoing SCE from their vantage point but cannot utilize the In Experience Chapter controls.

### *Instructor*

To begin the simulation:

1. On the **Select your experience** menu:
  - a. Air Tap **Multi-User Instructor**.
  - b. Air Tap **Physical Manikin**.
  - c. To start the calibration, select the same SCE that was selected in Müse.
2. Perform the calibration.

A Hologram Sharing window will appear. When learners are ready, select **Start**.

3. When the simulation starts, wait for the other user clients before changing chapters. The learners will follow along with the SCE as the instructor advances each chapter.

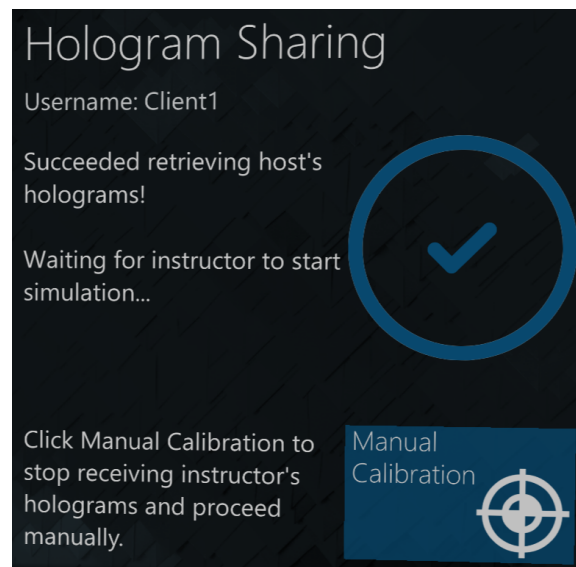
## Learner

To join the simulation:

1. On the **Select your experience** menu:
  - a. Air Tap **Multi-User Learner**.
  - b. Air Tap **Join Session** to start the calibration.

You automatically receive the position of the instructor's holograms.

If you are satisfied with the position of the instructor's holograms, simply wait for the instructor to start the chapter.

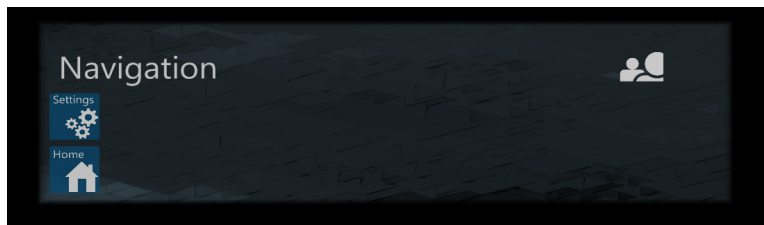


**Hologram Sharing Screen**

If you feel the need to recalibrate the holograms to the desired position, you can stop receiving the instructor's holograms and proceed with manual calibration.

Calibration will be shared from the instructor to the learner. If not satisfied, proceed manually.

Once the simulation starts, you will see the menu shown below:



*Client Simulation Menu*

2. Follow the changes of the Host Client.

**Note:** Air Tap the **Home** button to exit the experience.

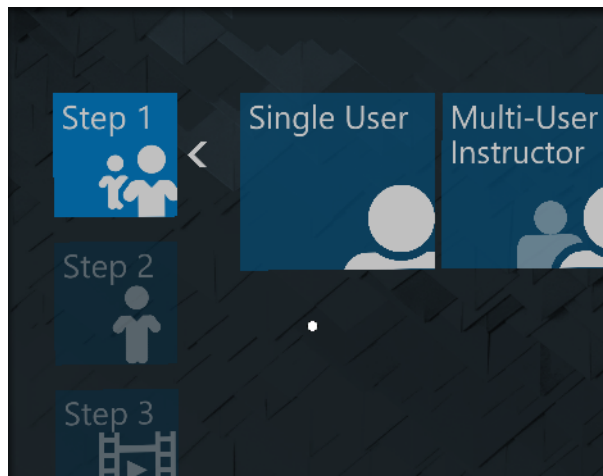
## Holographic Modes

### Single User Mode

To use the application in single user mode:

From the **Select your experience** menu, Steps 1-4 will appear on the left side of the screen.

