OLYMPUS





Endonix Simulator

Quick Reference Guide

Professional Affairs, Global

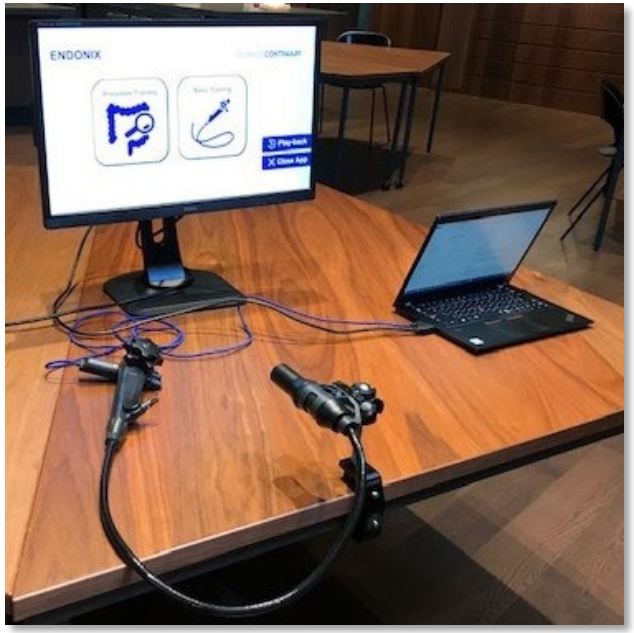
OLYMPUS CONTINUUM

1 Components

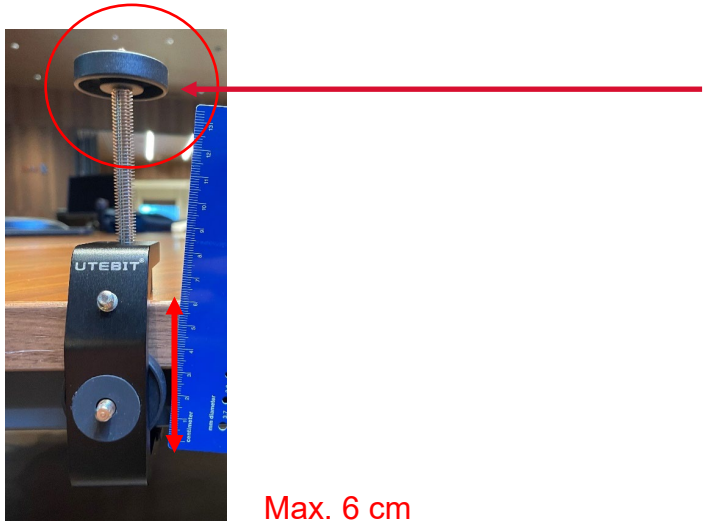
Holder

ENDONIX Controller
- Made by 3D Printer

USB Cable
- Connect to Laptop / PC
- Pre-installed on the controller



2 Setup



Max. 6 cm

Step 1

- Connect the stage on the table
- Thickness of top board is maximum 6 cm

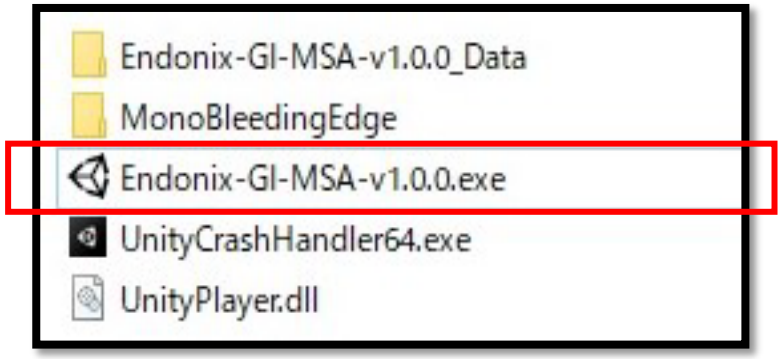
Step 2

- Connect the adapter on the stage

Step 3

- Connect the tip of ENDONIX on the adapter

2 Setup



Step 4

- Connect the USB cable to USB connector on the laptop

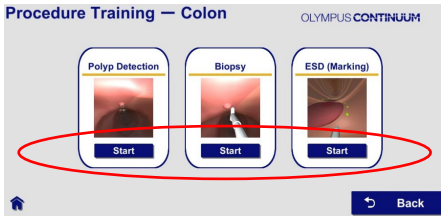
Step 5

- Activate application **Endonix-GI-MSA-v1.0.0.exe**
