

From Eye to Insight



AirTeach Software User Manual



Science Lab



Confirm IT Requirements



- Cameras from Leica Microsystems (with up to date firmware) which are Ethernet compatible and in Ethernet Mode
- Cameras set to 800 x 600 Resolution and 10fps frame rate limit as starting point
- Cameras connected by Ethernet cable to connections at all microscope workplaces
- 1 Gigabyte Ethernet Network Ports for cameras and PC's. 5MBit/s per camera required (Camera Setting - Resolution: 800x600; Framerate 10 fps)
- Dedicated Network Switch to accommodate the number of cameras plus two PC's
- Dedicated 5Ghz/802.11 ac standard WiFi access points for the classroom. There should be a separate access point for every 10 connections of student mobile devices or laptops connecting to the network by WiFi
- Two Windows PC's; one for AirTeach (touchscreen or standard), one for the AirClass Content Sharing
 - Disable Firewalls
 - CPU: Intel Core i7
 - Network: 1GB Ethernet port
 - Memory: 16 GB
 - AirTeach installed on AirTeach PC
 - Windows 8.1 minimum
 - Disable Sleep, power saving modes, and anti-virus
 - Hard Drive: 256GB or larger (SSD preferred but not mandatory)
 - Monitor: 22" or larger (optional touch screen for AirTeach PC)
 - Connected to network by Cable (WiFi disabled)
 - Bonjour Installed on both PC's
 - AirClass installed on Content PC
 - AirClass PC must be set to only 1 monitor (no second screen)
 - AirTeach PC must be set to Extended Screen

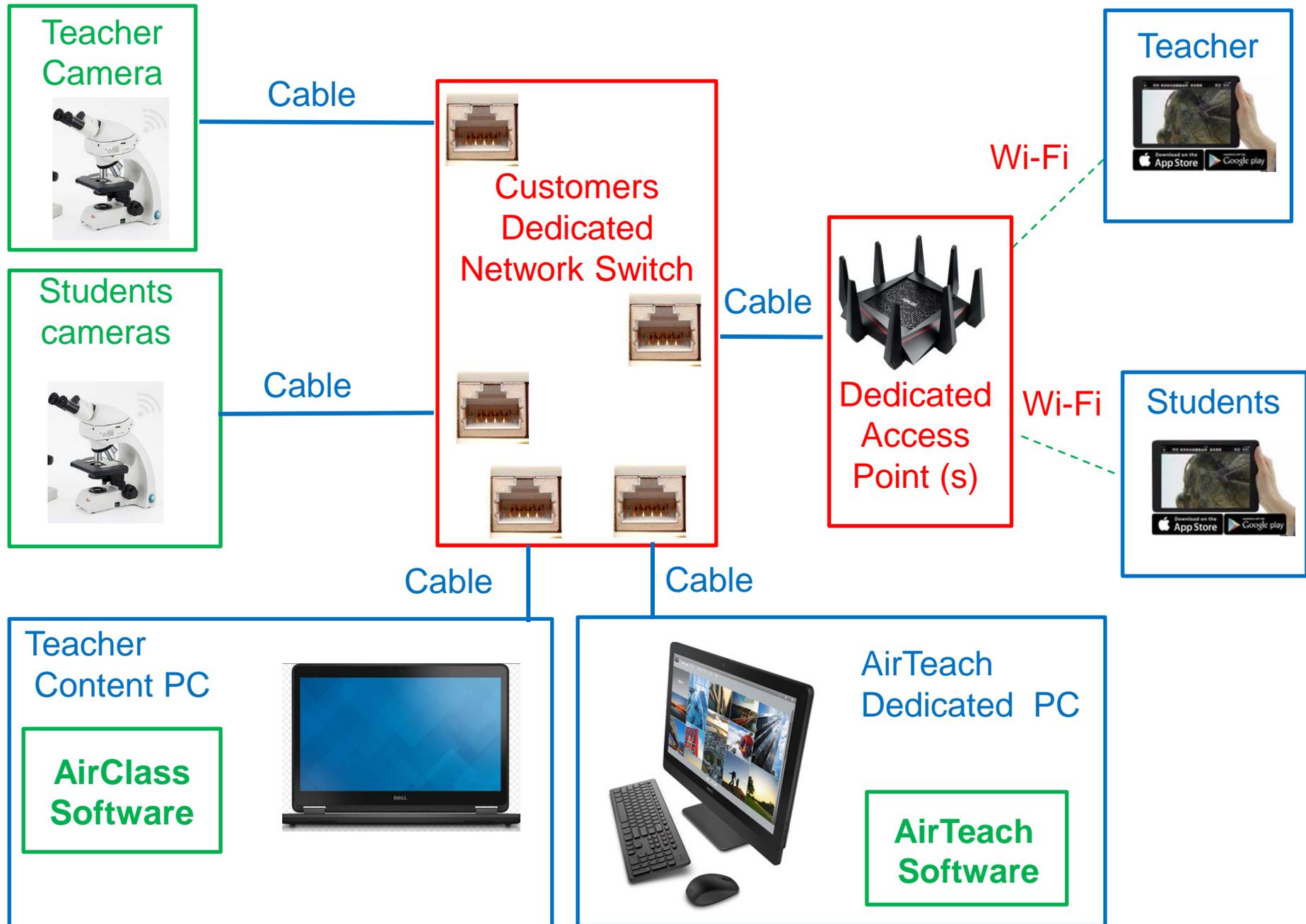
Confirm IT Requirements (continued)