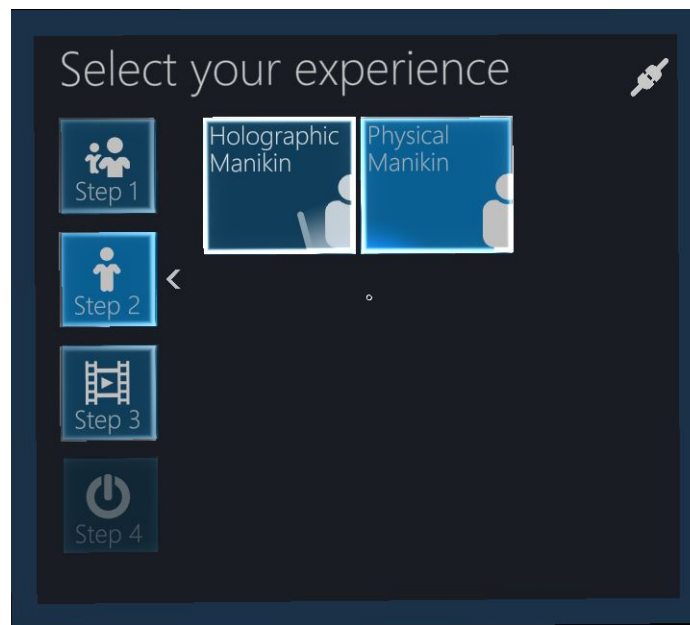
- a. In Step 1, Air Tap **Single User**.



*Select Your Experience Menu - Step 1*

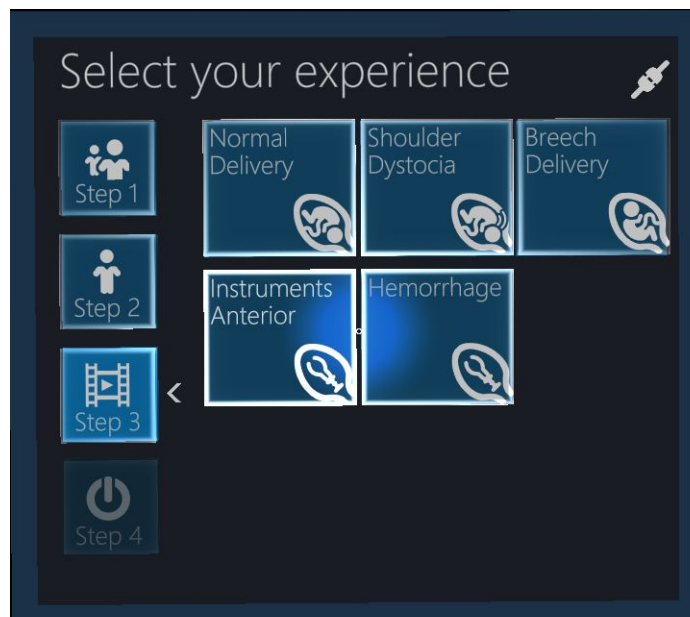


- b. In Step 2, Air Tap **Holographic Manikin**.



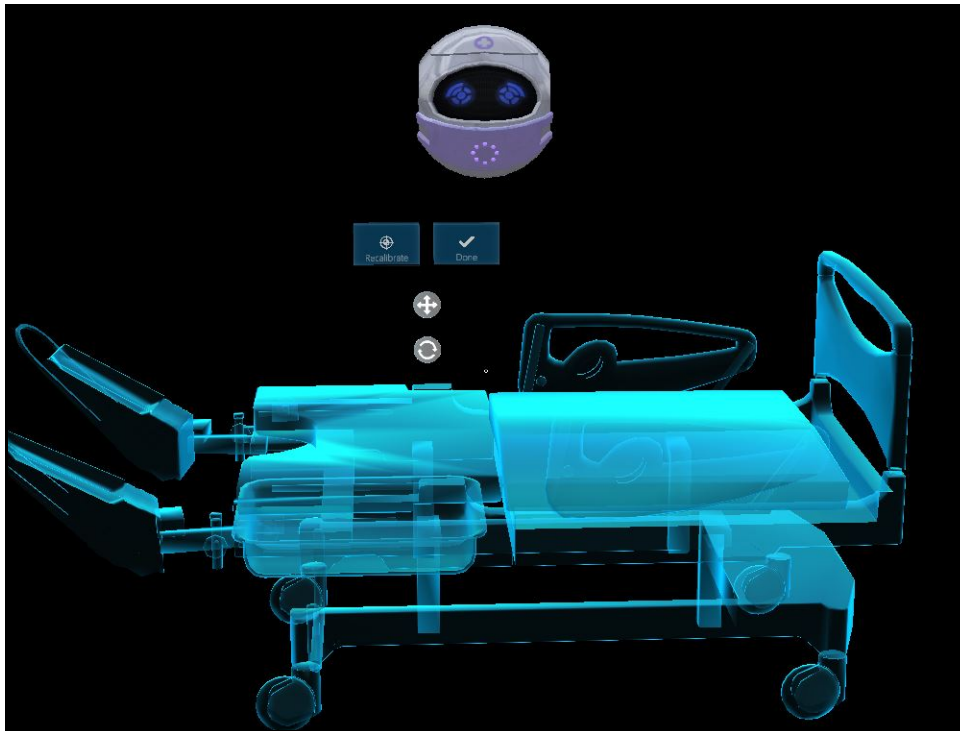
**Select Your Experience Menu - Step 2**