- If the controller is not complete, reconnect the cable and try again

Step 6

- Confirm the app activation on the monitor

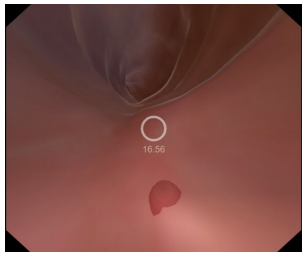
3 Skill Training – Procedure Training



Procedure Training

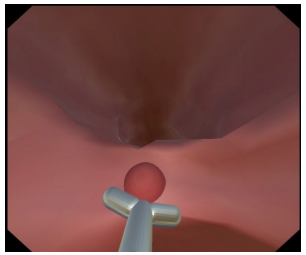
- Select **Procedure Training**
- Click **Colon**
- Select **Polyp Detection**, **Biopsy**, or **ESD Marking** and click button **Start**

Polyp Detection



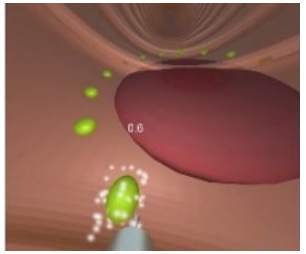
- Simulate the detection of a colonic polyp
- Target the circle to polyp, then keep 2 seconds
- Polyp will be disappeared

Biopsy



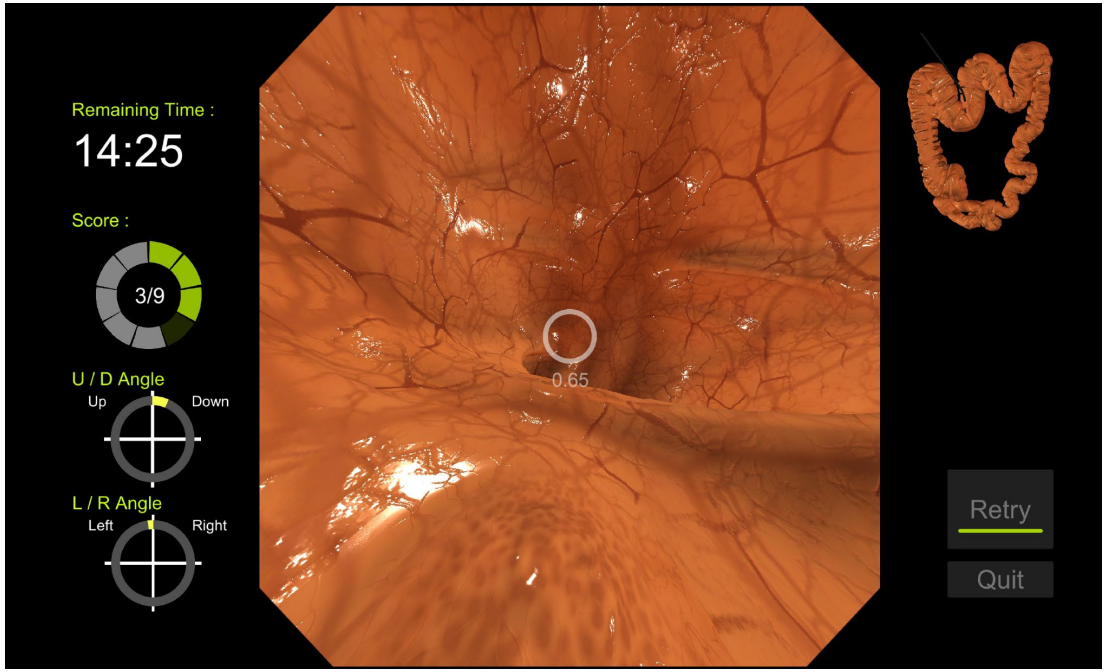
- Simulate the biopsy with dummy forceps
- Target the device to polyp, then keep 2 seconds
- Polyp will be disappeared

