

eyes<sup>3</sup><sup>®</sup> APP



eyes<sup>3</sup><sup>®</sup>

# ELECTRONIC LINE-CALLING

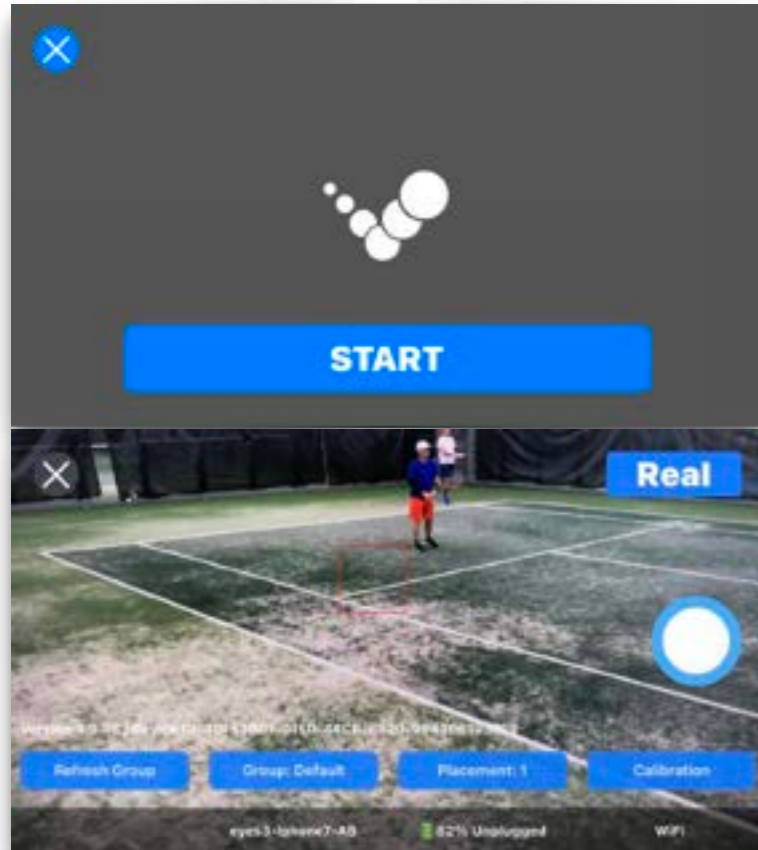
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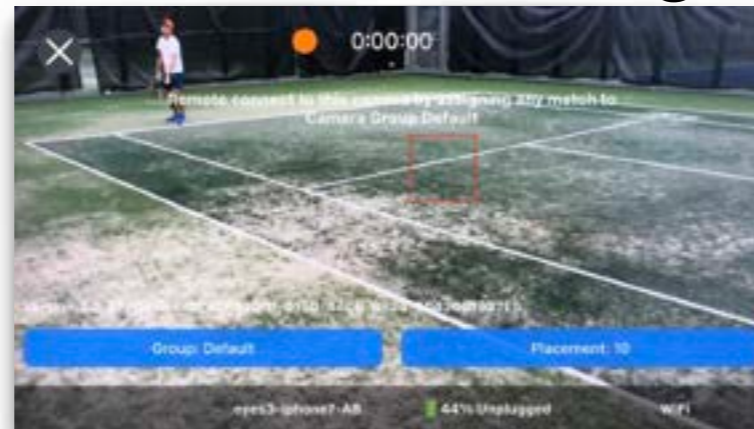
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eyes<sup>3</sup> APP comprises 4 separate components

## eyes<sup>3</sup> CAMERA



## eyes<sup>3</sup> CAMERA Match Recording



## eyes<sup>3</sup> CONTROL



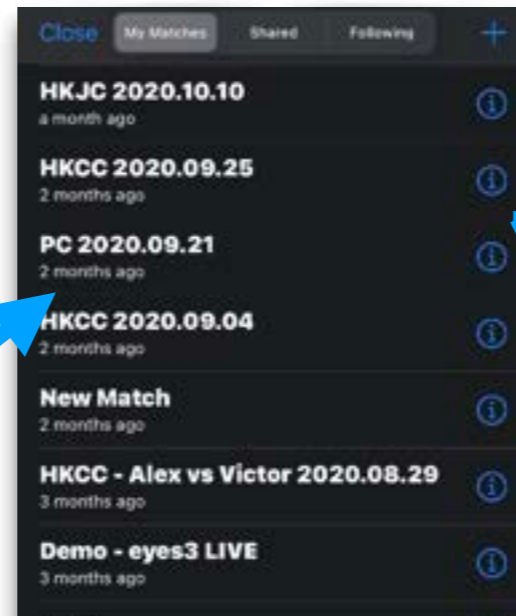
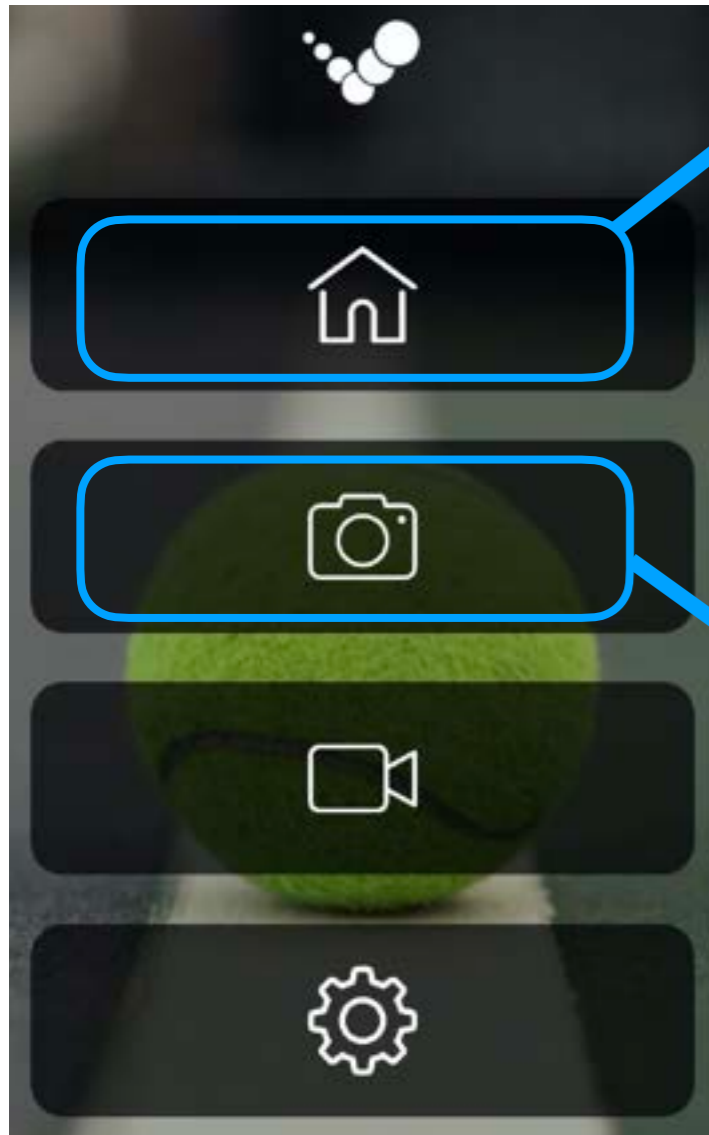
## eyes<sup>3</sup> SCOREBOARD

	Hermioni Hertz	0	2	0	0
	Jessica Joule	30	4	0	0

powered by eyes<sup>3</sup>

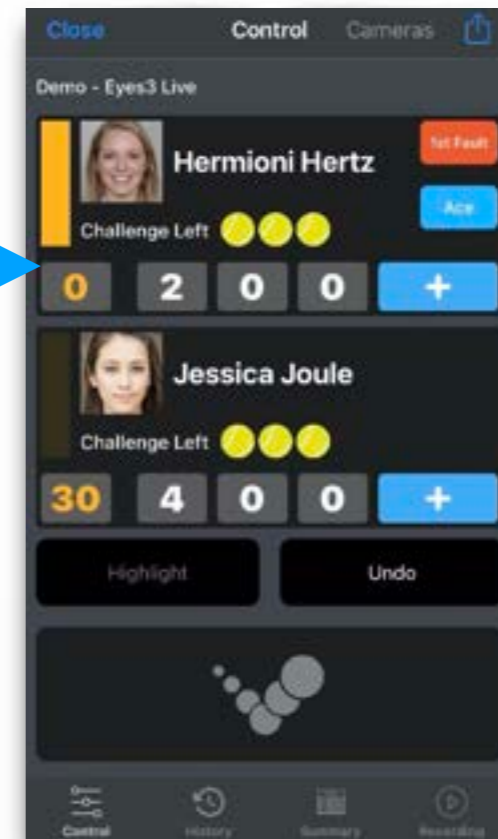
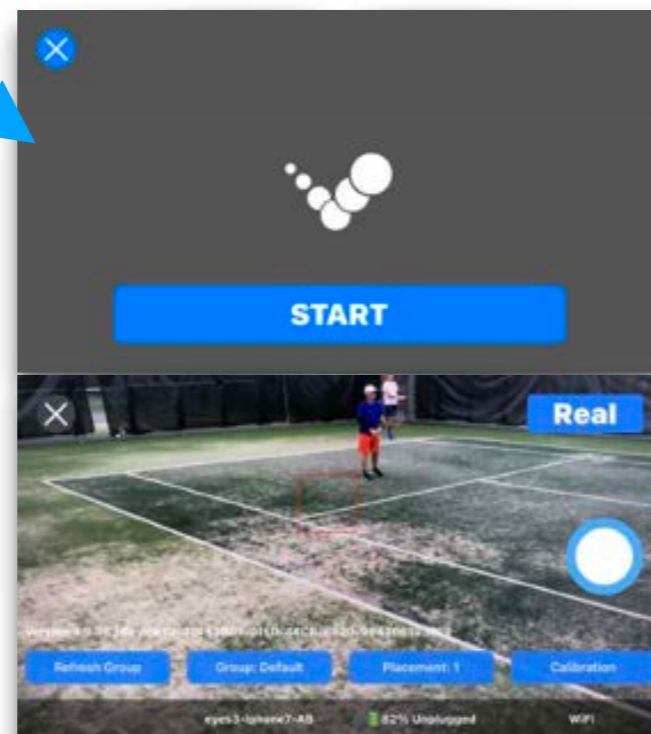


## eyes<sup>3</sup> APP



MATCH List

## eyes<sup>3</sup> CAMERA

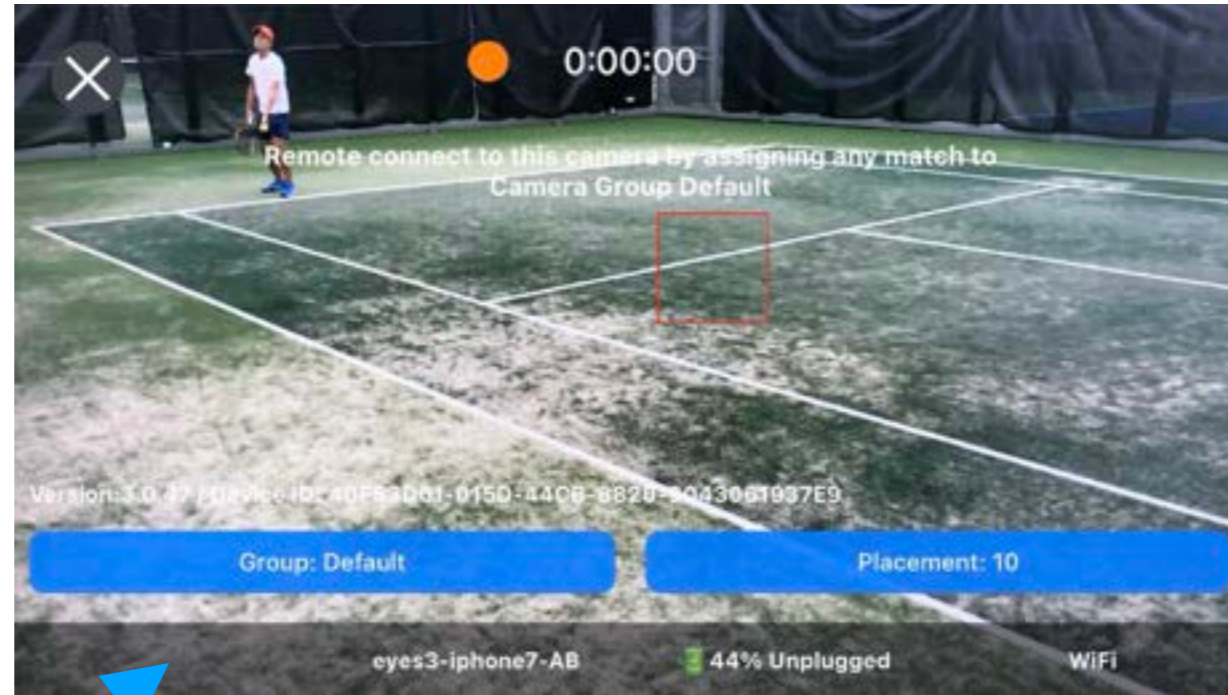
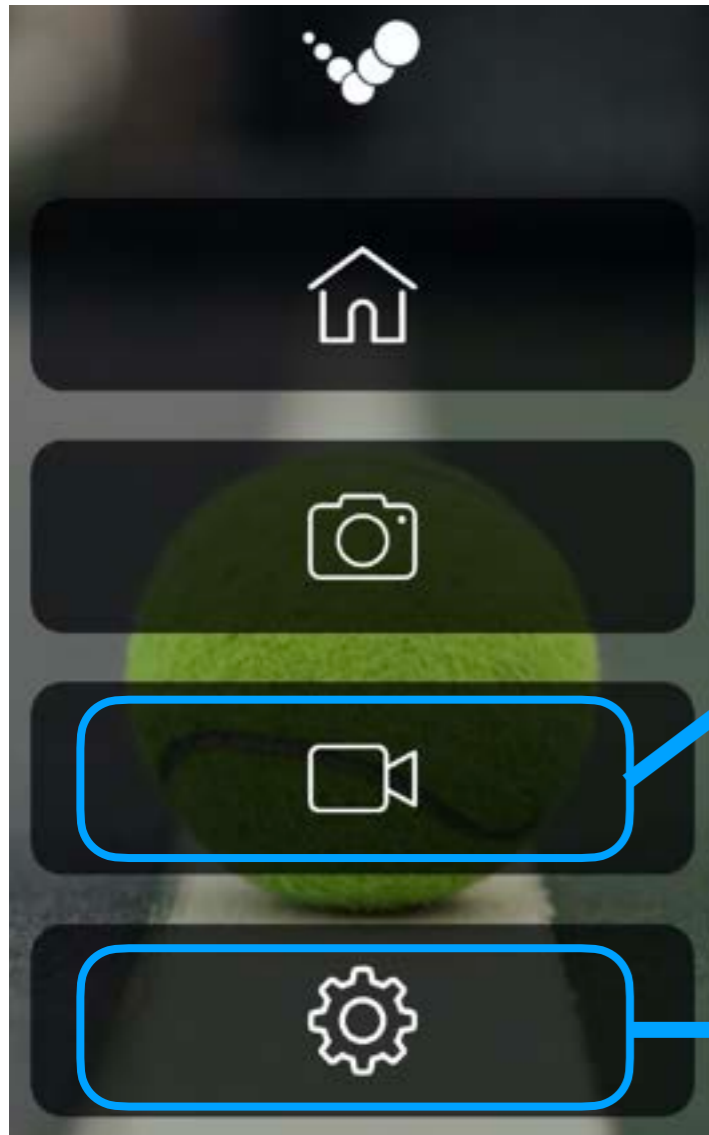


eyes<sup>3</sup> CONTROL (iPhone)