- c. In Step 3, SCEs are available. Air Tap the SCE that you want to use.



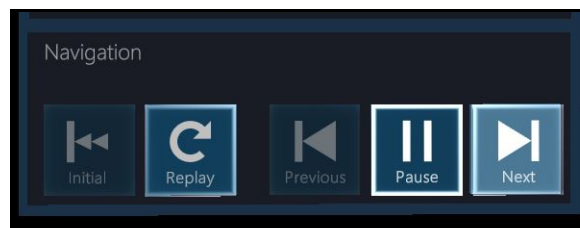
**Select Your Experience Menu - Step 3**

- d. In Step 4, Air Tap **Start** to start the simulation.
- e. A Red circle will appear. Gaze at the floor and Air Tap to anchor the hologram in place.  
The holographic bed will now appear.
- f. Manipulate the move and rotate arrows to move and rotate the holographic bed to the desired position over the physical manikin.



*Fine Tuning Calibration - Holographic Bed*

- g. When the holographic bed is in place, Air Tap **Done** to start the simulation.
- h. Lift your hand, palm facing you to open the In Experience Chapter controls.



*In Experience Chapter Controls*

- i. Air Tap **Next** to go to the first chapter. Here, you will be able to view the holographic manikin.

**Note:** If the holographic anatomy has a flashing highlight, you can Air Tap on the anatomy for more information. The anatomy or organ will rise and provide an informative clinical experience.

- j. When the chapter is complete, Air Tap **Next** to play the next chapter. If you need to replay a chapter, Air Tap **Replay**.

**Note:** To select a new SCE, hold up your palm facing you to access the Home button.

## Multi-User Mode

When a user chooses Multi-User Instructor in Holographic mode, the individual who selected the Multi-User Instructor function is designated as the instructor and has sole control of advancing the SCEs.

### *Instructor*

To begin a simulation:

1. On the **Select your experience** menu:
  - a. Air Tap **Multi-User Instructor**.
  - b. Air Tap **Holographic Manikin**.
  - c. Air Tap **Start** to start the calibration.
2. **Calibrate** your holograms as done in Single User mode.
3. Wait for the learners to connect before changing the chapter.  
A Hologram Sharing window will appear. When the learners are ready, Air Tap **Start**.

### *Learner*

To join an instructor-led simulation:

1. On the **Select your experience** menu:
  - a. Air Tap **Multi-User Learner**.
  - b. Air Tap **Join Session** to start the calibration.

You automatically receive the position of the instructor's holograms.

If you are satisfied with the position of the instructor's holograms, simply wait for the instructor to start the chapter.



**Hologram Sharing Screen**

If you feel the need to recalibrate the holograms to the desired position, you can stop receiving the instructor's holograms and proceed with manual calibration, as done in Single mode.

- c. Once you are done calibrating, Air Tap **Done** to join the simulation.

## End the Simulation

To end a CAE LucinaAR simulation with the HoloLens 2:

- a. Use the **Summon Menu** gesture to access the LucinaAR Start menu.
- b. Air Tap the **Home** icon at the bottom of the Start menu.
- c. Air Tap the **Remove (x)** icon in the upper-right corner of the LucinaAR Startup window to exit and close the window.
- d. Glance around the environment and verify that all virtual windows have been closed.

## Power Off the HoloLens 2 and Simulator

You must power off the HoloLens 2 and simulator.

To power off the HoloLens 2:

- a. Press and hold down the power button on the head band until the HoloLens 2 says, "Goodbye."
- b. Plug the power supply into the HoloLens 2 and allow the unit to recharge.

To power off the simulator:

- a. Stop the SCE and exit Müse.
- b. Turn off the tablet.
- c. Press the power button on the manikin to power down.

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# SOFTWARE UPDATES

An Azure Active Directory Account is created when you purchase the CAE LucinaAR application. This account will allow you to access the CAE Healthcare tab on the Microsoft Store website, where you can install and update the application from the HoloLens 2. The password is account specific and will be used to login automatically with HoloLens 2. If you require assistance, contact CAE Customer Service.