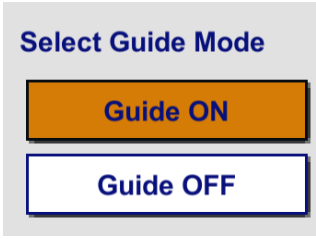
ESD Marking



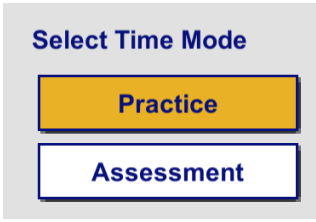
- Simulate the procedure for ESD marking with dummy knife
- Target the device to yellow circles, then change to white circles

3.1 Polyp Detection





Guide ON: Displays real-time gauge of angle operation
Guide OFF: Disappear real-time gauge of angle operation



Practice: Free-time mode. No recording of the procedure, no data will be stored in "Playback"
Assessment: 5 minutes time limit. All procedures are recorded and can be seen it in "Playback"

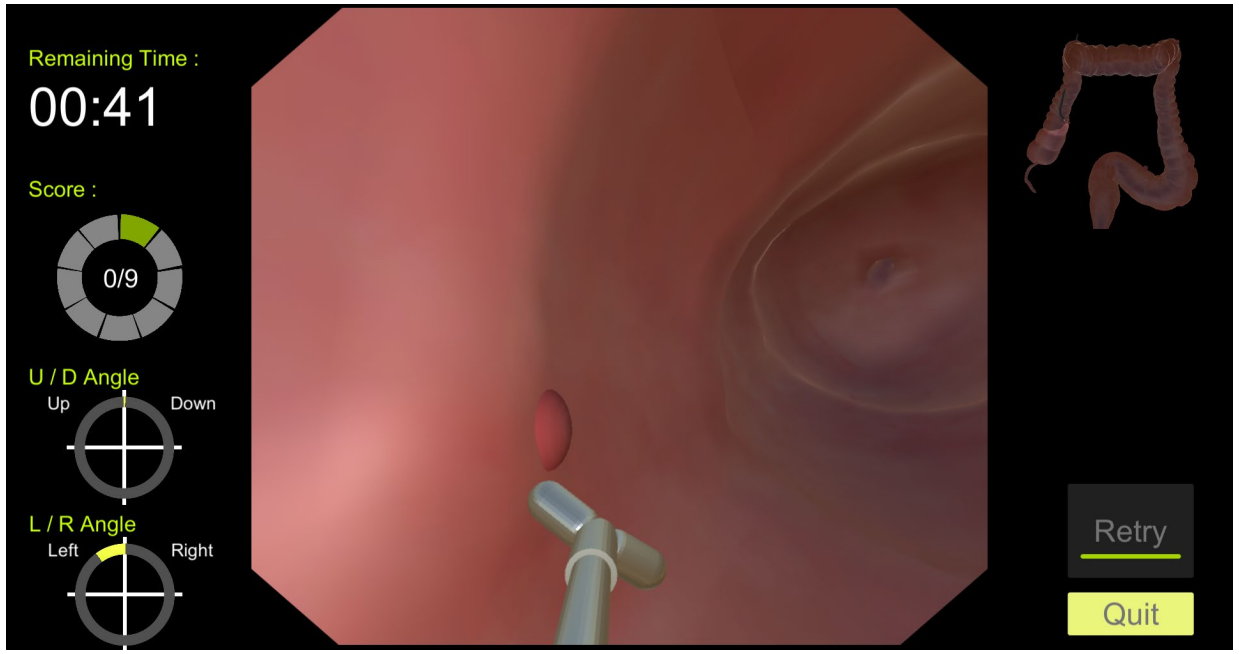
Learning Objective

To freely control the U/D and R/L angulation knobs. Practice this until you can operate the knobs properly without looking at them or at your hand