- Projector or Large Screen Display
- Mobile devices (iOS 8+, Android 4.1+) using 802.11 ac WiFi standard with latest version of AirLab installed for the students and Teacher
- Teacher mobile device must be with iOS 8+ only
- If WiFi connections of devices are in a different subnet than wired connection of the AirTeach PC, please provide a non expiring Static IP address.
- The following ports are opened within the network where the cameras and PC's are connected by cable and the mobile devices are connected by WiFi
 - TCP 80 (HTTP)
 - TCP 8080 (HTTP)
 - TCP 8081 (Login, classroom communication)
 - TCP 8900 (RTSP Proxy Server Management)
 - TCP 8082
 - TCP 8085 (HTTP)
 - UDP 8086 (Broadcasting)
 - UDP 8554 (RTSP)
 - TCP 8554 (RTSP)
 - UDP 554 (RTSP)
 - TCP 554 (RTSP)
 - TCP 8555 to 8605
 - UDP 8555 to 8605
 - UDP 5353 (Bonjour Multicast DNS)

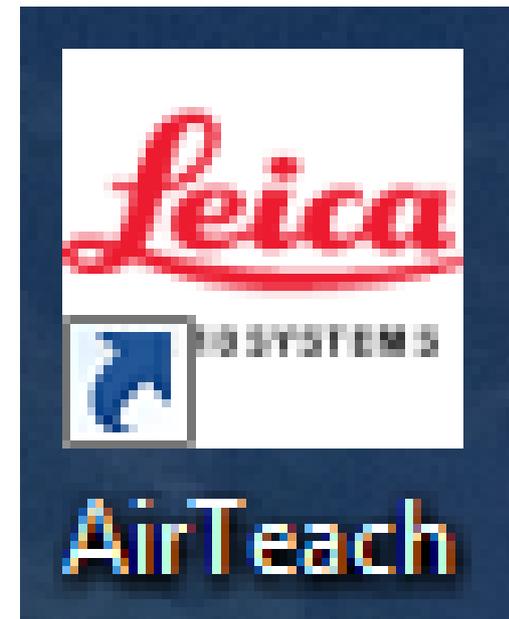
Quick Start Guide

1. Confirm IT Requirements
2. Connect cameras by Ethernet cable to network
3. Connect AirTeach PC by Ethernet cable to network
4. Connect AirClass Content PC by Ethernet cable to network
5. Power up Cameras (confirm Ethernet Mode)
6. Power up PC's
7. Power up Projector
8. Launch AirTeach from AirTeach PC
9. Configure Classroom Layout in AirTeach and Save
10. Launch AirClass from AirClass Content PC
11. Enter IP address of AirTeach PC in Settings of Mobile Devices for AirLab (Classroom IP) in the case where AirTeach PC is in a different Subnet than the Mobile Devices
12. In "Settings" of each mobile device, connect to the Access Point(s) which are dedicated to the Classroom
13. Launch AirLab on mobile device and Login using Camera name and Password (password seen in AirTeach)
14. GET STARTED!!