When an CAE LucinaAR application update is released, a notification is sent to all customer sites that use that application. Since software used on the HoloLens 2 does not update automatically, the user must follow the steps below to update the CAE LucinaAR application.

**Note:** Prior to checking for updates, ensure the HoloLens 2 is connected to a WiFi network with Internet access capabilities.

Software Updates Procedure	
1	Establish an Internet Connection
2	Update the Operating System
3	Download Updates from Microsoft Store
4	Check for CAE LucinaAR Application Updates
5	Manage Network Connections
6	Configure the Start Menu

## Step 1: Establish an Internet Connection

To establish an Internet Connection:

- a. Use the **Summon Menu** gesture and tap the icon on your wrist to view the Start menu.
- b. Air Tap to select the **Settings** icon.
- c. Air Tap to select the **Network & Internet** icon.



*Settings Window - Network & Internet Icon*

- d. Choose a displayed WiFi network with Internet capabilities and Air Tap **Connect**. If required, enter a password for the network.  
**Note:** Use care when selecting characters on the virtual keyboard.
- e. Once the connection is made, Air Tap the **Go back** arrow in the upper-left corner of the Settings window to return to the main Settings menu.

## Step 2: Update the Operating System

The HoloLens 2 operating system and Microsoft Store should be updated whenever new CAE applications are to be installed. Install Windows operating system updates before installing Microsoft Store updates.

**Note:** An operating system update can take several hours to complete depending on the speed of your WiFi network connection. Prior to starting the update process, ensure that the HoloLens 2 is charged.

To update the HoloLens 2 operating system:

- a. Air Tap to select the **Update & Security** icon.
- b. Air Tap the **Check for updates** button even if it says, "You're up to date." If any HoloLens 2 operating system updates are available, they will begin the download and install process.



**Note:** This step could take more than 20 minutes to complete.

- c. After the download is complete, Air Tap the **Restart now** button to complete the installation.

**Note:** This step could take more than 20 minutes to complete. While the HoloLens 2 is restarting and installing software, you may connect the HoloLens to power.

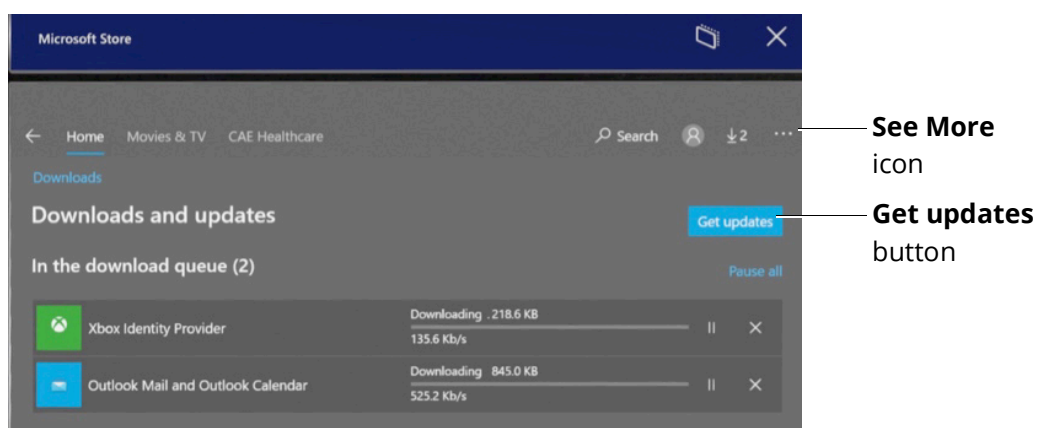
DO NOT place the HoloLens 2 upside-down.

- d. Repeat all steps listed in Step 1 and steps a through c listed here in Step 2 until there are no more HoloLens 2 operating system updates to download and install.
- e. Air Tap the **X** in the upper-right corner of the window to close.

## Step 3: Download HoloLens 2 Updates from Microsoft Store

To download HoloLens 2 application updates from the Microsoft Store:

- a. Use the **Summon Menu** gesture to open the Start menu.
- b. Air Tap the Microsoft Store icon.
- c. Air Tap the **See More** icon (three horizontal dots) near the upper-right corner of the Microsoft Store window.
- d. Air Tap **Downloads and updates**.
- e. Air Tap the **Get updates** button.