Task Rules

1. Start at the point where the scope tip has reached the cecum.
2. While withdrawing the scope, find the 9 polyps.
3. When you approach a polyp and maintain that position for a certain period of time, it counts as a find (About 2 seconds).
4. A number is displayed on the screen that indicates the distance between the scope tip and polyp. The appropriate distance is 15 or less. It changes if the scope is moved, so keep the scope still for a certain period of time.
5. The task is finished when the designated time runs out or you have found all 9 polyps.

3.2 Biopsy



Select Guide Mode

Guide ON

Guide OFF

Guide ON: Displays real-time gauge of angle operation
Guide OFF: Disappear real-time gauge of angle operation

Select Time Mode

Practice

Assessment

Practice: Free-time mode. No recording of the procedure, no data will be stored in “Playback”
Assessment: 5 minutes time limit. All procedures are recorded and can be seen it in “Playback”

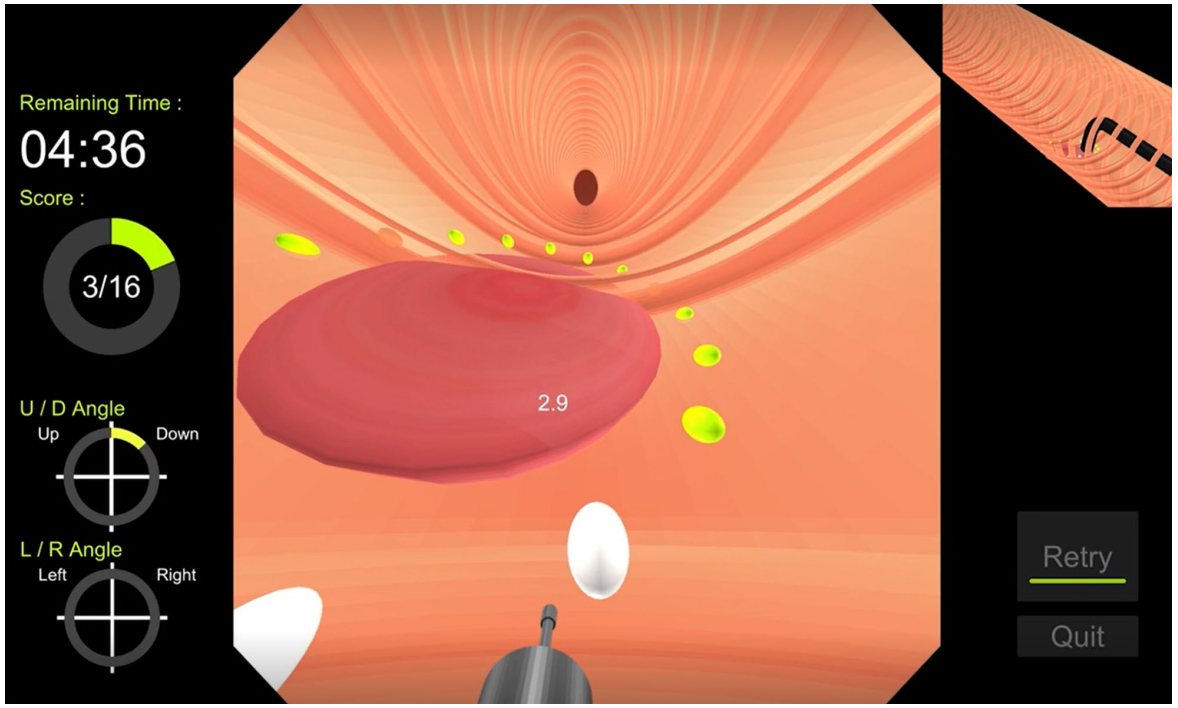
Learning Objective

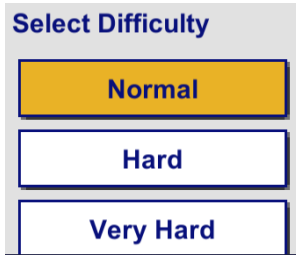
To exercise in endoscopic maneuvering which simulates biopsy of a colonic polyp.
Get accustomed to endoscopic maneuvering including device manipulation. Practice until you can properly place the device tip on the polyp.