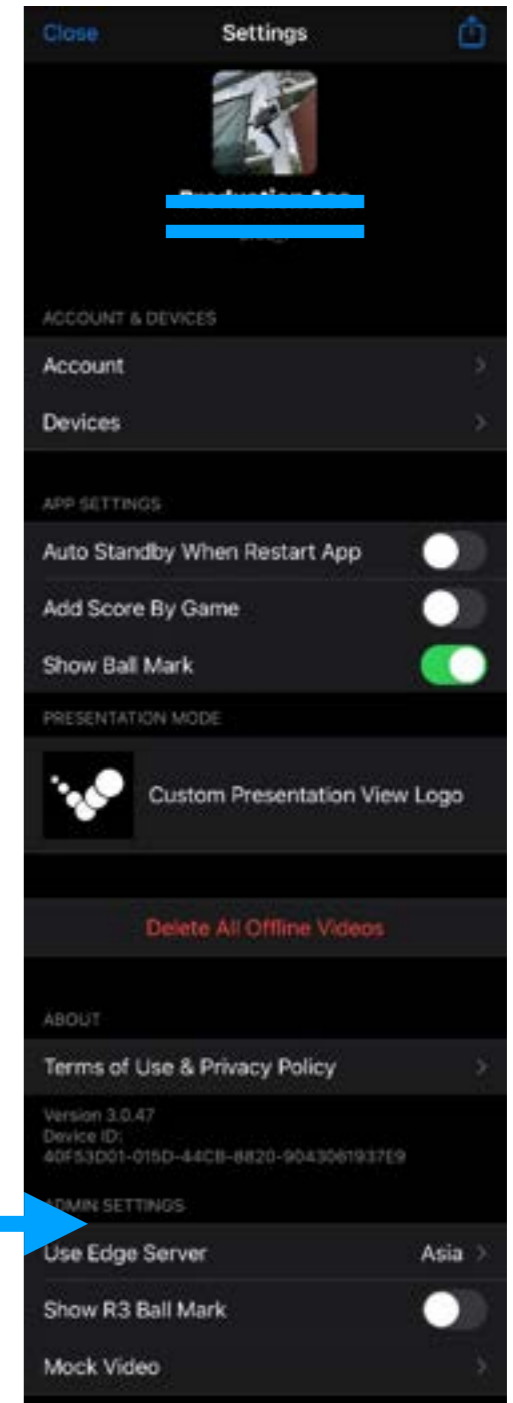


eyes<sup>3</sup> CONTROL (iPad)

## eyes<sup>3</sup> APP

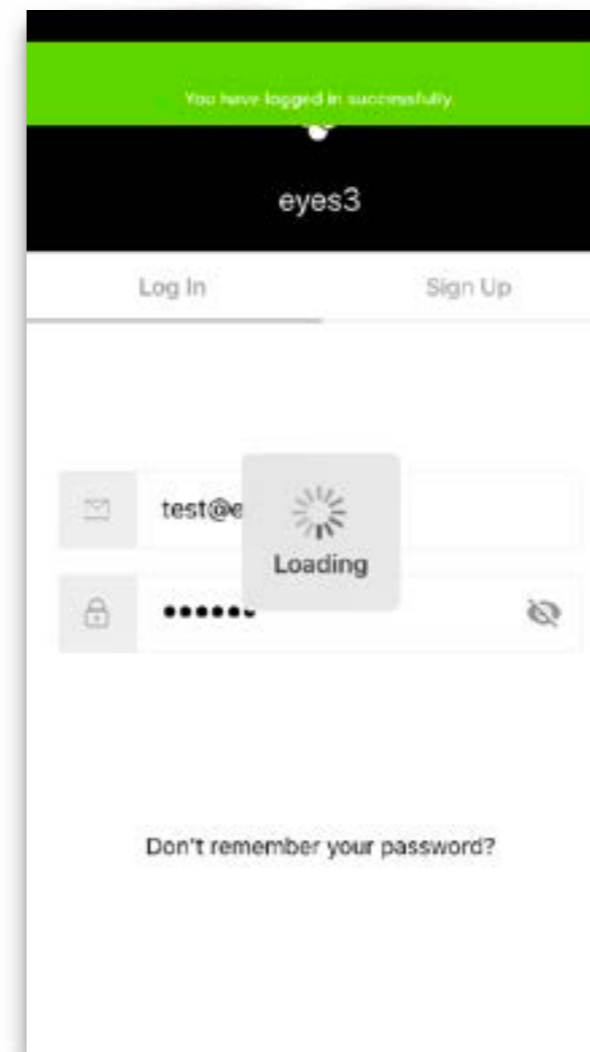
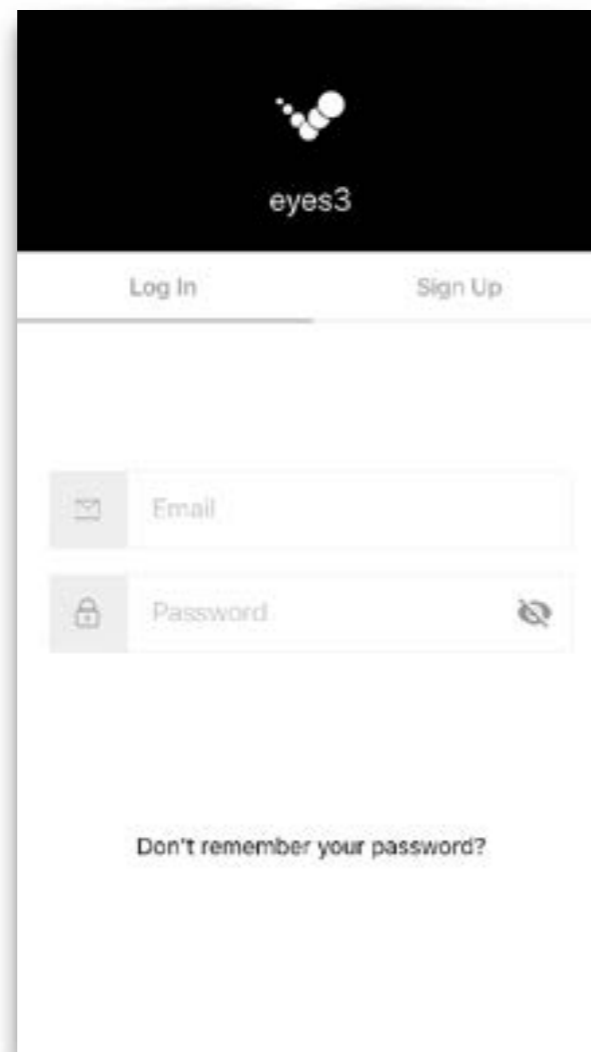


## eyes<sup>3</sup> MATCH RECORDING



## SETTINGS

Once you have the eyes<sup>3</sup> APP installed, you can sign up for an eyes<sup>3</sup> account or log in to an existing eyes<sup>3</sup> account.





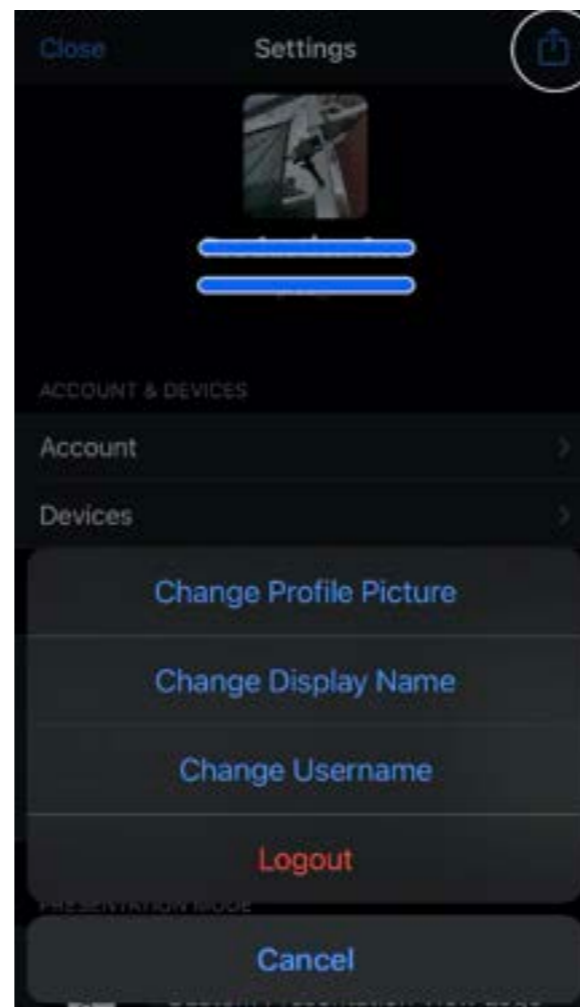
To assign Players to a MATCH created in eyes<sup>3</sup>, an eyes<sup>3</sup> account must first be created for the Player. This Player account can be created by the Player herself or by the User, on the Player's behalf. Once the Player account is created, she can be selected "From Friends" when Create MATCH.



Players can create their user accounts:

1. signing up for a new account at <http://www.eyes3.com>; or
2. directly through the eyes<sup>3</sup> APP

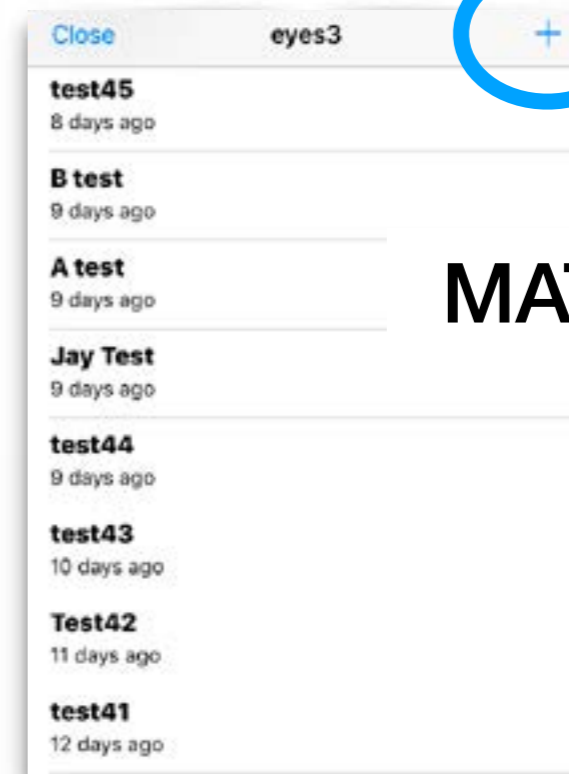
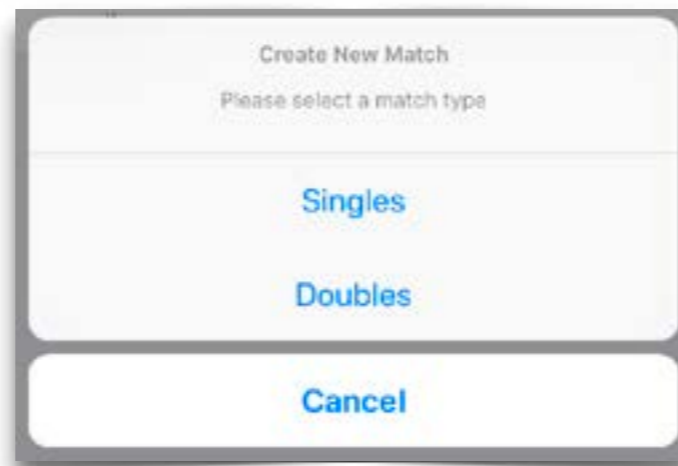
Once the user accounts have been created, users can upload their profile pictures, change their Usernames or Display Names.



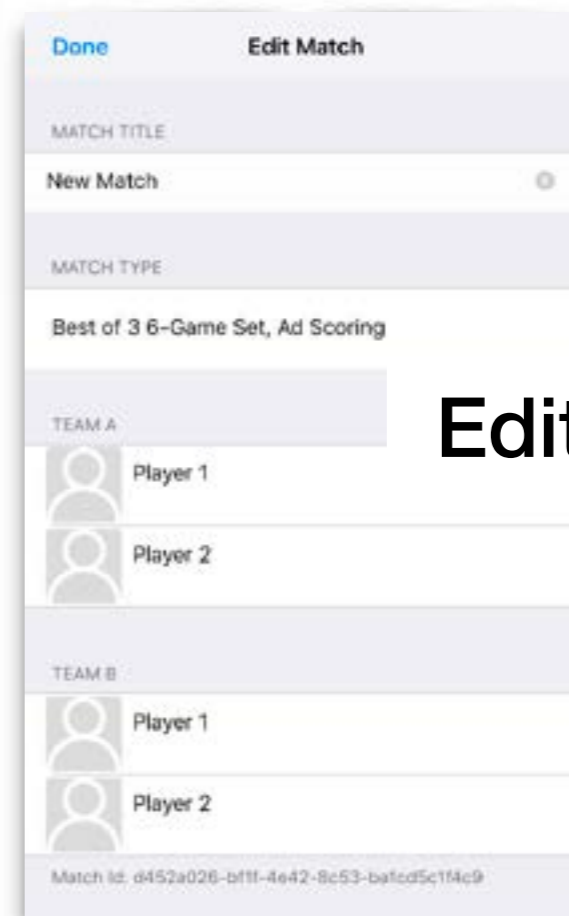
Once you have logged in, you can create a new MATCH by selecting the [+] icon in the MATCH List Screen.