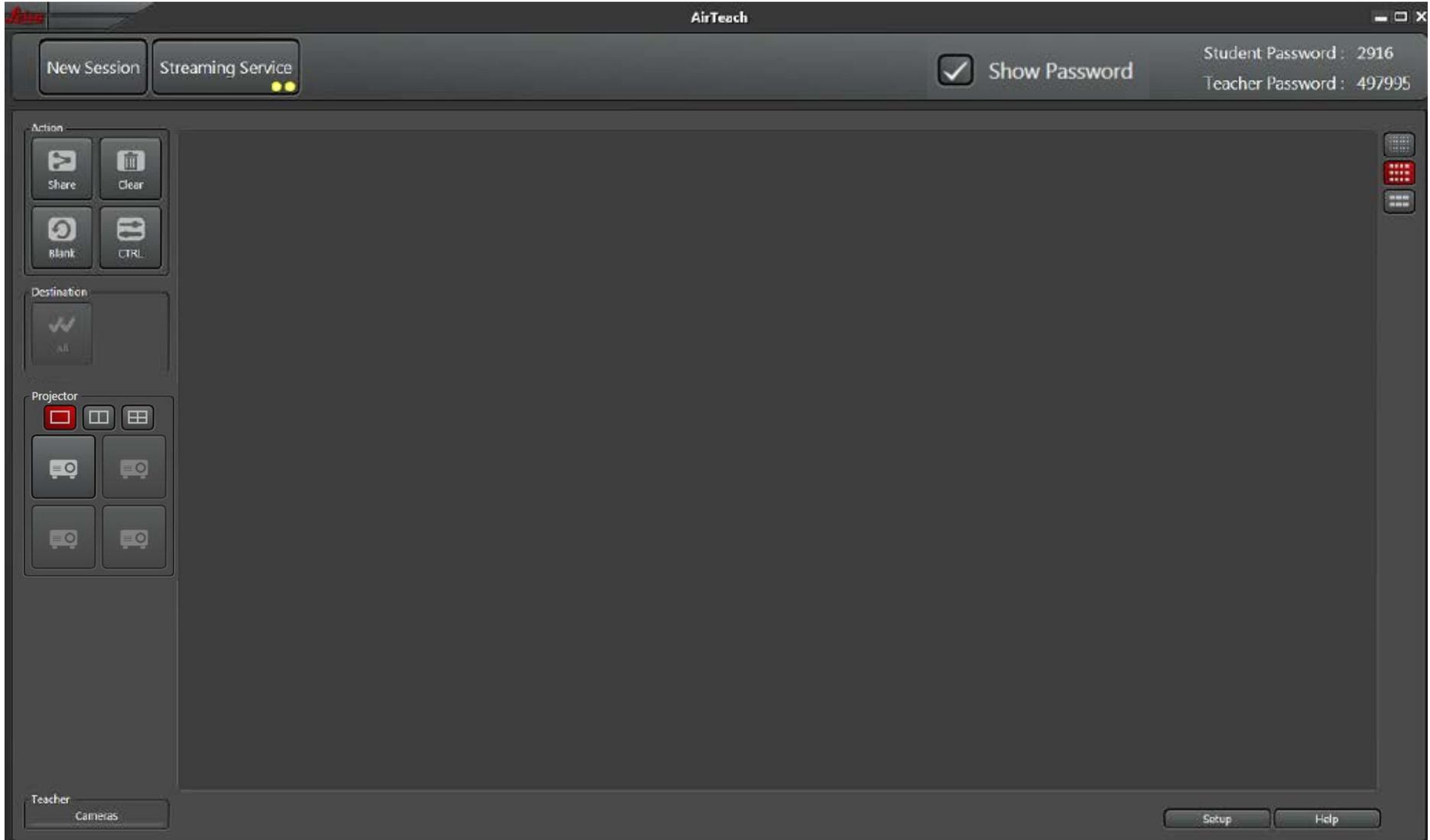
AirTeach Classroom System Diagram



- Confirm IT Requirements
- Connect Cameras, AirTeach PC, and AirClass PC by Ethernet cable to network
- Power up cameras, Confirm cameras are in Ethernet Mode
- Power up AirTeach PC and AirClass PC
- Power up Projector
- Launch AirTeach on AirTeach PC