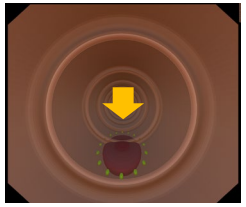
Task Rules

1. Start at the point where the scope tip has reached the cecum.
2. While withdrawing the scope, find and biopsy the 9 polyps.
3. A successful biopsy is registered when you find and approach a polyp, biopsy the tissue, and pull the device back to the original position.
4. The forceps open and close automatically.
5. The task is finished when the designated time runs out or you have biopsied all 9 polyps.

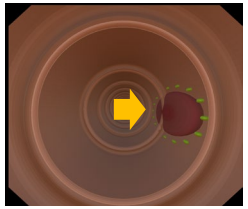
3.2 ESD Marking



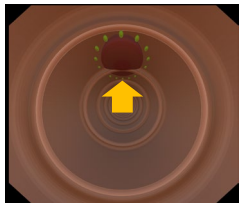




Normal



Hard



Very Hard

Normal: Polyps are located on the lower surface of the lumen
Hard: Polyps are located on the right side of the lumen.
Very Hard: Polyps are located on the upper surface of the lumen

Learning Objective

To exercise in endoscopic maneuvering which simulates ESD (marking).
Get accustomed to endoscopic maneuvering including device manipulation. Practice until you can perform delicate maneuvering of the device tip.

Task Rules

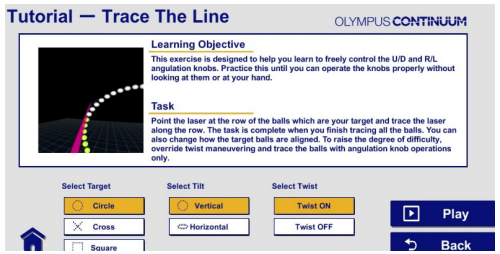
1. Bring the projected knife tip into contact with one of the yellow points. These are the reference points for circumferential marking.
2. When the forceps tip is in contact with the polyp, a number is displayed on the screen. Keep this number at 15 or less.
3. After a certain period of time, the biopsy task is cleared.
4. There are marking points (yellow balls) which have been positioned in advance. Place the device tip on those points to mark them while making sure not to contact the device tip with the lesion.
5. There are 16 marking points in total.
6. When the device tip is placed on a marking point for a certain period of time, marking takes place automatically.
7. The task is finished when the designated time runs out or you have marked all 16 marking points.

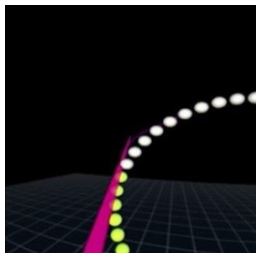
4 Skill Training – Basic Training

Basic Training

- Select **Basic Training**
- Select **Trace The Line** or **Fix The Center** and click button **Start**
- If you select **Play-back**, you can review the procedures in the six assessment mode
- You can close the App by clicking the **Close App** button or the upper right corner of the screen

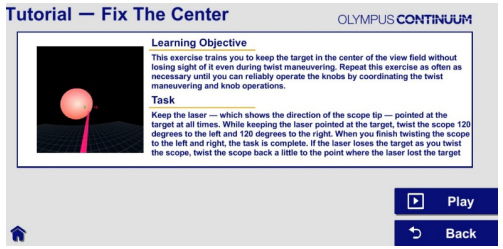
Trace The Line

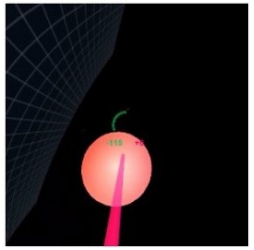




- Click **Play** Button
- Learn to freely control the U/D and R/L angulation knobs
- Target the laser line to yellow circles, then change to white circles