In the Edit MATCH Screen, select the following to complete the process:

- Singles or Doubles
- MATCH Title
- MATCH Type
- Select PLAYERS (see Player Account)



MATCH List



Edit MATCH

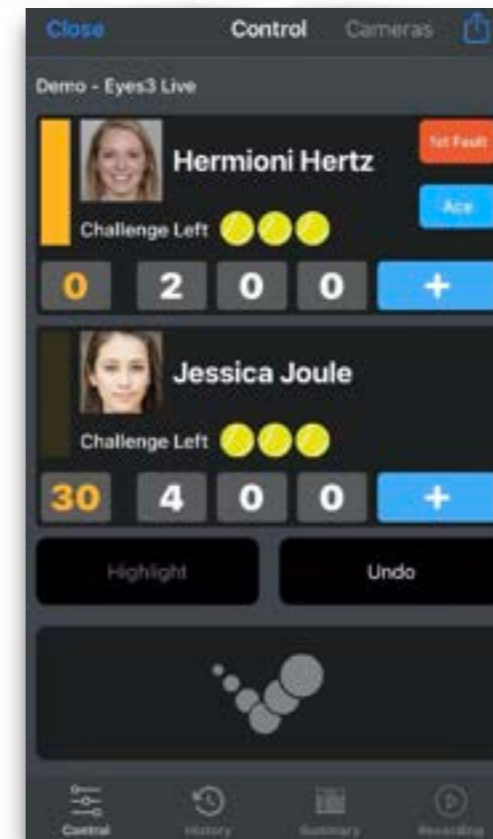
Monitor all aspects of the operation of eyes<sup>3</sup> APP

## 1. MATCH Control

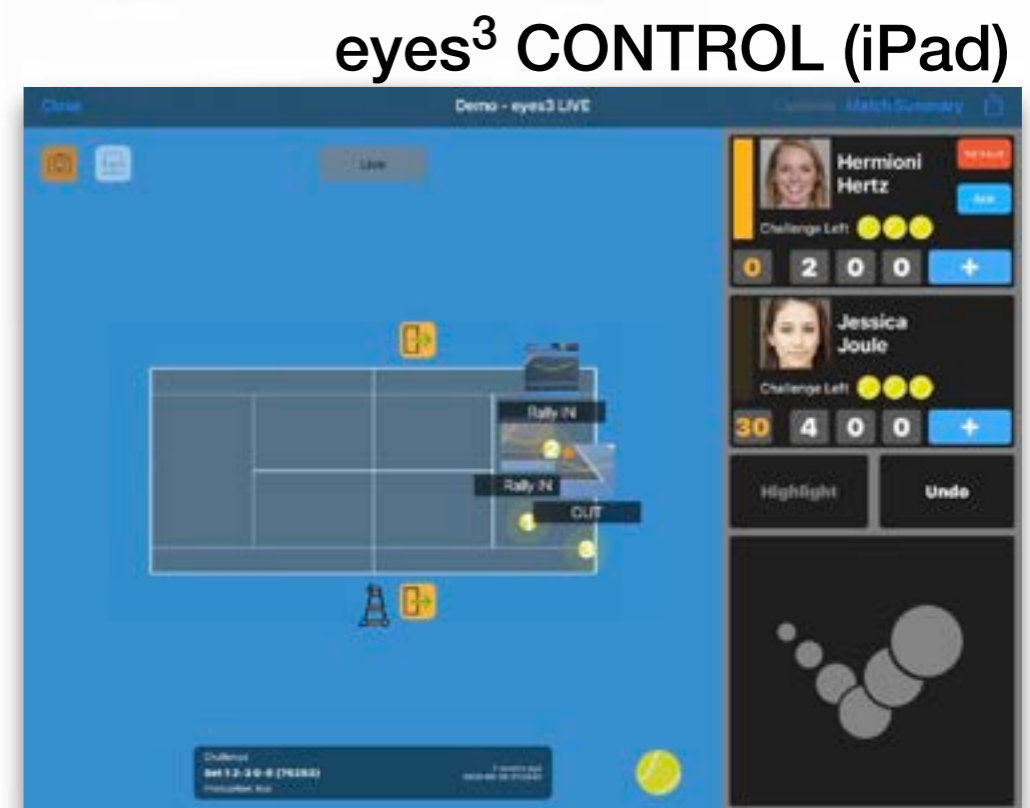
- 1.1. Live Score-keeping
- 1.2. Initiate CHALLENGE
- 1.3. Review CHALLENGE Results
- 1.4. Tag Shots for ANALYTICS

## 2. Monitor CAMERA Group and Status

- 2.1. Assign CAMERA Group to MATCH  
(see Assign eyes<sup>3</sup> CAMERA Group)
- 2.2. Monitor CAMERA Group Status
- 2.3. Check CAMERA Status



eyes<sup>3</sup> CONTROL (iPhone)



eyes<sup>3</sup> CONTROL (iPad)

## MATCH Control

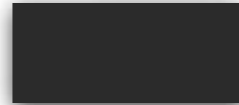


### 1. Live Score-keeping

1.1.ADD Score (by Point or Game)



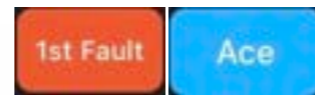
1.2.UNDO previous ADD Score



1.3.CHANGE Order of Serve



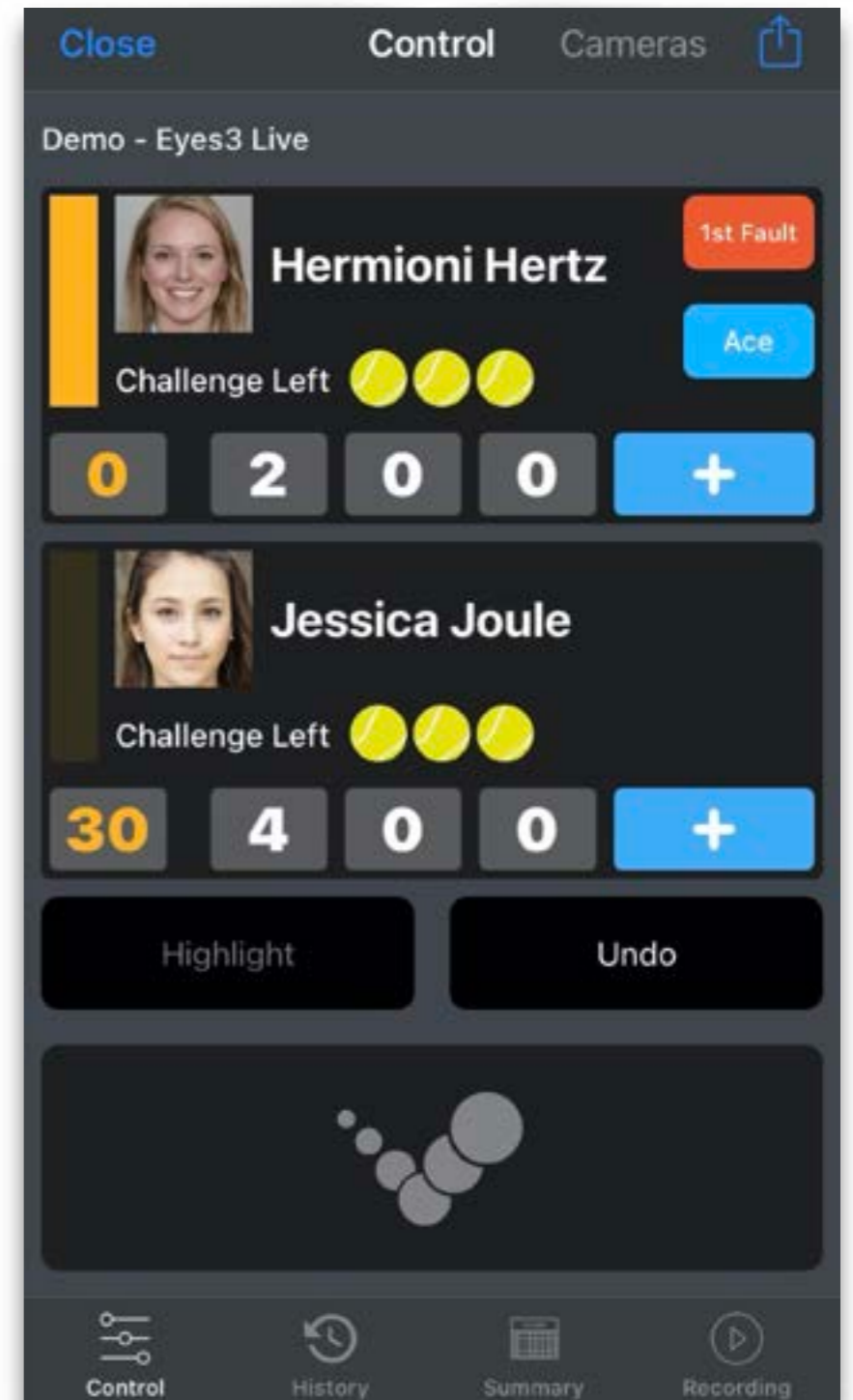
1.4.TAG Shots for Analytics



### 2. Initiate CHALLENGE

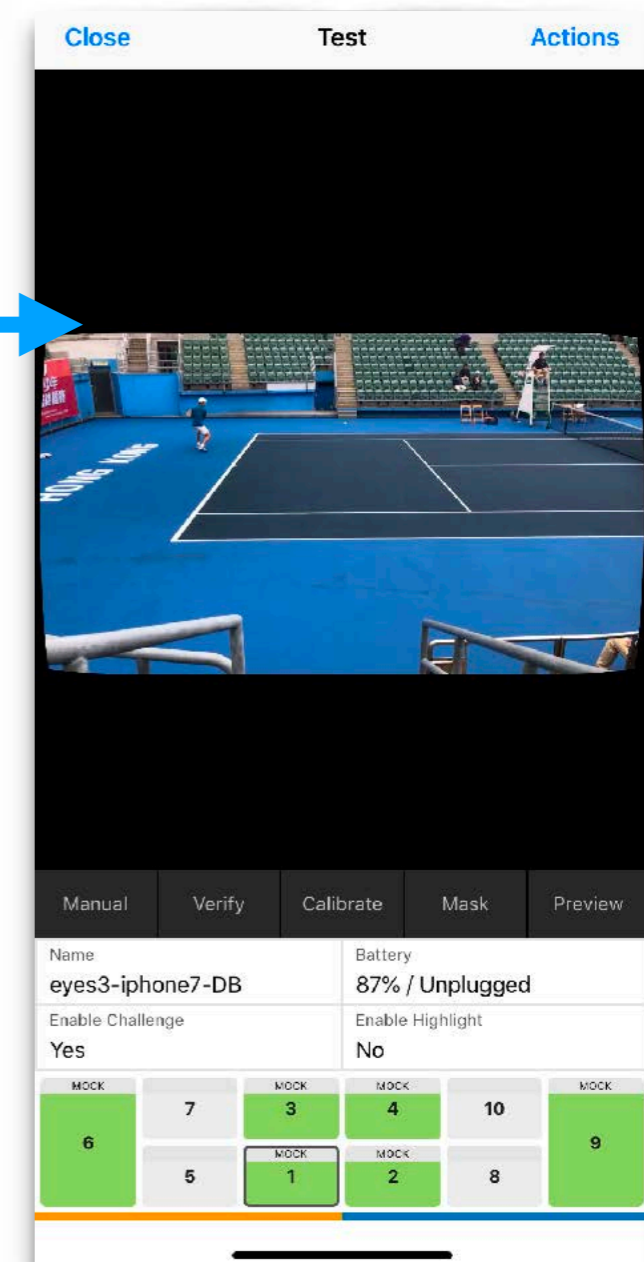
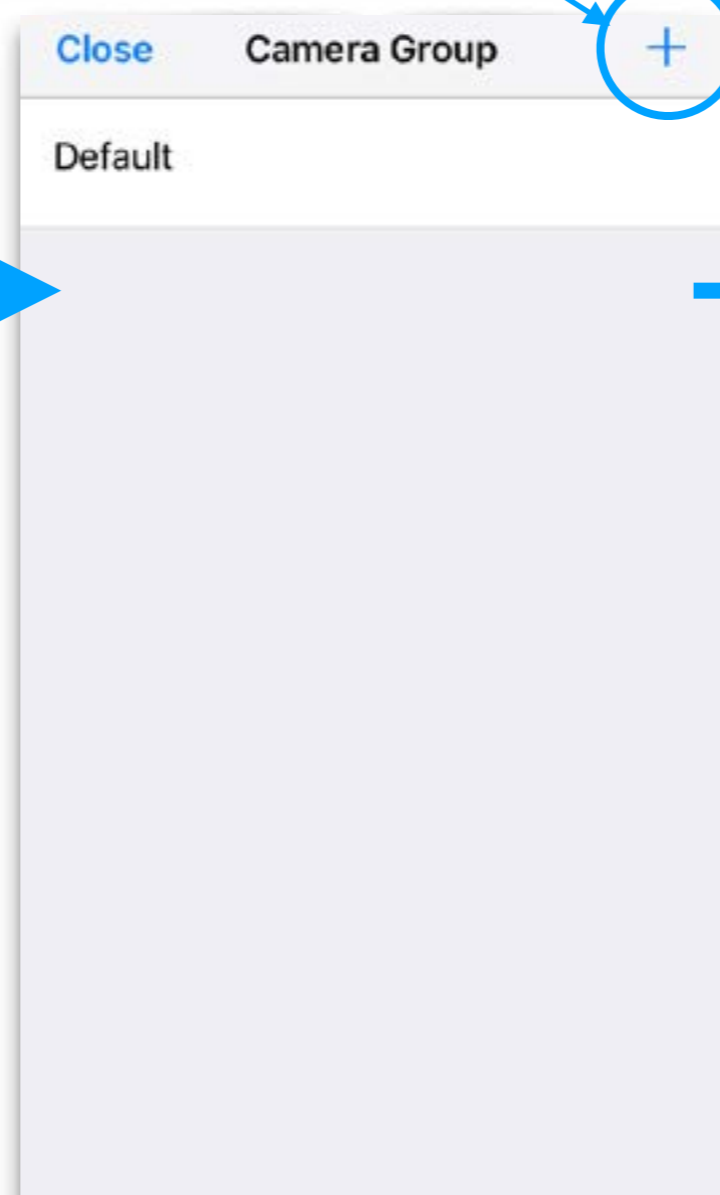
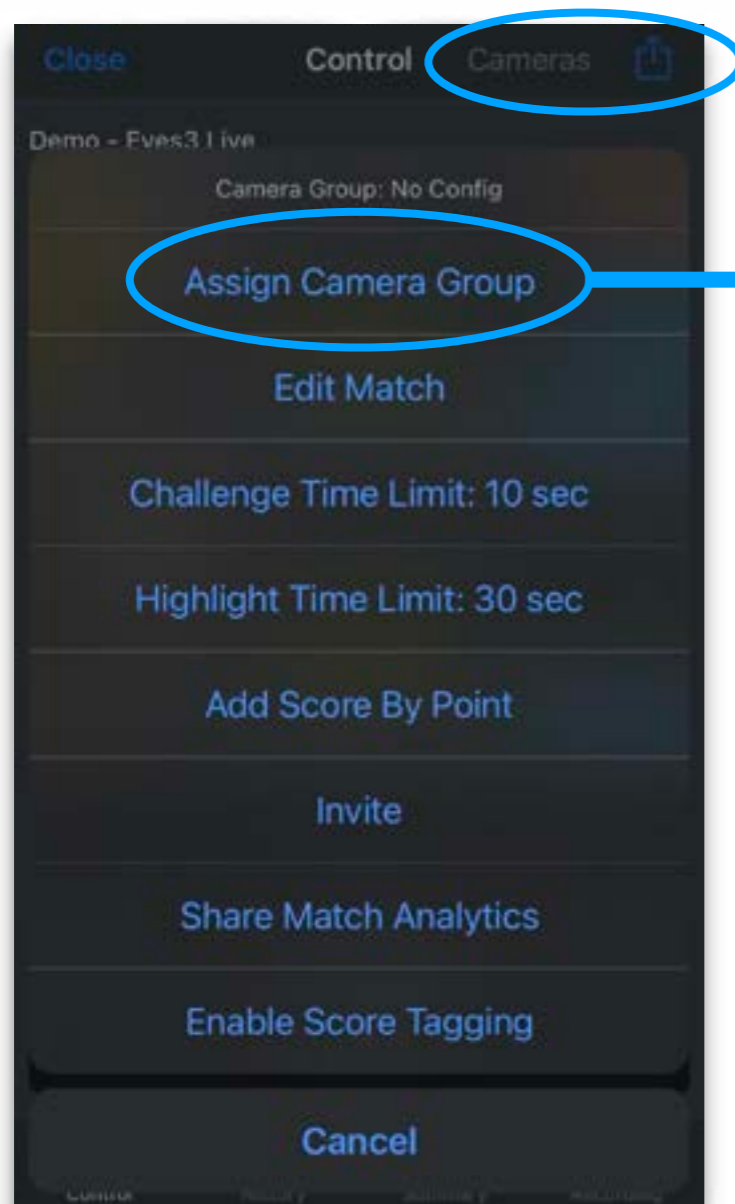