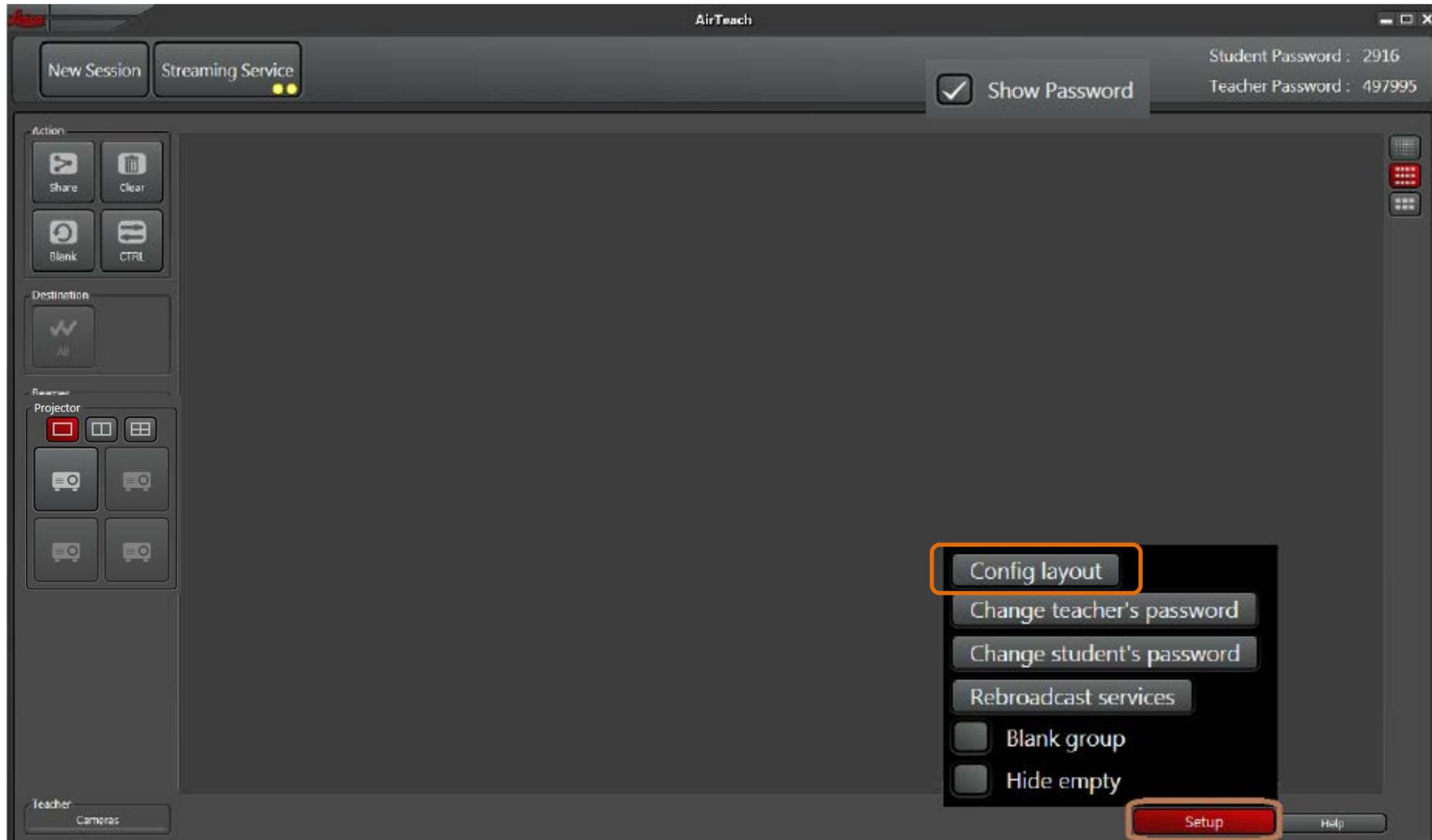


Teacher's Cockpit View