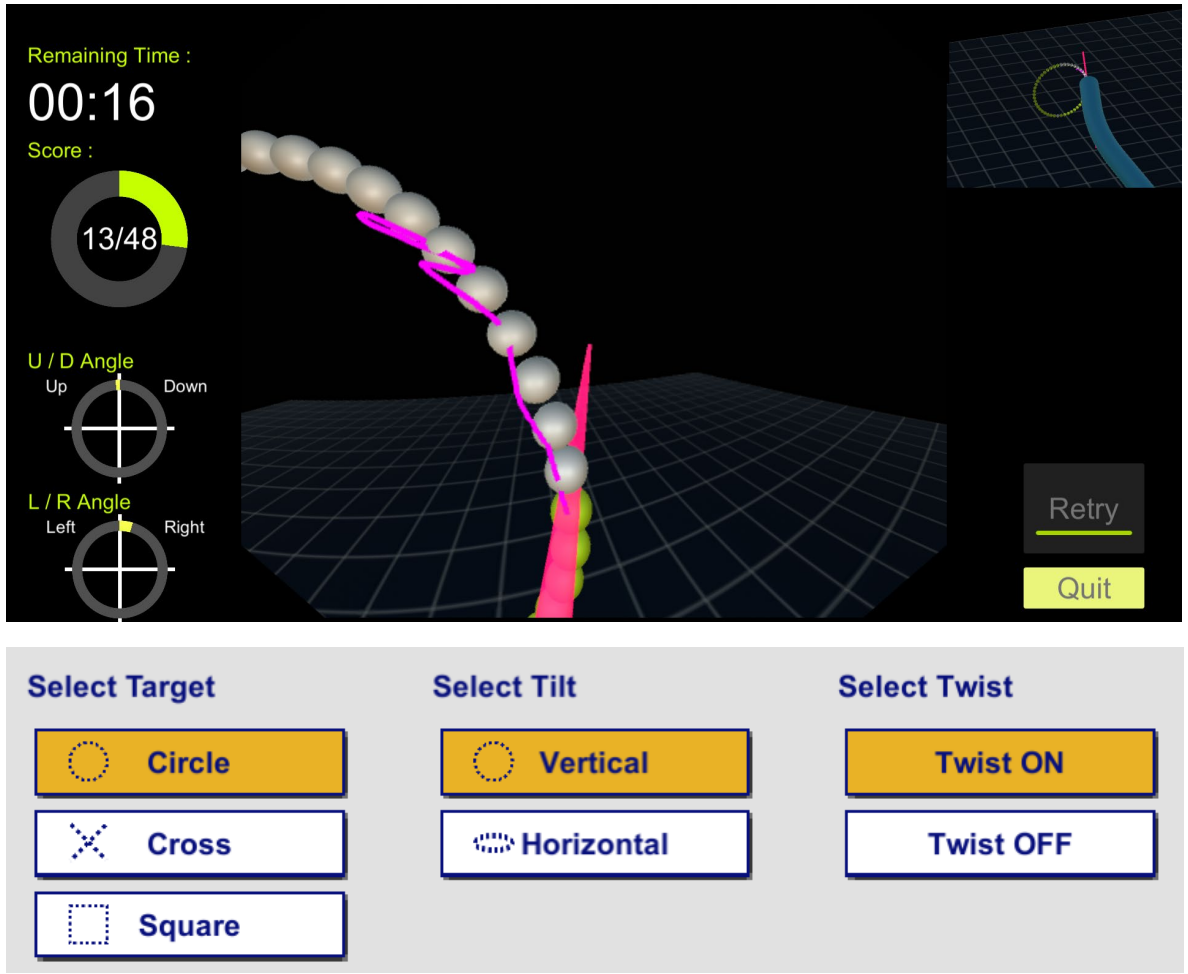
Fix The Center





- Click **Play** Button
- Learn to operate the knobs by coordinating the twist and knob operations
- Point at the target at all time, twist the scope 120 degrees to left and right