### 3. Review CHALLENGE Results



## Monitor CAMERA Group and Status

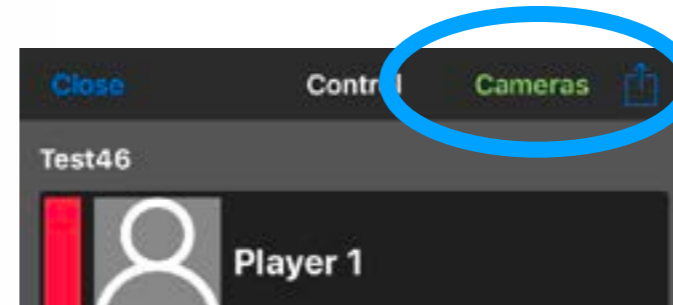
1. Assign CAMERA Group to MATCH (see Assign CAMERA Group)
2. Select [ + ] to create new CAMERA Group (if required)



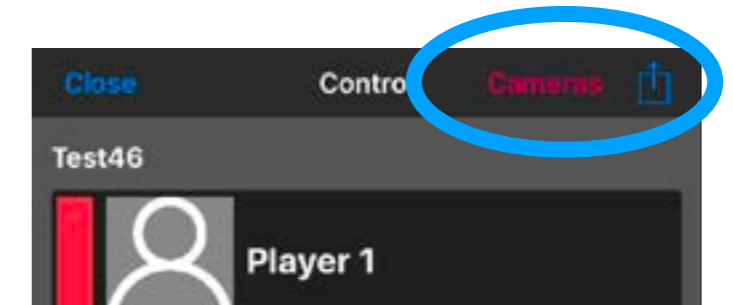
## Monitor CAMERA Group and Status

### 1. Monitor CAMERA Group Status

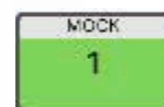
Manual	Verify	Calibrate	Mask	Preview
Name eyes3-iphone7-DB		Battery 87% / Unplugged		
Enable Challenge Yes		Enable Highlight No		
MOCK 6	7	MOCK 3	MOCK 4	10
	5	MOCK 1	MOCK 2	8
				9



**GREEN**  
All Attached CAMERAs  
On-line and Recording

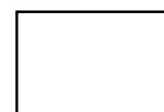


**RED**  
One or More CAMERAs  
Off-line or NOT Recording

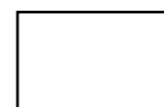


GREEN = CAMERA On-line and Recording

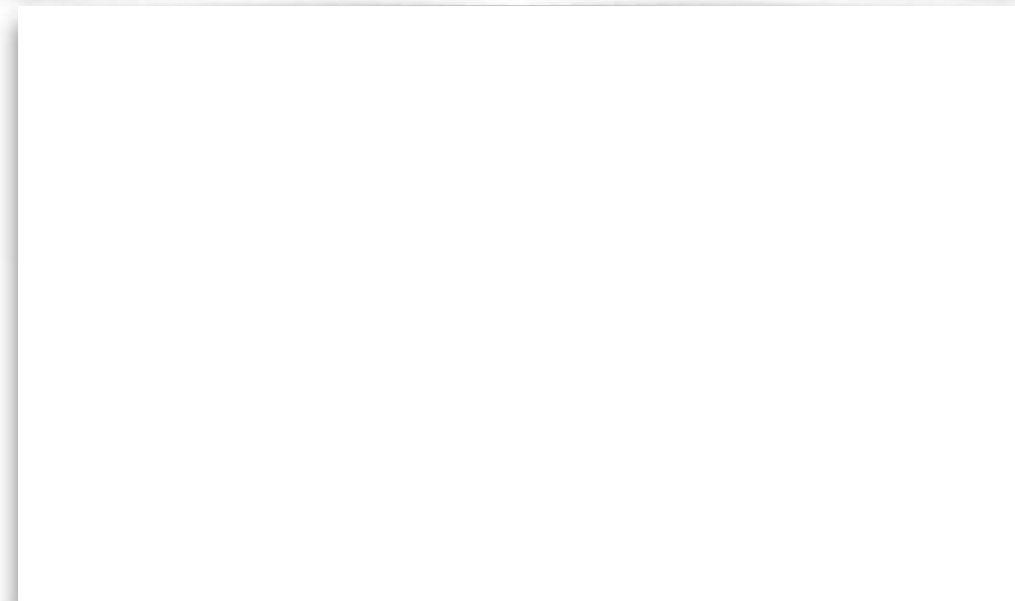
RED = CAMERA On-line but NOT Recording



BLUE = CAMERA Off-line

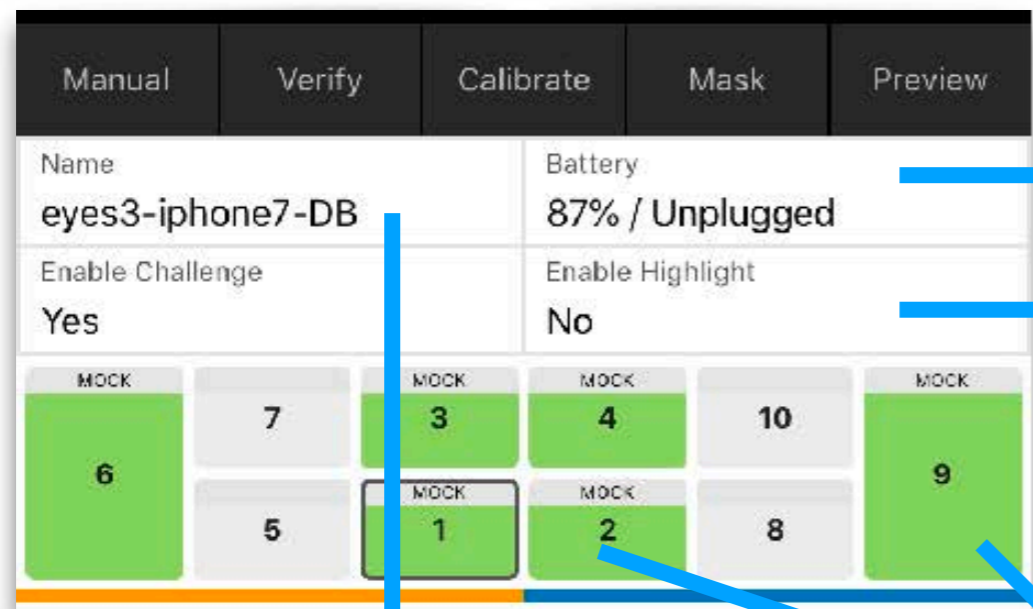


GREY = No CAMERA Attached



## Monitor CAMERA Group and Status

### 2. Check CAMERA Status



The screenshot shows a control panel with tabs: Manual, Verify, Calibrate, Mask, and Preview. Below the tabs are two rows of controls:

Name eyes3-iphone7-DB	Battery 87% / Unplugged
Enable Challenge Yes	Enable Highlight No

Below these are ten numbered buttons (1-10) arranged in two rows. Buttons 1, 2, 3, 4, 6, 7, 8, 9, and 10 are green, while buttons 5 and 10 are grey. A blue arrow points from the 'CAMERA Name' label to the 'eyes3-iphone7-DB' text. Another blue arrow points from the 'Select CAMERA to Check Status' label to the grid of buttons. Two blue arrows point from the 'BATTERY Status' and 'FEATURE Enabled/Disabled' labels to the '87% / Unplugged' and 'No' text respectively.

**BATTERY Status**

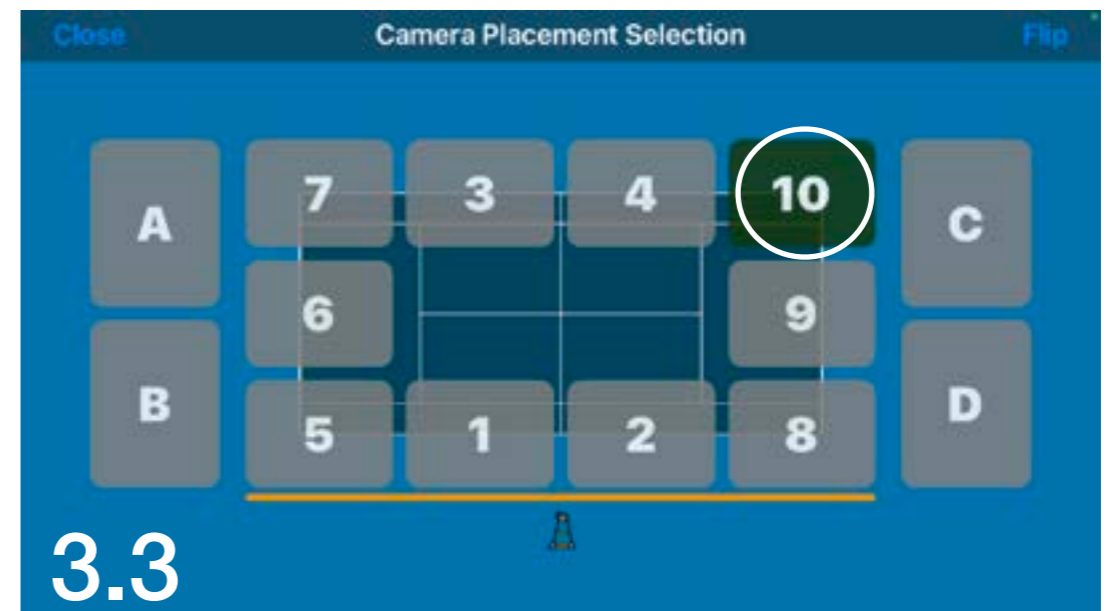
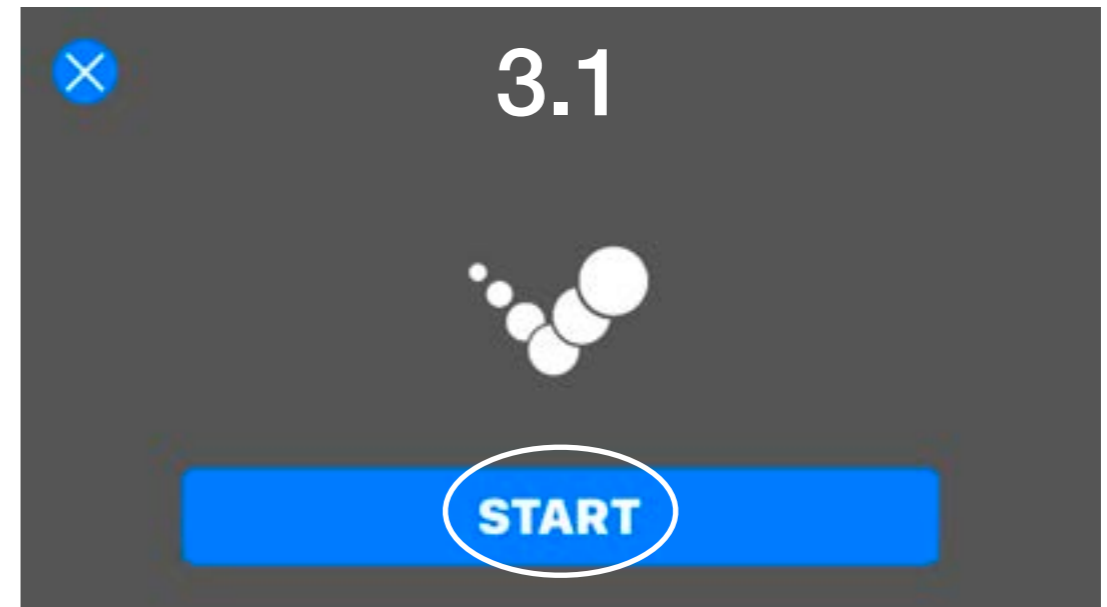
**FEATURE Enabled/Disabled**

**CAMERA Name**

**Select CAMERA to Check Status**

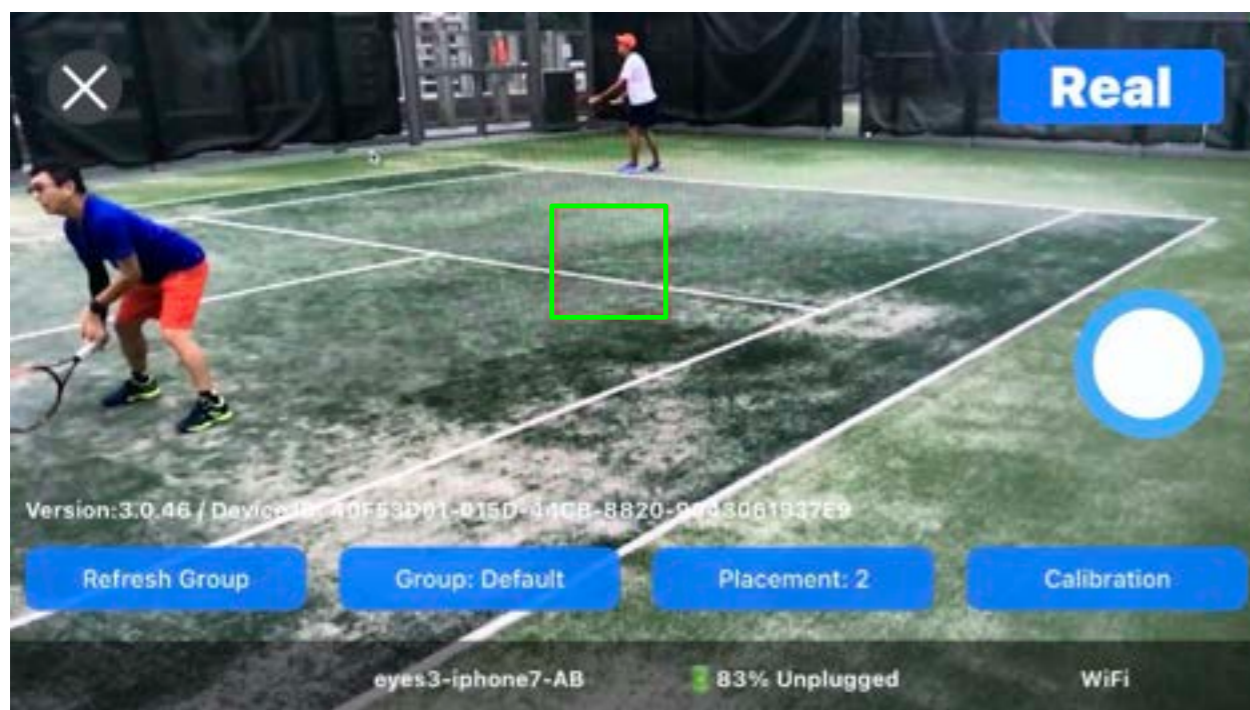


1. Physically place Recording Devices around the Court (see Physical Setup)
2. Create new CAMERA Group via MATCH Control (as required)
3. Assign “CAMERA Group”
  - 3.1. START Recording
  - 3.2. Assign GROUP; e.g. {Default}
  - 3.3. Identify the Recording Device’s CAMERA Placement; e.g. {10}



For best results, ensure that the recording image is correctly focused.