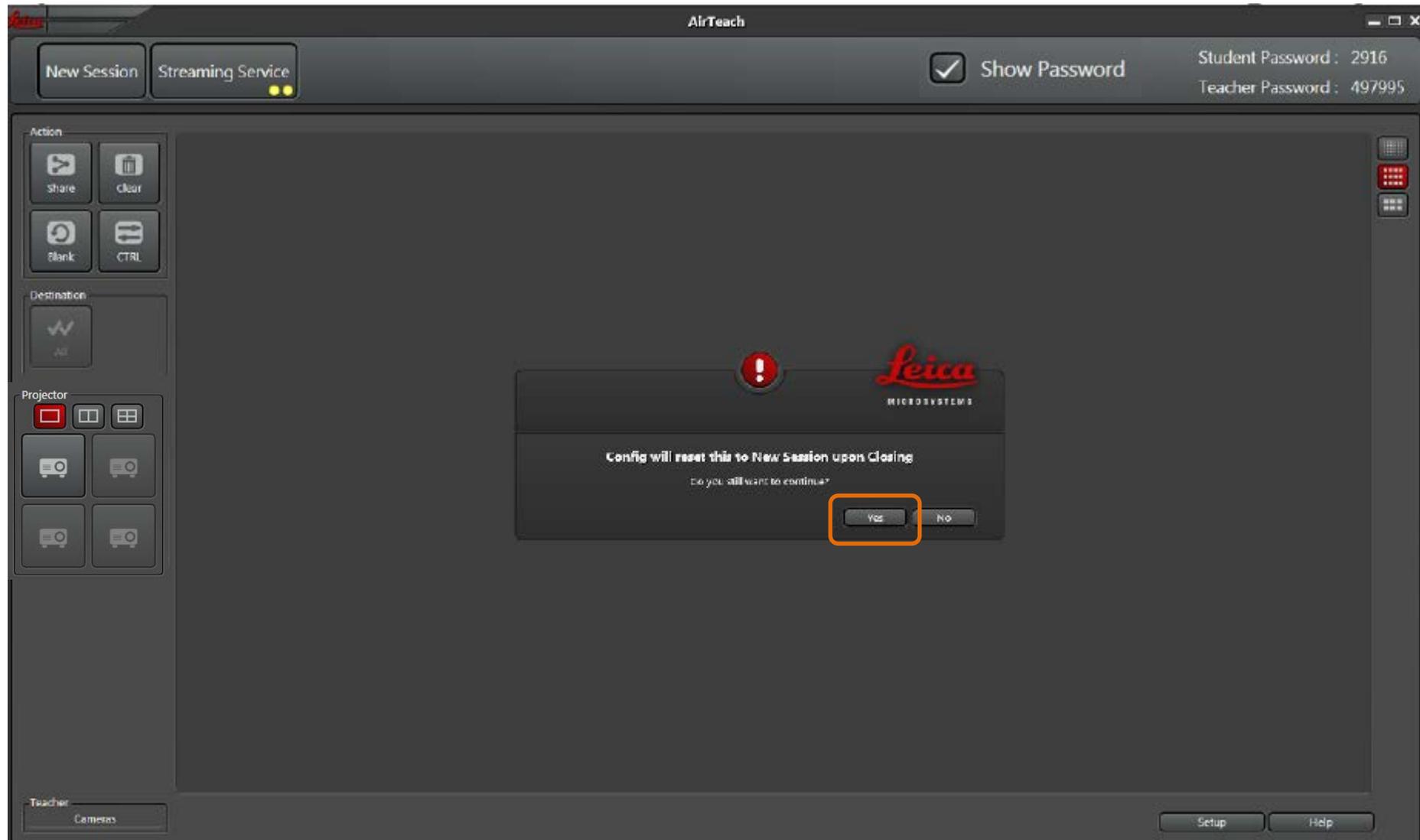
Teacher's Cockpit View

Click "Setup" and select "Config Layout"