**See More Icon and Get Updates Button**

**Note:** It may take a few minutes for the available updates to be displayed and downloaded. If there are no updates, it will indicate, "You're good to go."

- f. Air Tap the **See More** icon again. Select **My Library**.

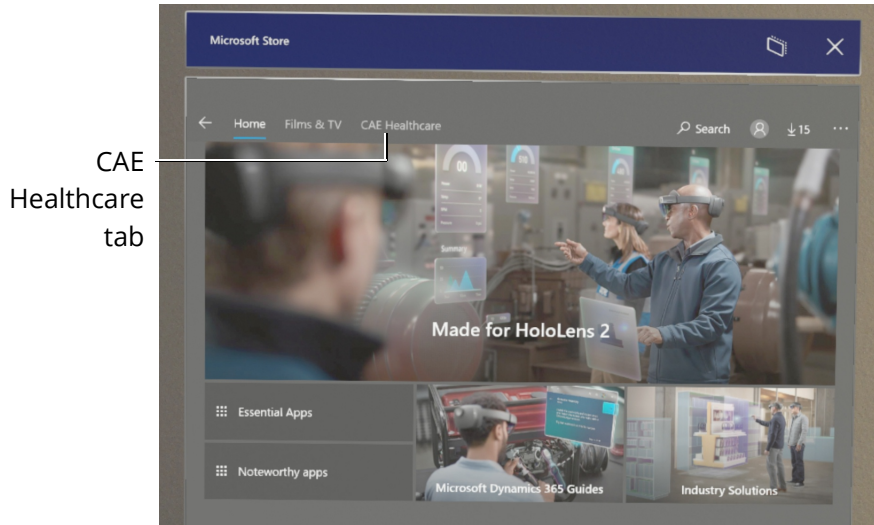
- g. Install Microsoft Store or other HoloLens 2 related apps if indicated.

**Note:** Do not install Candy Crush, Twitter, or any other non-essential apps that may appear.

# Step 4: Check for CAE LucinaAR Application Updates

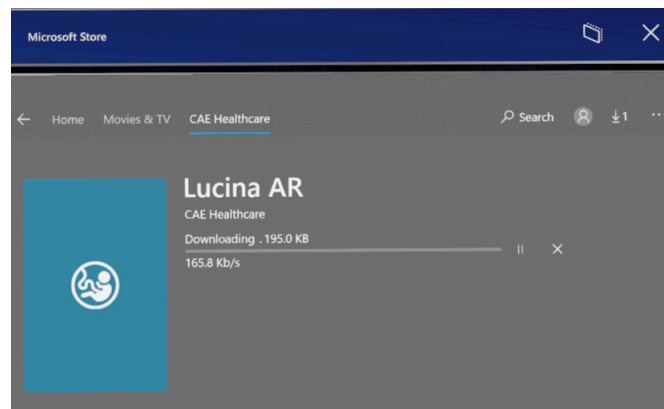
To download CAE Healthcare AR applications and updates:

- a. From the Microsoft Store, Air Tap the CAE Healthcare tab. All applications in your Azure account will be listed here.



**Microsoft Store - CAE Healthcare Tab**

- b. Air Tap the LucinaAR App, and pause for approximately 10 seconds. If there is an update available, it will begin to download to the HoloLens 2.

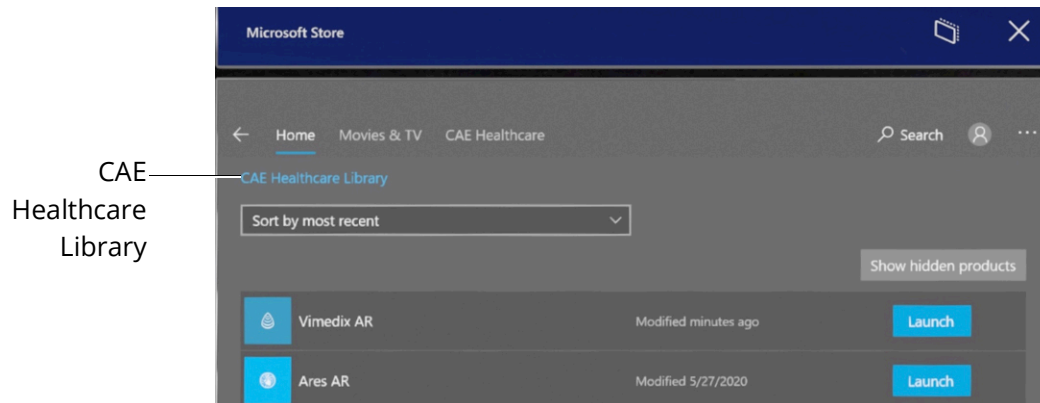


**CAE LucinaAR App Downloading**

- c. Air Tap **X** in the upper-right corner to exit the store and close the window.