Touch the area to lock the camera focus (indicated by a green square). The square changes colour to red when focus lock is achieved.



Focusing

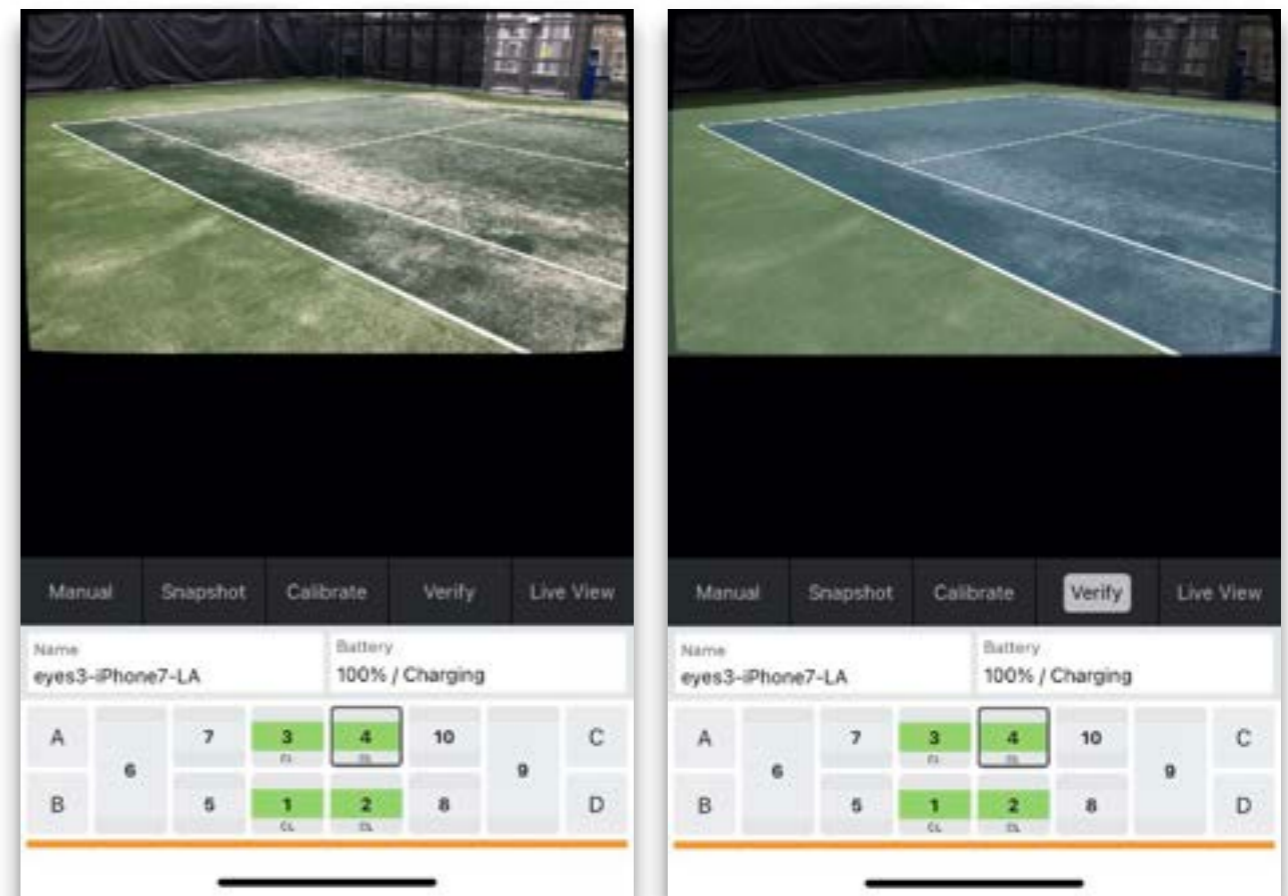


Focus Locked

CALIBRATION is an eyes<sup>3</sup> operational function where the system configures the Court lines, and must be performed before the start of every MATCH, and the CALIBRATION Status should be checked regularly to ensure there are no 'out-of-CALIBRATION' situations.

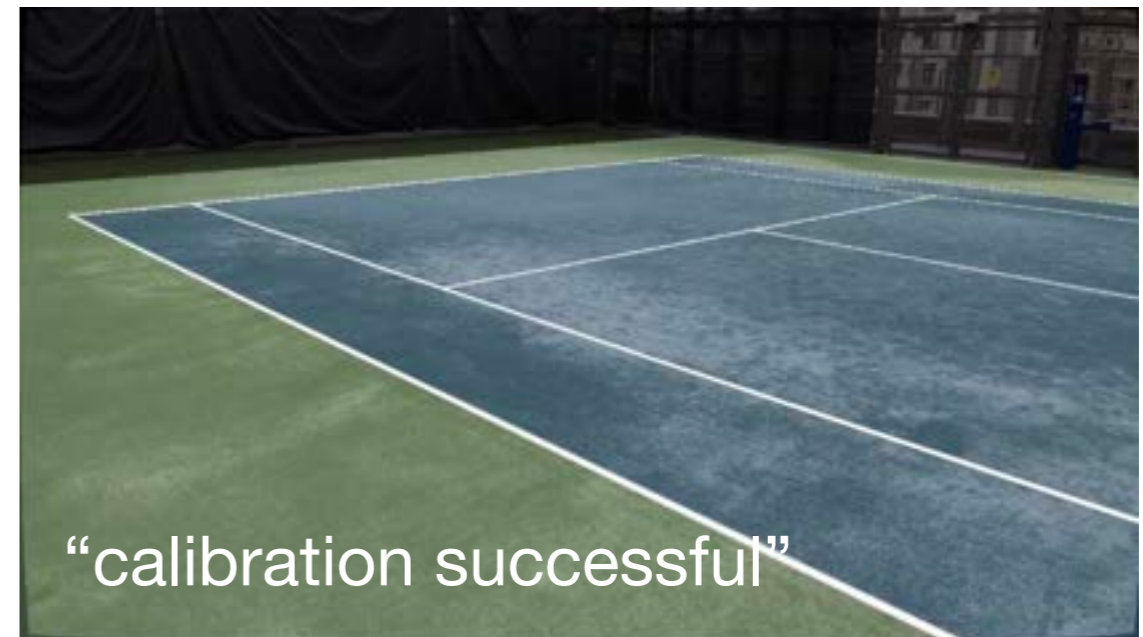
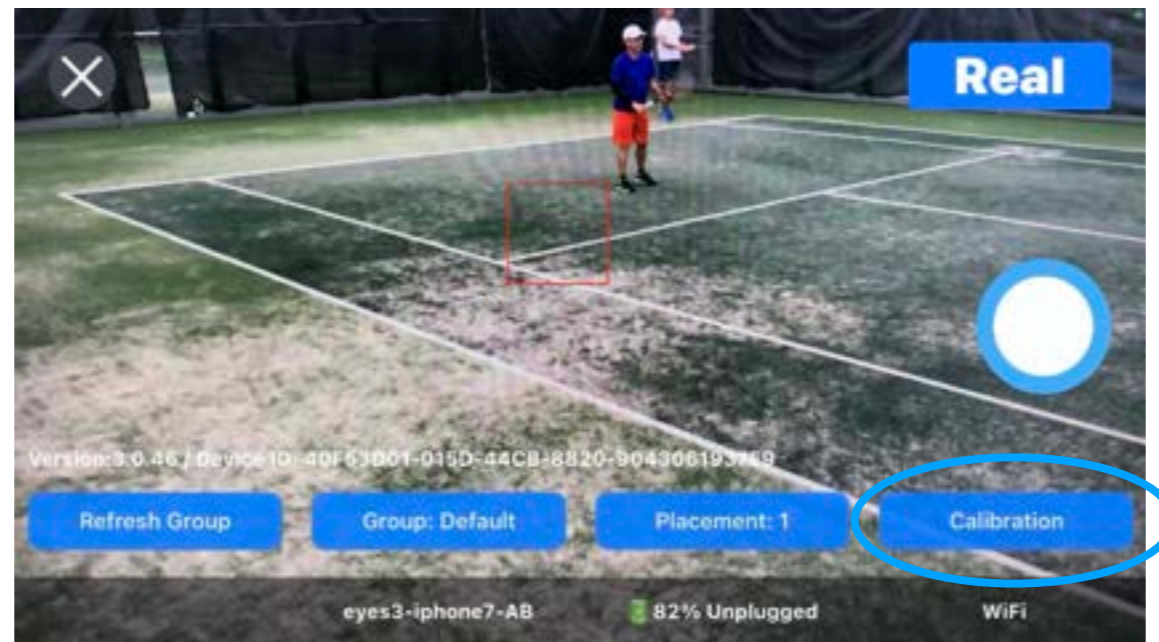
The different CALIBRATION actions are:

- a. CALIBRATION (Local)
- b. CALIBRATION (Remote)
- c. CALIBRATION (Global)
- d. CALIBRATION (Verify)
- e. CALIBRATION (Snapshot)
- f. CALIBRATION (Manual)



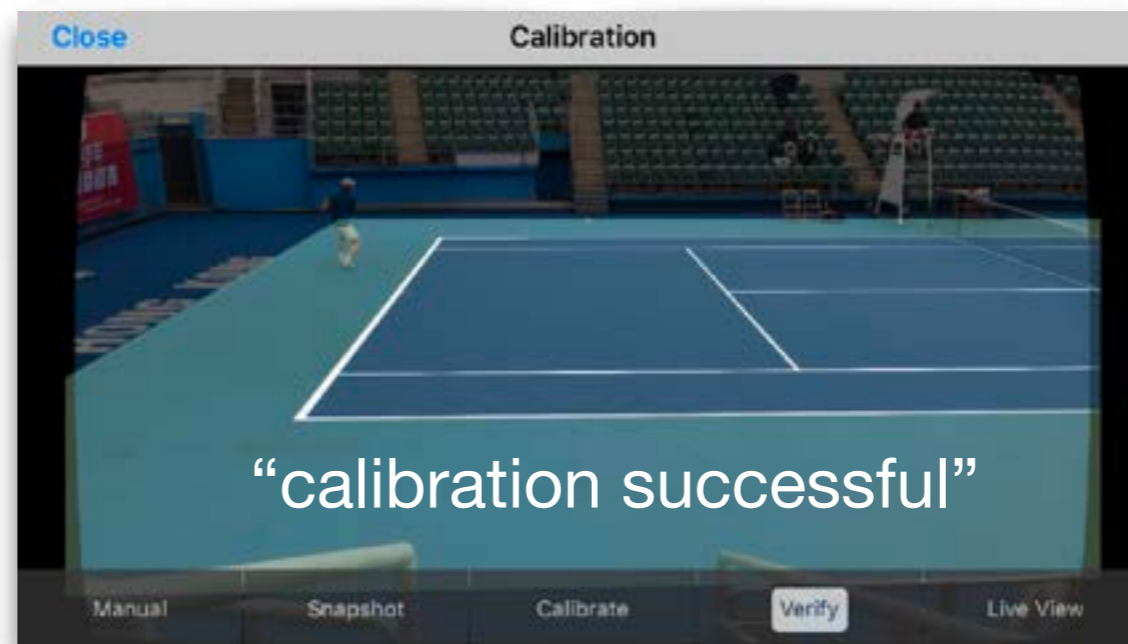
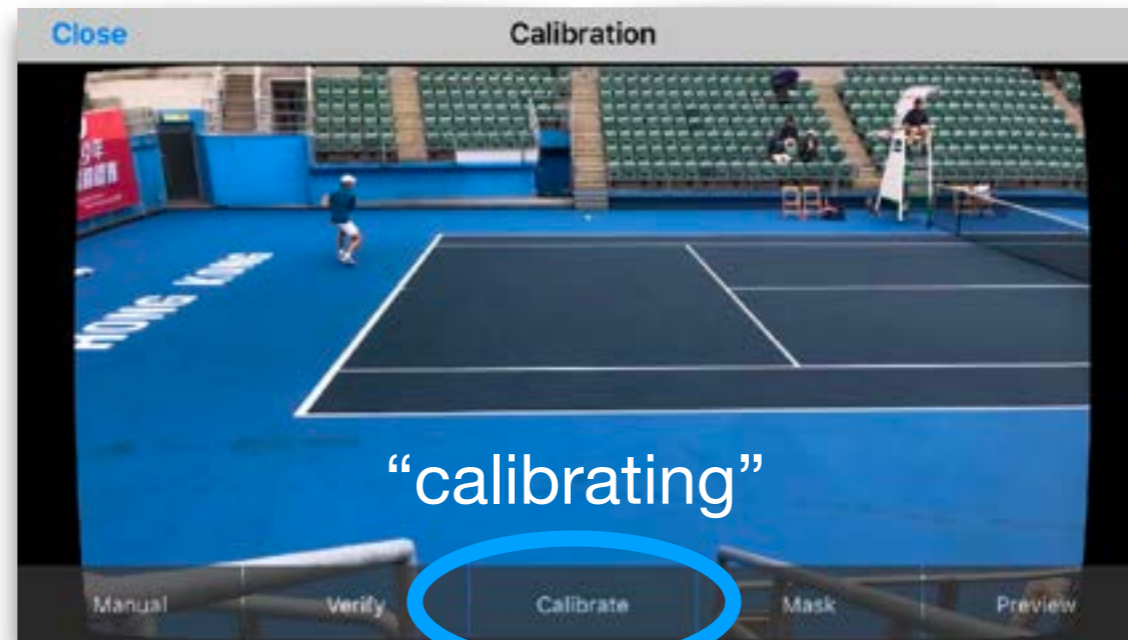
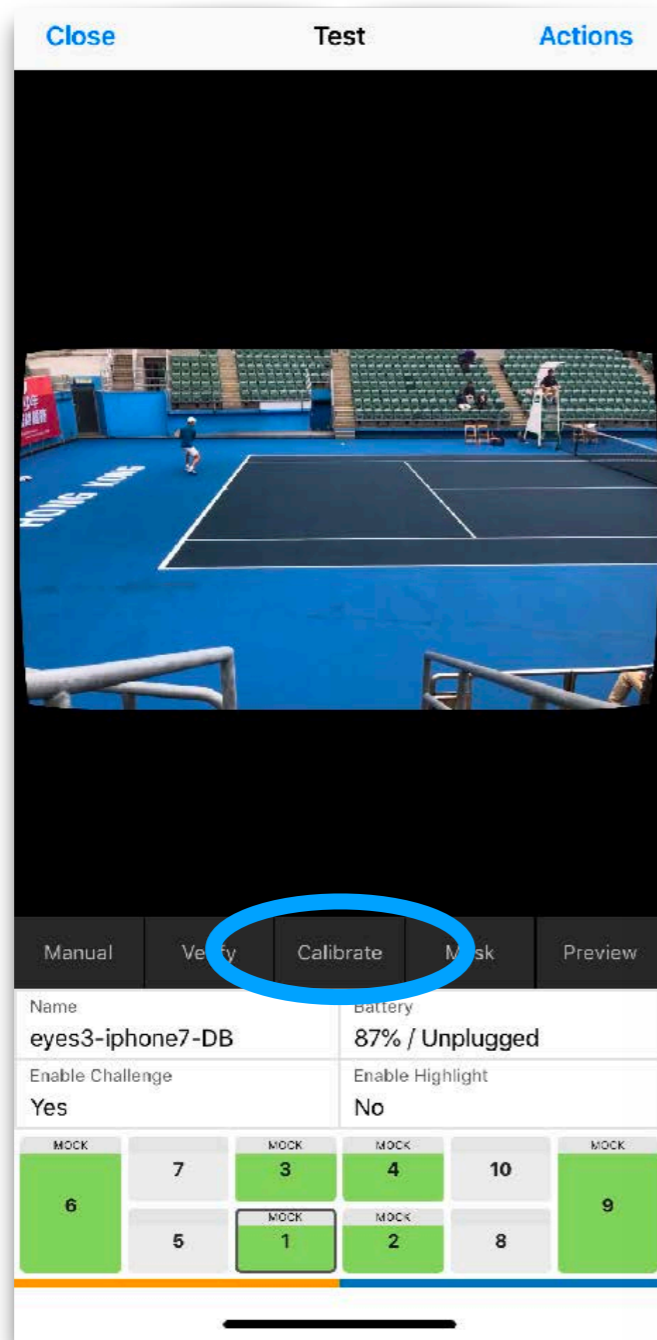
a. CALIBRATION (Local)