Teacher's Cockpit View

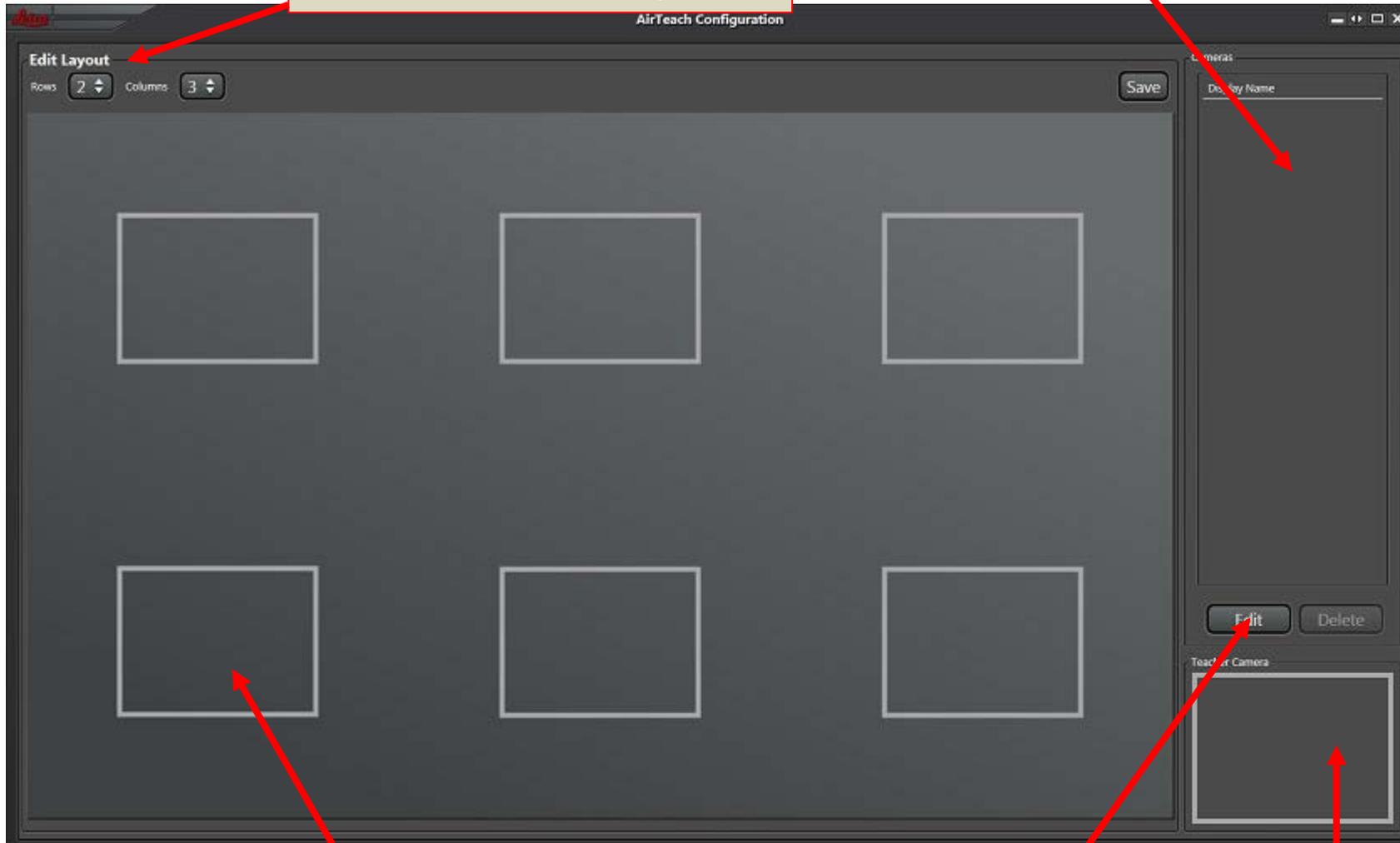
Warning message of New Session – Click “Yes”