**Note:** The download status of the CAE Healthcare applications can also be seen on the Downloads and updates - Recent Activity. Air Tap the **See More** icon, then Air Tap **Downloads and updates**.

Additionally, all owned CAE Healthcare applications are shown in the Library. Air Tap the **See More** icon, then Air Tap **My Library**. Filter displayed apps by **CAE Healthcare Library**.



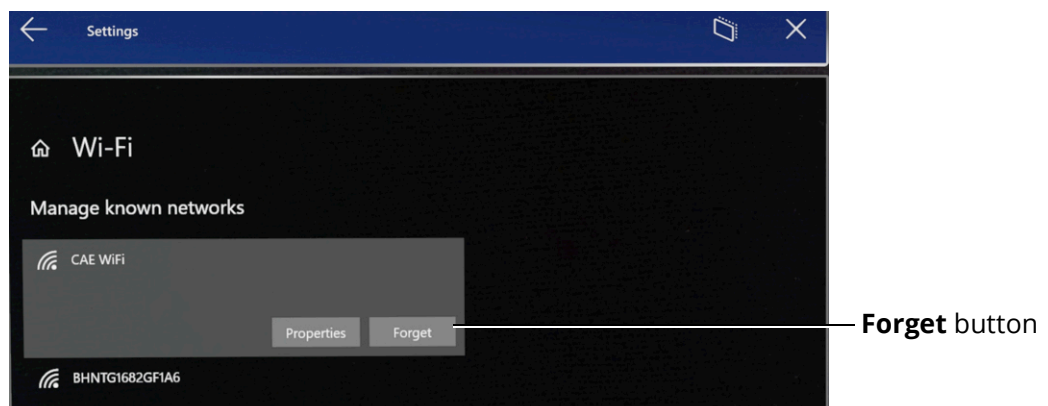
*Microsoft Store - CAE Healthcare Library*

## Manage Network Connections

To remove extra networks from the Known Networks list:

- Air Tap on the **X** in the right corner to close all open windows.
- Use the **Summon Menu** gesture to view the Start menu.
- Air Tap the **Settings** icon.
- Air Tap the **Network & Internet** icon.
- Air Tap the **Manage known networks** option below the list of available WiFi networks.

**Note:** Scroll to the bottom of the list to see the **Manage known networks** option.



*Manage Known Networks Option*

- Air Tap any network other than your product's WiFi network, then Air Tap the **Forget** button when it appears.

Repeat this step until only your product's WiFi network(s) remain.

- g. To Connect to your desired product's network, Air Tap on its name and select **Continue**.

**Note:** You may be required to enter a password for the network. Use care when selecting characters on the virtual keyboard. The system's network password is **caadmin**.

- h. Air Tap the **X** in the upper-right corner to close the Settings window.

## Configure the Start Menu

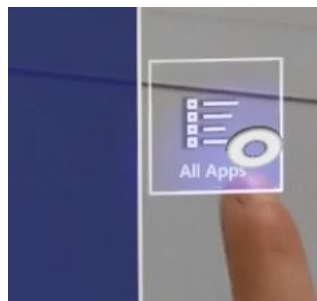
HoloLens 2 operating system updates may alter your Start menu configuration.

If this happens, you can unpin or pin applications to your Start menu by selecting the application with Air Tap and Hold. A dialog box will appear with the available options.

**IMPORTANT:** Be careful not to select the Uninstall option when unpinning an application.

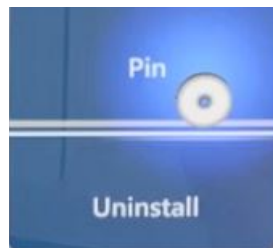
If you don't see the LucinaAR app icon in the Start menu, follow these instructions:

- a. Air Tap the **All Apps** icon to the right of the menu.



**All Apps Icon**

- b. Air Tap and Hold the LucinaAR icon, then Air Tap the **Pin** button to pin the app to the Start menu.



**Pin Button**

# WARRANTY FOR HOLOLENS 2

The warranty for the HoloLens 2 device is covered by the manufacturer, Microsoft, for one year. CAE Support will only cover CAE AR software applications. Please visit this link for more information:

<https://support.microsoft.com/en-ca/help/4526577/microsoft-hololens-warranty-information>

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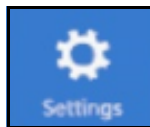
# TROUBLESHOOTING

If you encounter problems while operating your CAE LucinaAR, check the common solutions below or contact your IT Department.