CALIBRATION can be performed directly on the Recording Device when it is properly placed and in RECORDING mode



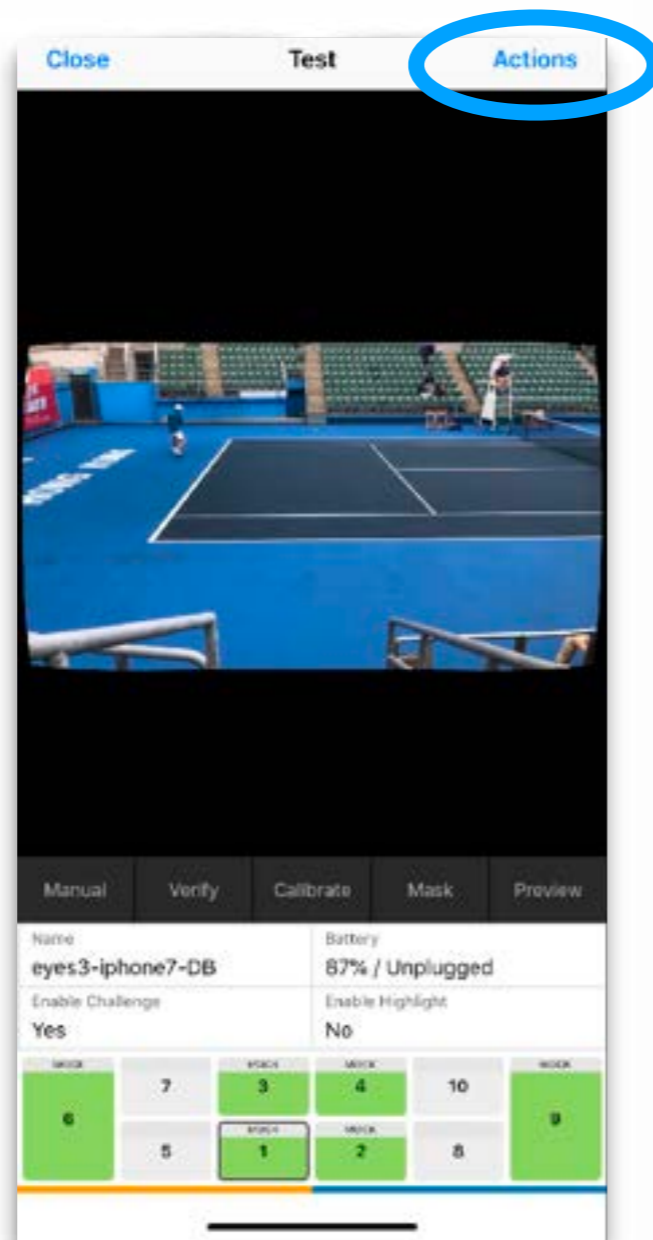
## b. CALIBRATION (Remote)

CALIBRATION can be performed remotely from eyes<sup>3</sup> CONTROL



c. CALIBRATION (Global)

CALIBRATION can be performed simultaneously on **all** Recording Devices from eyes<sup>3</sup> CONTROL



#### d. CALIBRATION (Verify)

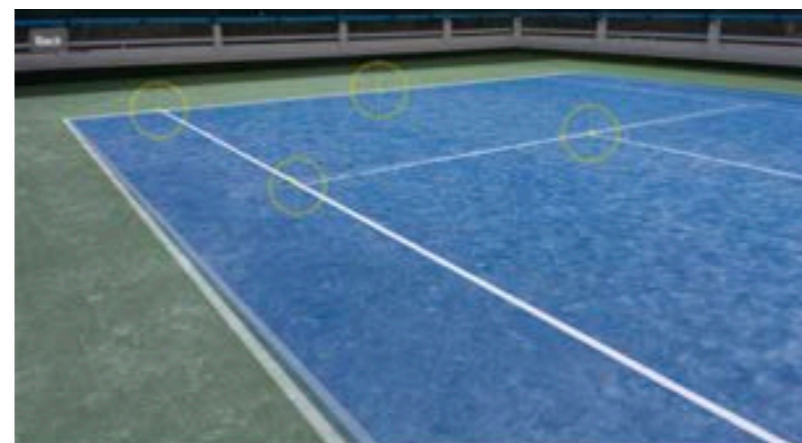
CALIBRATION (Verify) is a function to allow a visual confirmation that the CALIBRATION Status of each Recording Device is calibrated properly.

The function works by displaying virtual Court lines overlaid on the actual Court lines for a visual confirmation of proper CALIBRATION

- if the virtual Court lines are directly aligned with the actual Court lines, then the CALIBRATION is proper
- if the virtual Court lines are not aligned with the actual Court lines, then there is an 'out-of-CALIBRATION' situation



CALIBRATED properly



out-of-CALIBRATION

## e. CALIBRATION (Snapshot)

When checking CALIBRATION Status on a regular basis, you should perform the CALIBRATION (Snapshot) function prior to running the CALIBRATION (Verify) function.

The Snapshot function returns the most up-to-date image of the actual Court lines for the VERIFY Court lines alignment check.

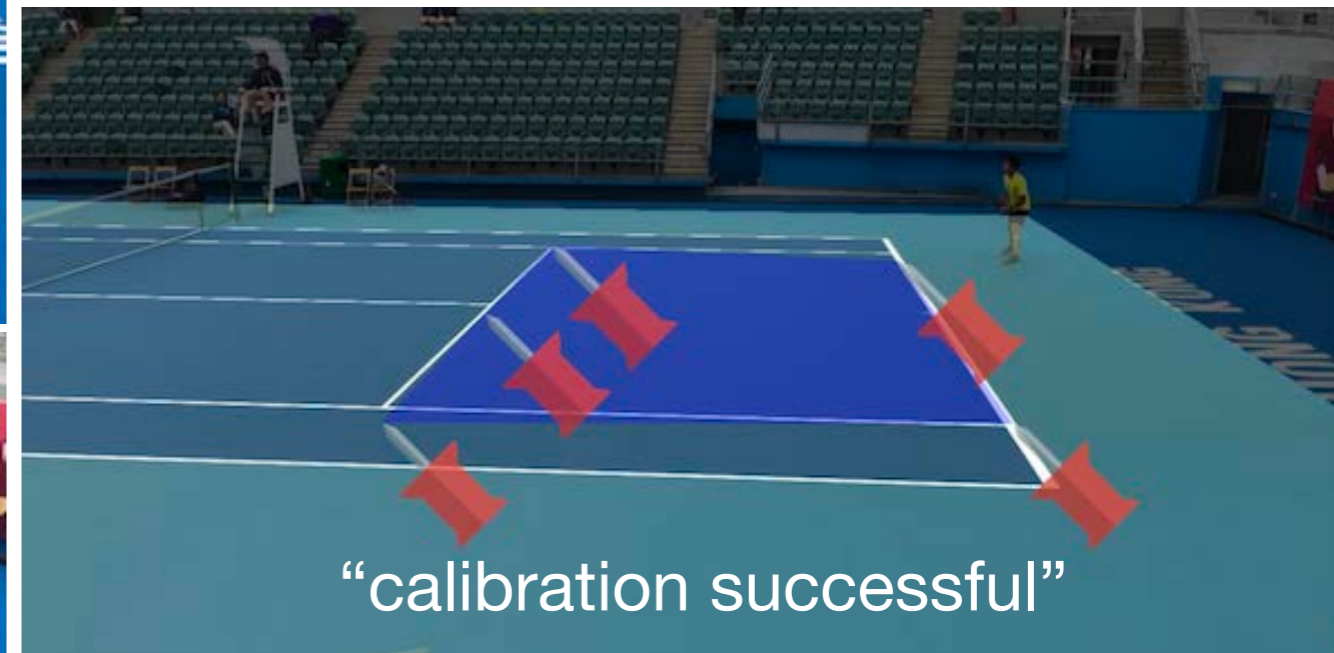
**The SNAPSHOT function is a quick method to check calibration to highlight whether a re-CALIBRATION is necessary**

*{TIP} the CALIBRATION (Snapshot) function can also be performed globally through the [Action] button. See CALIBRATION (Global)*



## f. CALIBRATION (Manual)

In situations where the automatic CALIBRATION function is unable to configure for Court lines, the CALIBRATION has to be performed manually.

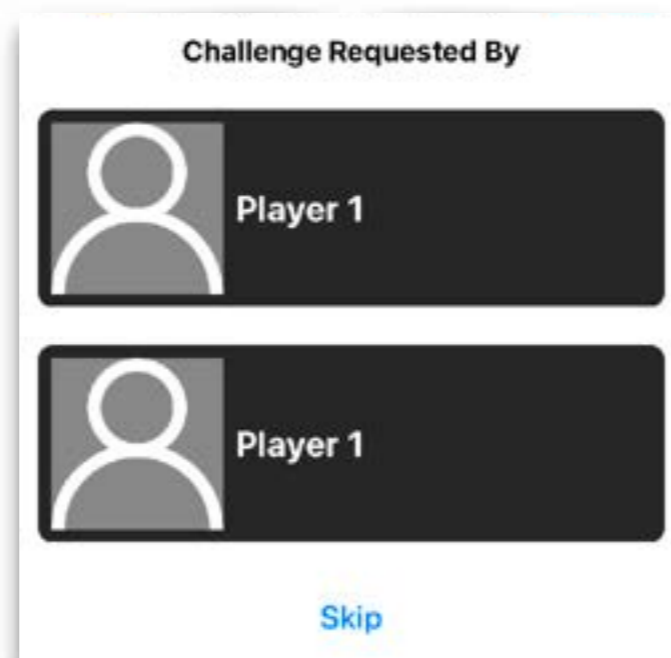


CHALLENGE

*When the CHALLENGE function is initiated, the system will process ball impacts over the immediate previous 10 seconds\* and return the CHALLENGE Results for review (see Review CHALLENGE Results)*

*\* the Player is required to make her CHALLENGE “in a timely manner”*

{OPTIONAL}  
Identify PLAYER who  
initiated CHALLENGE



*Identifying the Player making the CHALLENGE allows the system to keep a record of how many CHALLENGES she has remaining*

## Select **RELEVANT** Ball Impact

- The system will display ball impacts detected in the duration captured by the CHALLENGE function; there may be multiple ball impacts detected in that duration
- The Reviewer/Player must identify/select the **correct** ball impact for the IN/OUT decision => the **RELEVANT** Ball Impact

The interface displays a tennis court with three ball impacts labeled 1, 2, and 3. Impact 3 is circled in blue and labeled "RELEVANT Ball Impact". Three arrows point from impact 3 to three zoomed-in views of the impact data. The bottom-right zoomed view is highlighted with a blue border and a black box containing the word "OUT".

**RELEVANT Ball Impact**

**OUT**

## No **RELEVANT** Ball Impact Scenario

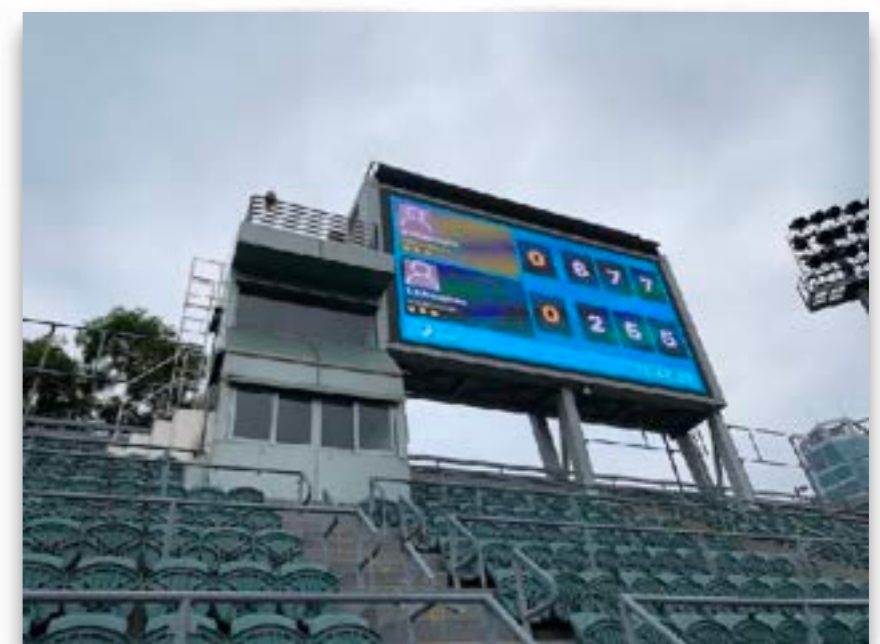
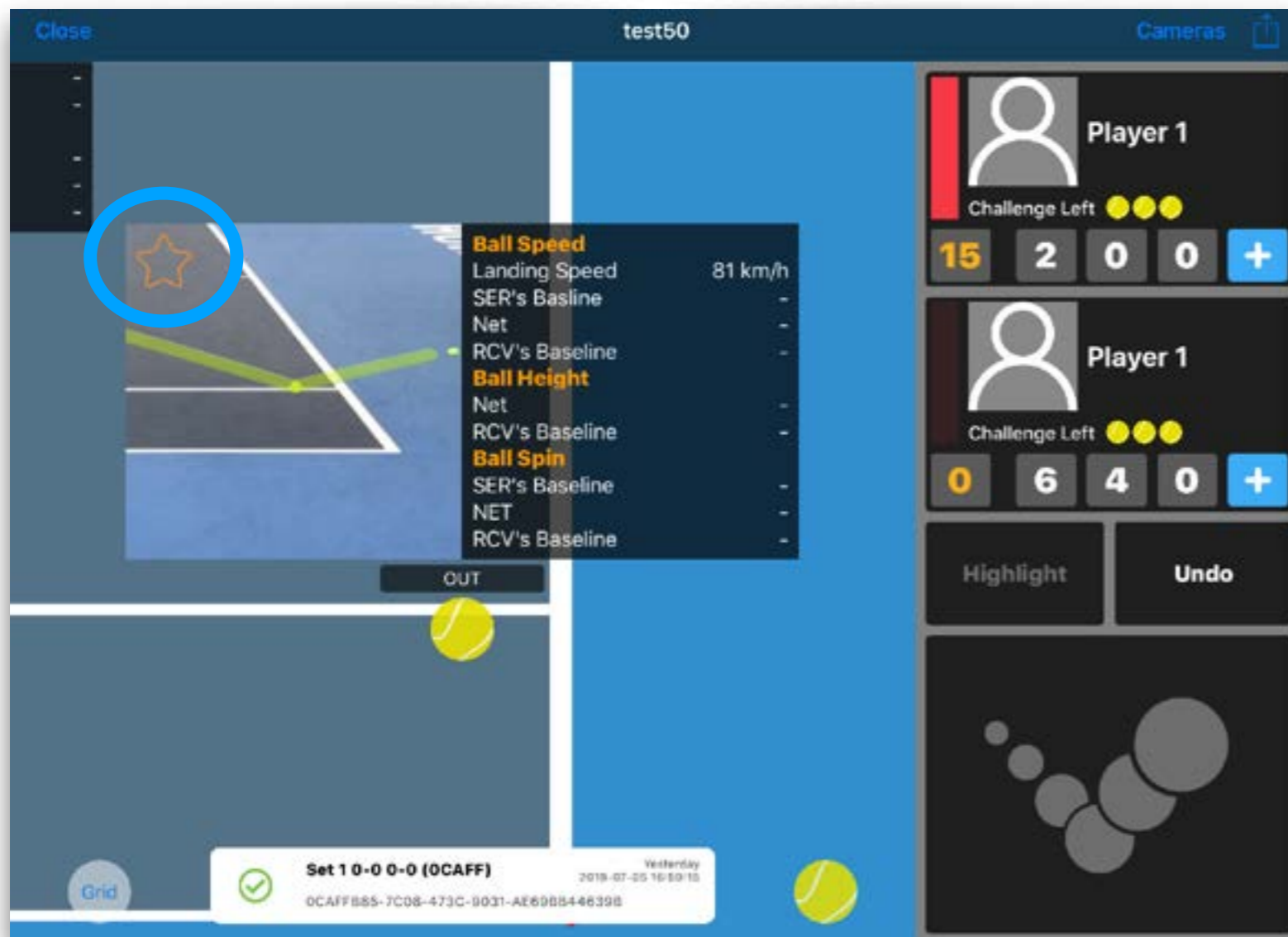
There are instances where the none of the ball impacts detected is the **RELEVANT** Ball Impact. Such scenarios can be due to:

- The **CHALLENGE** was not initiated timely (e.g. initiated more than 10 seconds after the **RELEVANT** ball impact instance)
- The view of the Relevant Ball Impact was occluded by a Player
- The system failed to detect the **RELEVANT** Ball Impact

***In such No **RELEVANT** Ball Impact Scenario,  
the conventional rule is to allow  
the original line-call to stand***

## Select **RELEVANT** Ball Impact

Once the **RELEVANT** Ball Impact is identified, select this ball impact by pressing the 'star' button. This will send the **CHALLENGE** Result to **eyes<sup>3</sup> SCOREBOARD** - Presentation mode (if available)



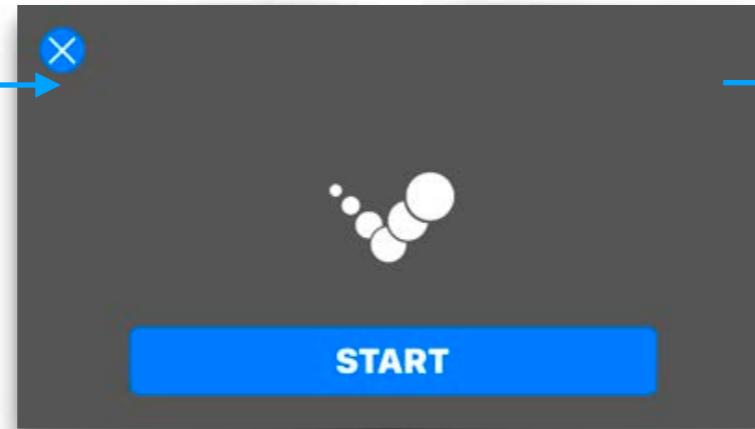
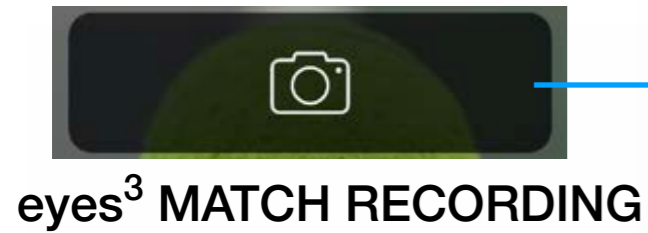
## Review CHALLENGE History



In eyes<sup>3</sup> Match Control mode, Click on **Live** to always display the Most Recent CHALLENGE Result.

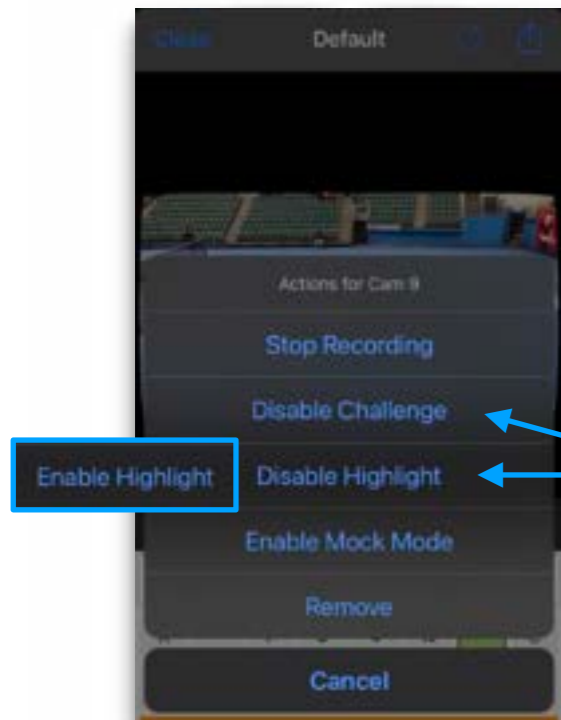
To Review the CHALLENGE Results History, press this button





Select Camera Group

Select Camera Placement



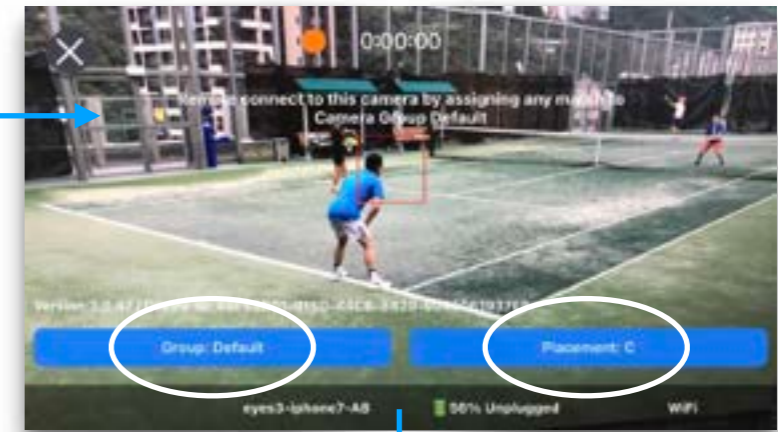
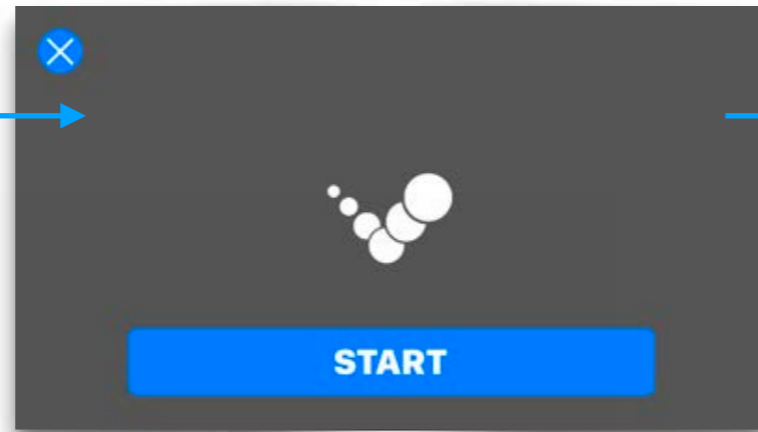
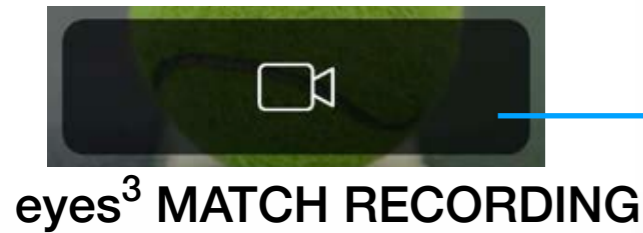
Long press on selected CAMERA for Action Menu

Manual	Snapshot	Calibrate	Verify	Live View		
Name eyes3-iphone7-AA		Battery 90% / Unplugged				
A	6	7	3	4	10	C
B	5	1	2	8	9	D
		CL	CL / HL		HL	

**Enable/Disable Challenge (CL) and Highlight (HL)**  
 CL = CAMERA operates for ELC Challenge only  
 HL = CAMERA operates for Highlights only  
 CL / HL = CAMERA operates for both ELC Challenge and Highlights

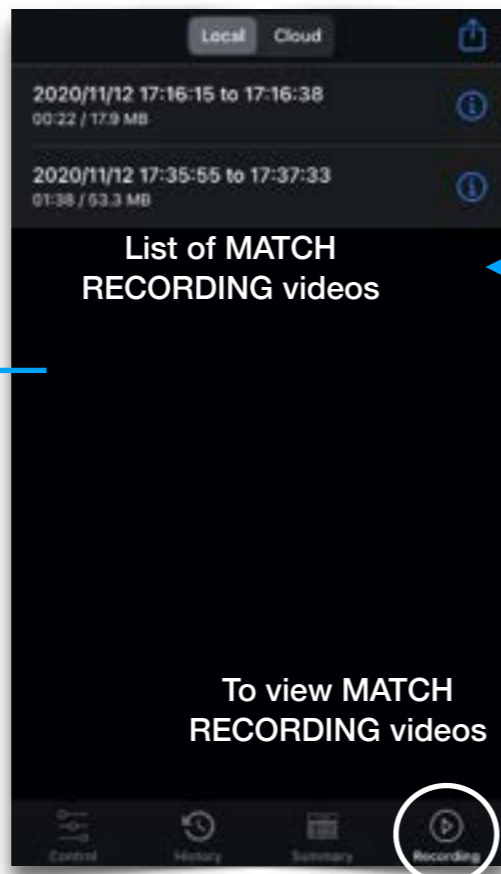
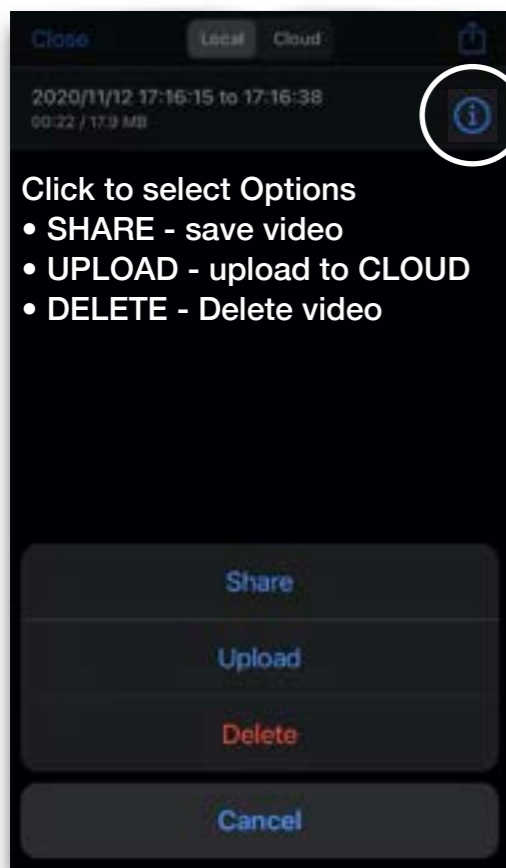


Typical HIGHLIGHT Camera Placement = 6 or 9  
 (although other positions can also be designated as HIGHLIGHT for multi-angle VAR)



Select Camera Group

Select Camera Placement



Assign CAMERA Group to a MATCH (see Assign eyes<sup>3</sup> CAMERA Group)

MATCH RECORDING starts the moment the CAMERA Group is assigned to a MATCH

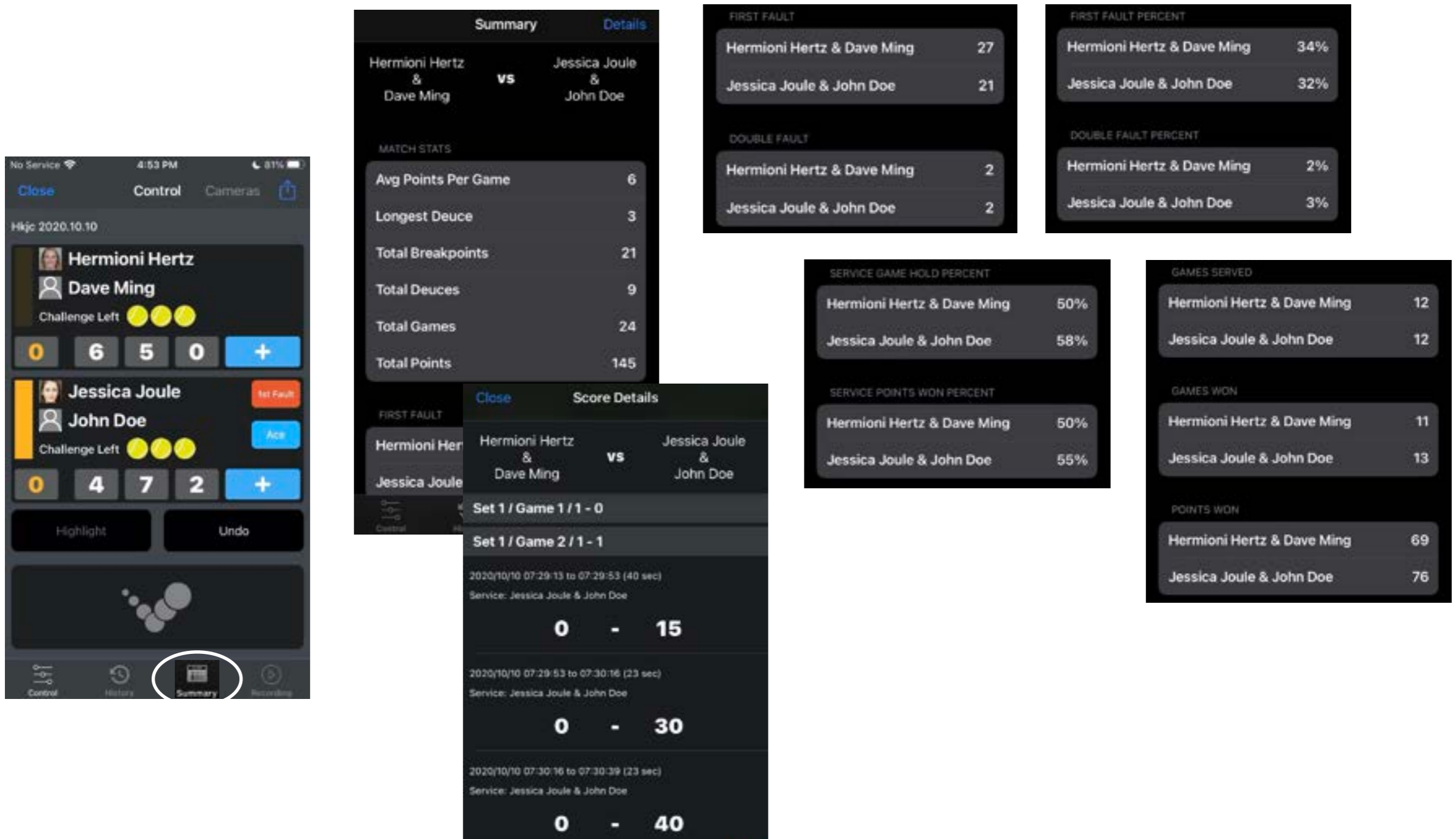


Select Camera Placement A or B or C or D

**MATCH RECORDING** videos are in 15 minute video files  
While the MATCH RECORDING function records continuously, the recorded videos are chaptered into 15 minute segments. This is a safety precaution in case one of the files is corrupted, in which case, only one 15 minute chapter is lost, instead of the entire match recording.