Configuration View

Set rows and columns to match classroom layout

List of available cameras for your Session



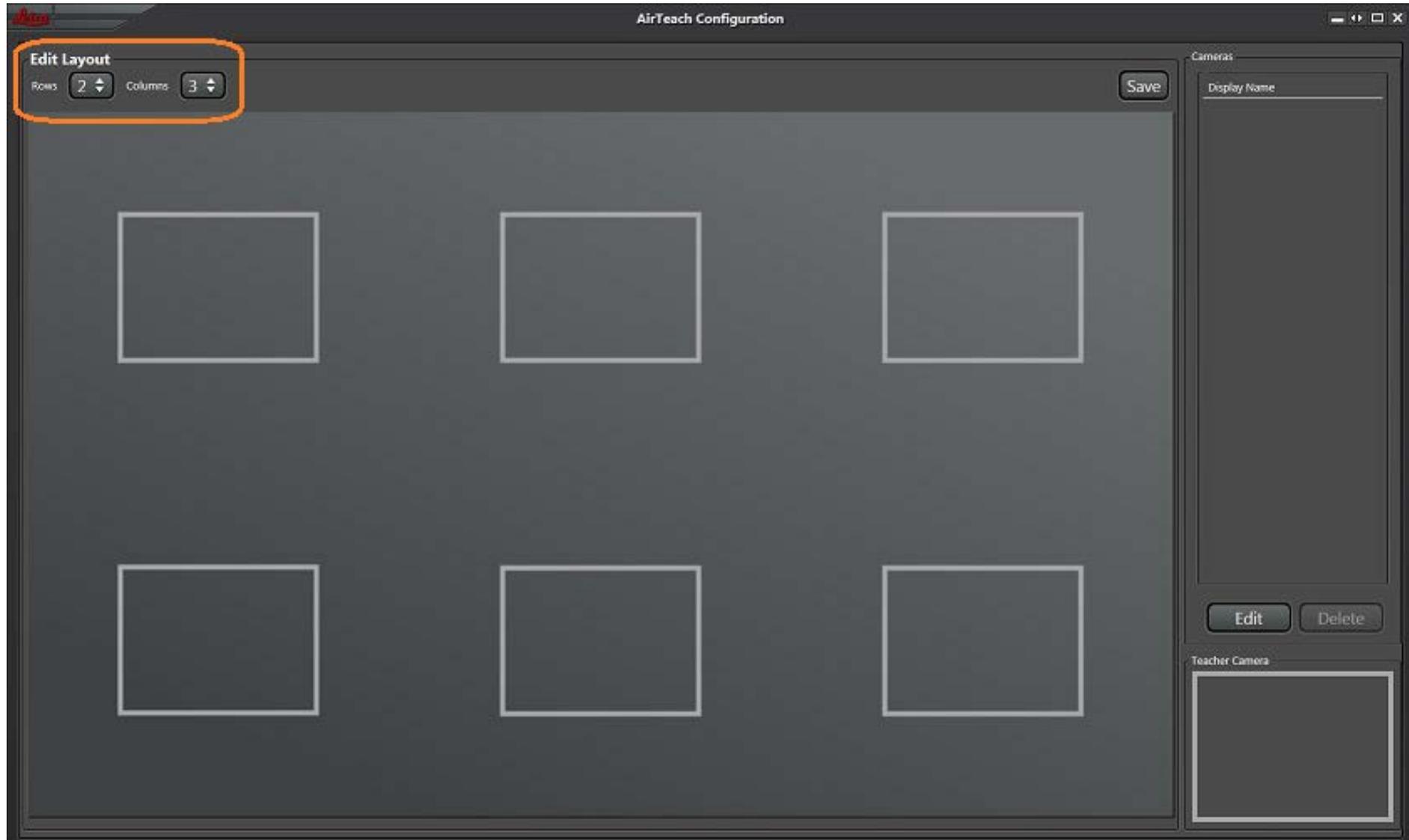