## Wireless Connection Issue

To connect to the desired simulator network:

1. Use the **Summon Menu** gesture and tap the icon on your wrist to view the Start menu.
2. Air Tap to select the **Settings** icon.



*Settings Icon*

3. Air Tap to select the **Network & Internet** icon.
4. Choose the displayed WiFi network with the desired product's name and Air Tap **Connect**.
5. If required, enter the password for the network: **caeadmin**.

**Note:** Use care when selecting characters on the virtual keyboard.

## Warnings

If a problem is detected, a warning icon will appear, prompting further action. If the problem cannot be resolved, please contact CAE customer service.



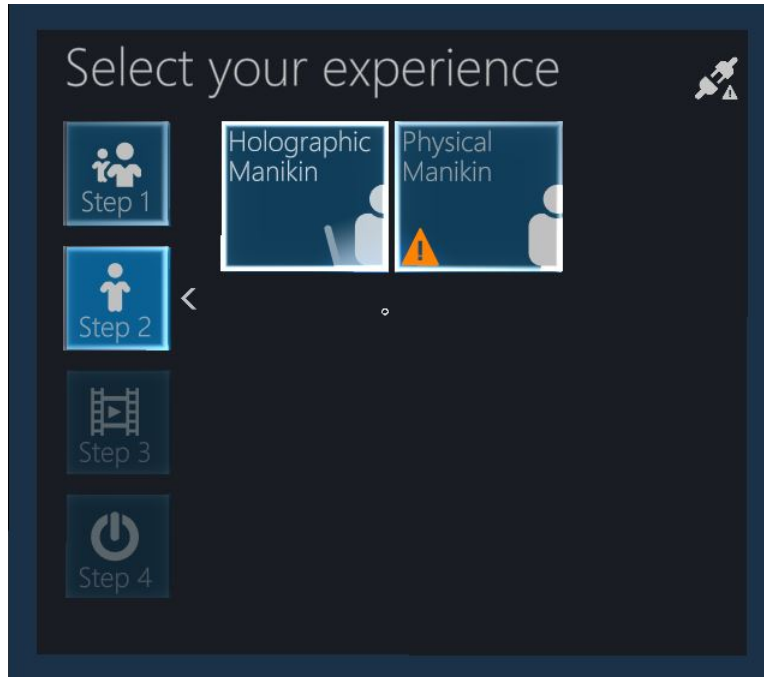
*Warning Icon*

## Simulator Warnings

Some of the warnings you may encounter pertain to the simulator, in which the warning icon will appear like the following:

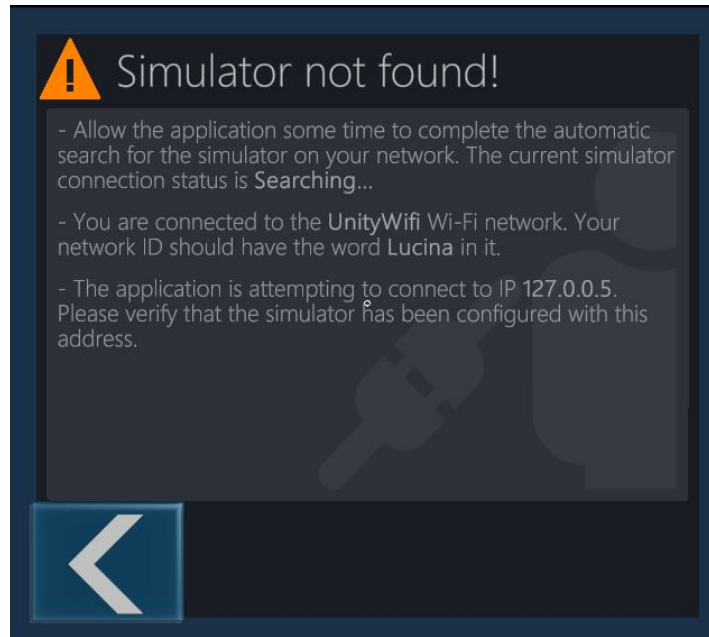
***Simulator Not Found Warning***

While selecting your experience on the Select Your Experience screen, if the application detects any problem a warning icon may appear like the following:



***Select Your Experience - Simulator Not Found Warning***

Air Tap on the button with the warning icon to open the Troubleshooting panel. You will find information about your current issue and appropriate steps to help you solve the problem.