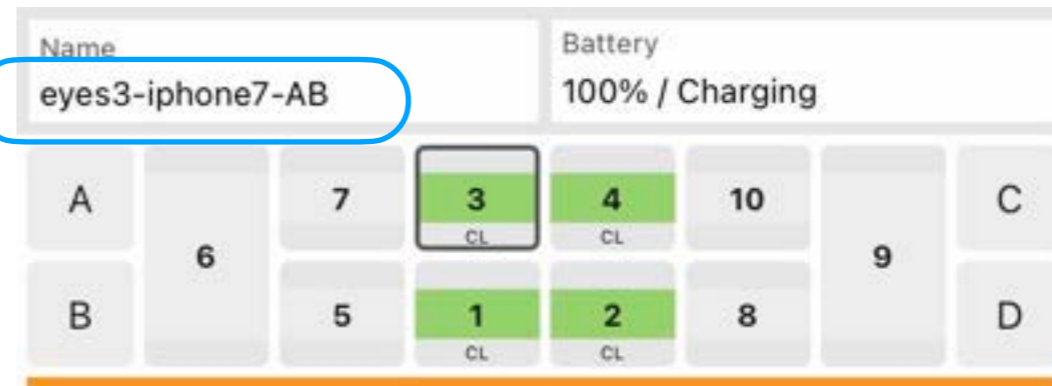
Match Statistics (including Score History) can be accessed via the **Summary** function.



If you encounter any issues, please contact your eyes<sup>3</sup> Certified Trainer for assistance.

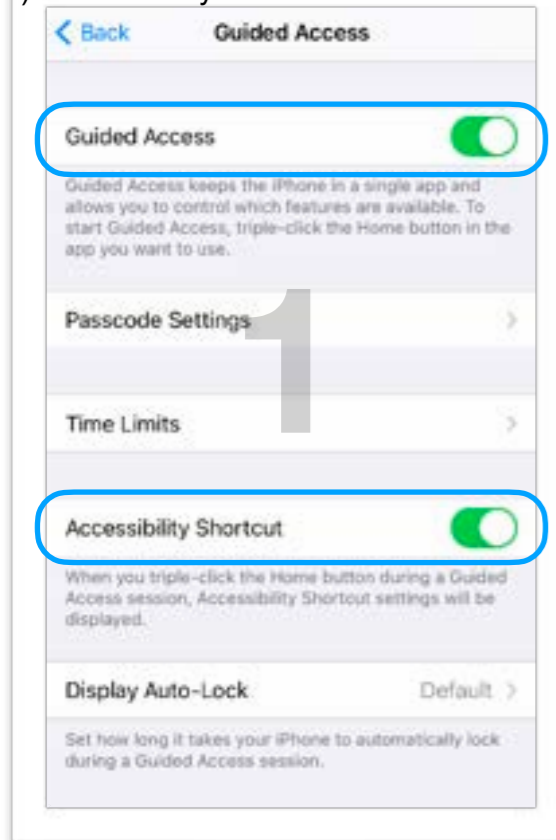
It is useful to identify the Recording Device/s that are placed around the Court.

{SETTINGS-GENERAL-ABOUT}  
Recording Device NAME (user define-able)

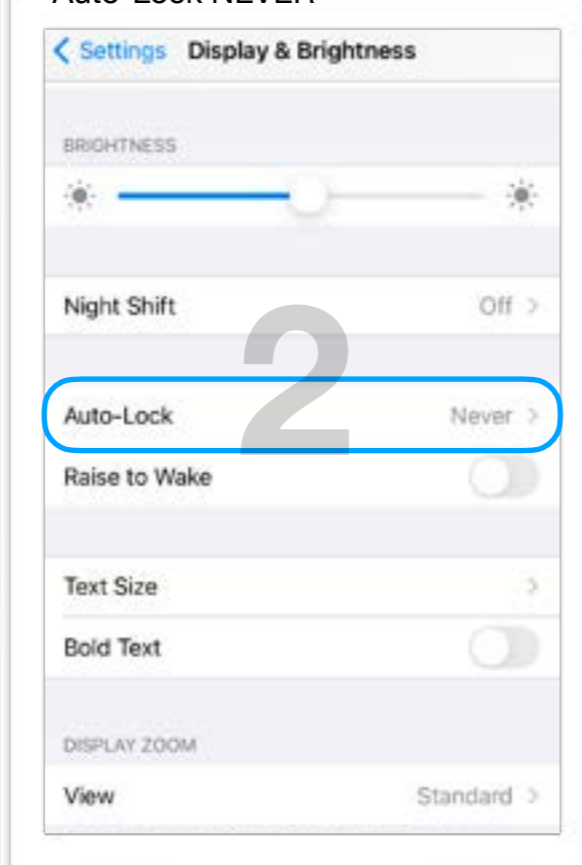


For operational efficiency, it is recommended that eyes<sup>3</sup> CAMERA auto re-start function is enabled. This function enables eyes<sup>3</sup> CAMERA to automatically re-start if necessary.

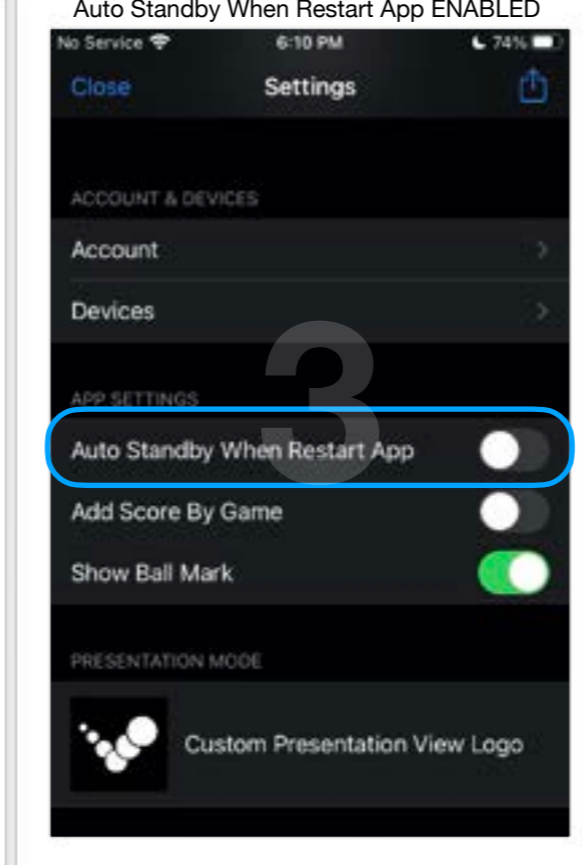
{SETTINGS-ACCESSIBILITY}  
 i) Guided Access ENABLED  
 ii) Accessibility Shortcut ENABLED



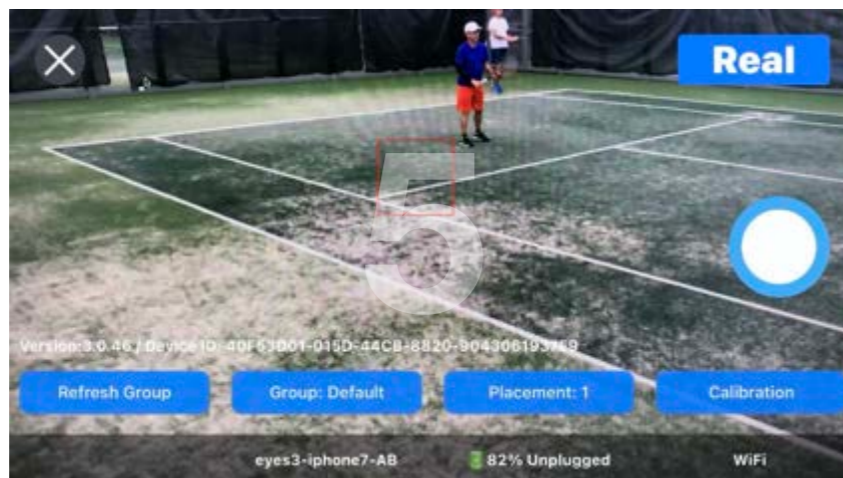
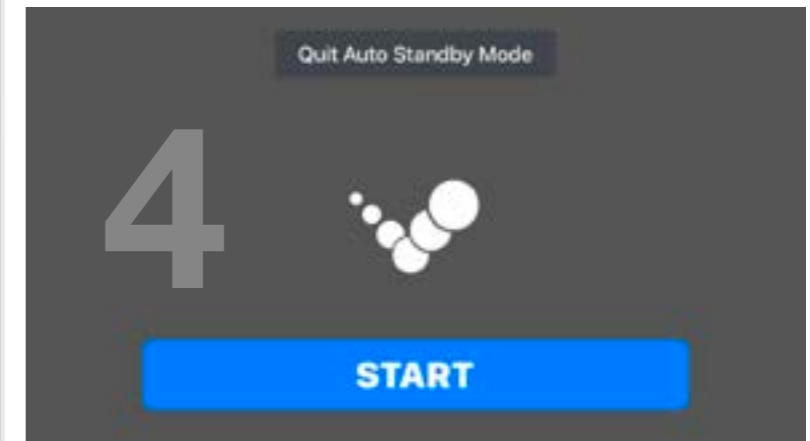
{SETTINGS-Display & Brightness}  
 Auto-Lock NEVER



{eyes<sup>3</sup> APP SETTINGS}  
 Auto Standby When Restart App ENABLED



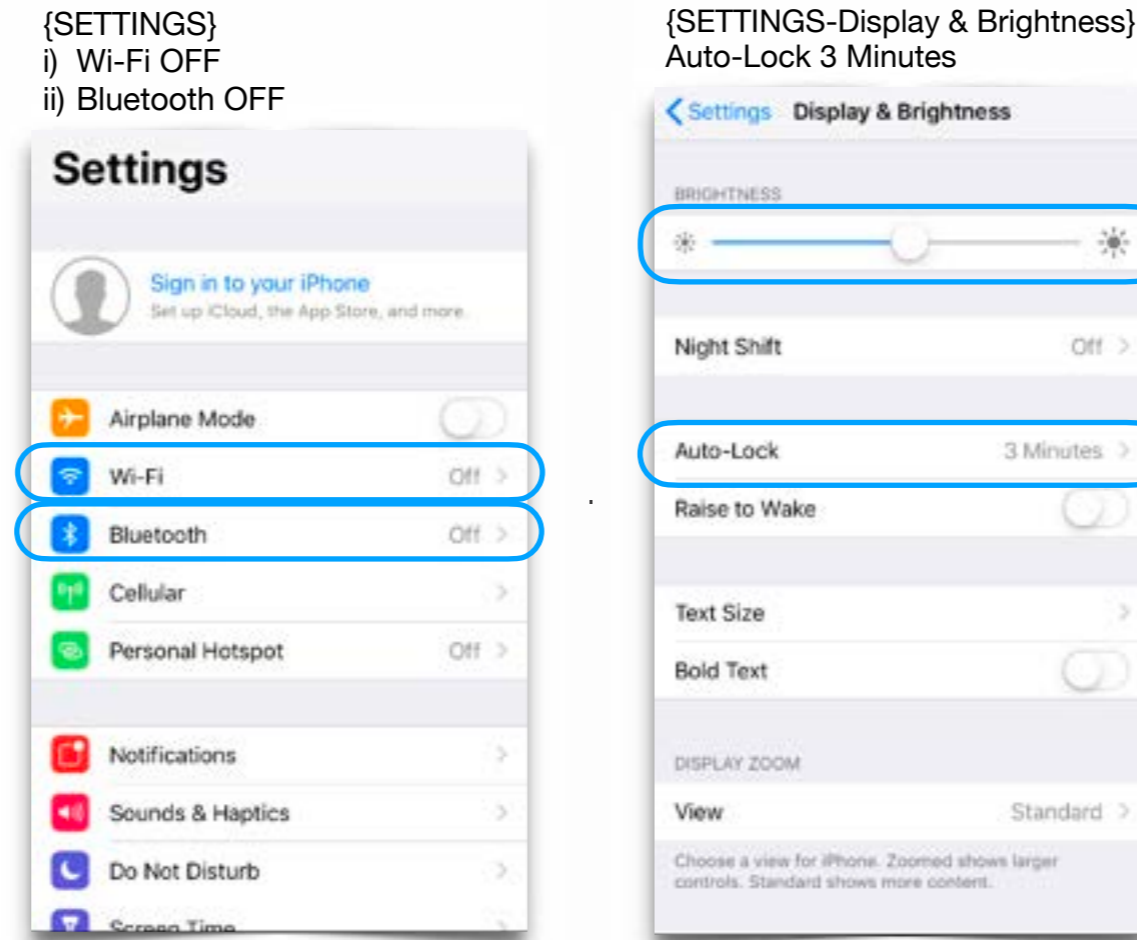
{eyes<sup>3</sup> APP CAMERA}  
 QUIT Auto Standby Mode



In eyes<sup>3</sup> CAMERA recording mode:

1. press the Recording Device's Home Button three (3) times to START 'Guided Access'
2. repeat press the Recording Device's Home Button three (3) times to STOP 'Guided Access' {you will need the Recording Device's PIN to proceed}

To minimise battery drain, whenever the Recording Devices are not deployed or are being stored, certain settings in the Recording Devices are recommended; including the ones illustrated below.



Avoid activating or running applications/functions that has a high battery drain, such as:

1. Screen on High Brightness
2. Always-on Screen Time (i.e. Auto-Lock set to NEVER)
3. Connectivity Setting ON (Wi-Fi, Bluetooth, Personal Hotspot, etc.)
4. Camera/Video Recording