4.1 Trace The Line



- Target shape and tilt can be selected
- When you select **Twist OFF** using only the UD and LR dials

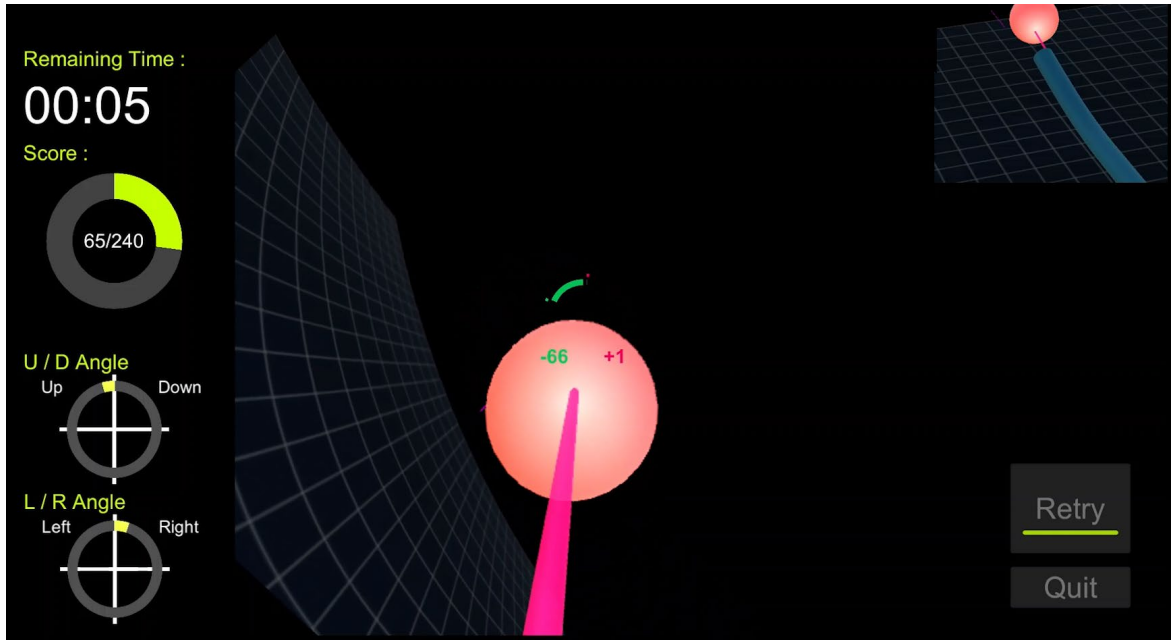
Learning Objective

To learn to freely control the U/D and R/L angulation knobs.
Practice this until you can operate the knobs properly without looking at them or at your hand.

Task Rules

1. Point the laser at the row of the balls which are your target and trace the laser along the row.
2. The task is complete when you finish tracing all the balls.
3. You can also change how the target balls are aligned.
4. To raise the degree of difficulty, override twist maneuvering and trace the balls with angulation knob operations only.

4.2 Fix The Center



Learning Objective

To keep the target in the center of the view field without losing sight of it even during twist maneuvering.
Repeat this exercise as often as necessary until you can reliably operate the knobs by coordinating the twist maneuvering and knob operations.

Task Rules

1. Keep the laser — which shows the direction of the scope tip — pointed at the target at all times.
2. While keeping the laser pointed at the target, twist the scope 120 degrees to the left and 120 degrees to the right.
3. When you finish twisting the scope to the left and right, the task is complete.
4. If the laser loses the target as you twist the scope, twist the scope back a little to the point where the laser lost the target and try twisting the scope again.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