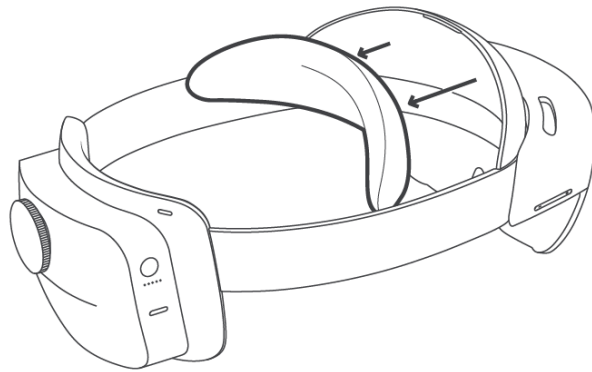
*Troubleshooting Panel*

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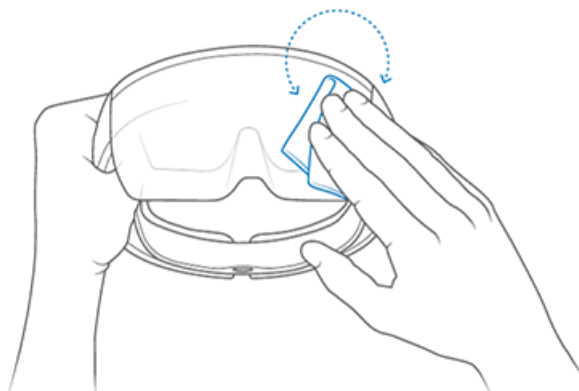
# CARE AND CLEANING

Handle your HoloLens 2 carefully to prevent damage by following these tips for care and cleaning:

- Always use the headband to lift and carry the HoloLens 2.
- Keep the HoloLens 2 visor free of dust and fingerprints. Avoid touching the visor when possible as repeated cleaning could cause damage.
- DO NOT use cleaners or solvent. DO NOT submerge in water or apply water directly to the HoloLens 2.
- To clean the visor:
  - Remove the brow pad by pulling gently away.



- Remove dust with a camel or goat hair lens brush or bulb-style lens blower.
- Lightly moisten the included microfiber cloth with a small amount of distilled water and a mild antibacterial soap. Wipe the visor gently in a circular motion.



*Cleaning the Visor*

**Note:** Lens cleaners can be abrasive and are NOT recommended.

- To clean the device:
  - Remove any dust by gently wiping with a dry lint-free microfiber cloth.
  - Lightly moisten the cloth with a medical 70% isopropyl alcohol. Gently wipe the surface of the device. Allow the device to dry completely before using.
- To clean the brow pad:
  - Wipe the brow pad with a microfiber cloth moistened with water and a mild antibacterial soap.
  - Replace the brow pad.

**Note:** Bleach-based wipes are NOT recommended. For more information about cleaning the HoloLens 2 device, go to the link <https://docs.microsoft.com/en-us/hololens/hololens2-maintenance>



For more information about CAE products, contact your regional sales manager or the CAE distributor in your country, or visit [caehealthcare.com](http://caehealthcare.com).

Tel +1 941-377-5562 or 866-233-6384

For customer service, please contact CAE.

**Customer Service Headquarters - United States**

Monday - Friday from 7:00 a.m. to 6:00 p.m. ET

Phone 1-866-462-7920

Email: [srqcustomerservice@cae.com](mailto:srqcustomerservice@cae.com)

**Customer Service - Canada**

Monday - Friday from 8:00 a.m. to 5:00 p.m. ET

Phone 1-877-223-6273

Email: [can.service@cae.com](mailto:can.service@cae.com)

**Customer Service - Europe, Middle East, and Africa**

Monday - Friday from 8:00 a.m. to 5:00 p.m. CET

Phone +49 (0) 6131 4950354

Email: [international.service@cae.com](mailto:international.service@cae.com)

**Customer Service - United Kingdom and Ireland**

Monday - Friday from 9:00 a.m. to 5:00 p.m. GMT

Phone +44 (0)800-917-1851

Email: [uk.service@cae.com](mailto:uk.service@cae.com)

**Customer Service - Latin America**

Monday - Friday from 9:00 a.m. to 5:00 p.m. BRT/BRST

Phone +55 11 5069-1510

Email: [la.service@cae.com](mailto:la.service@cae.com)

**Customer Service - Asia Pacific**

Monday - Friday from 8:00 a.m. to 5:00 p.m. CET

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