Positions for Cameras

Click to start adding cameras

Teacher's Camera Position

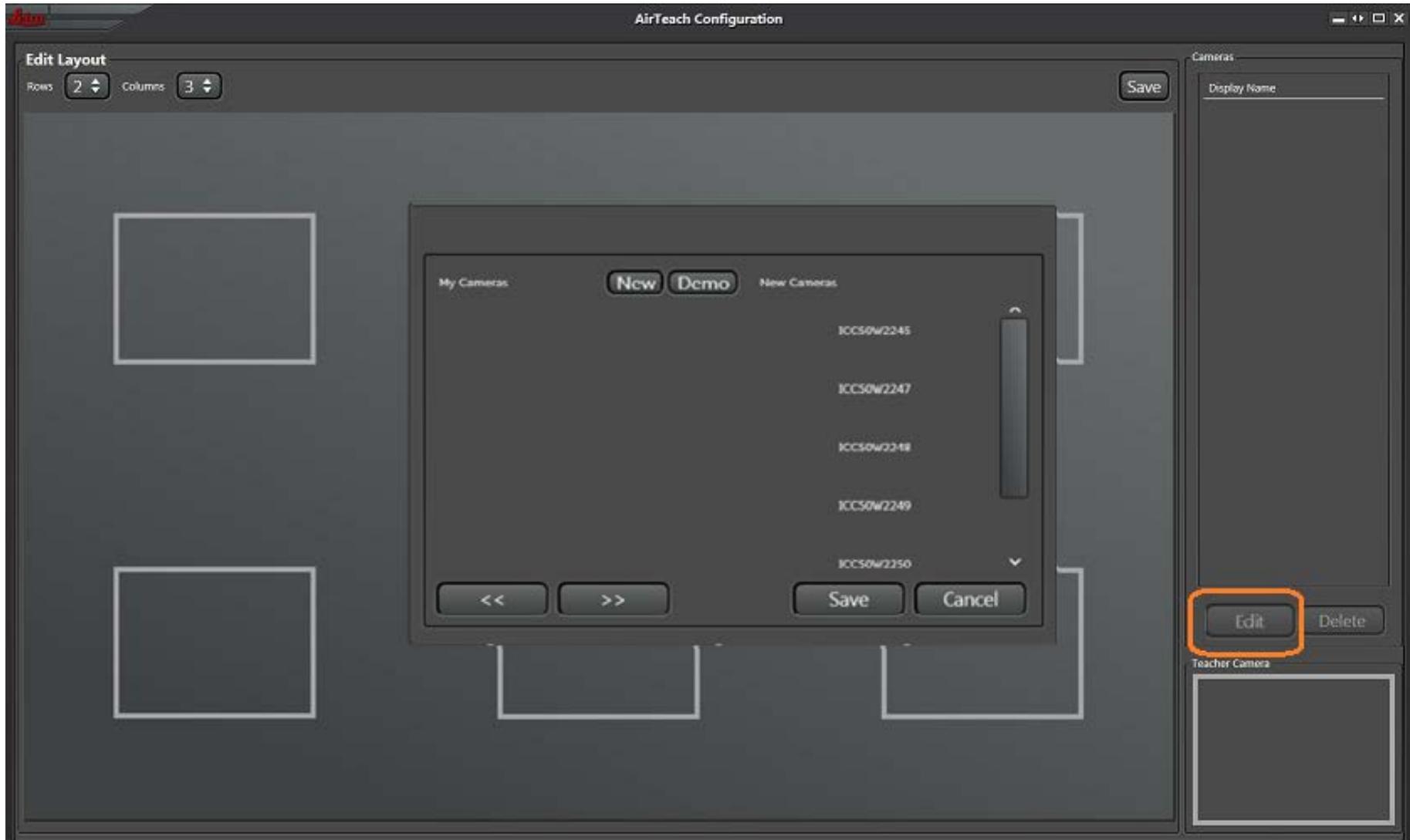
Configuration View

Set rows and Columns



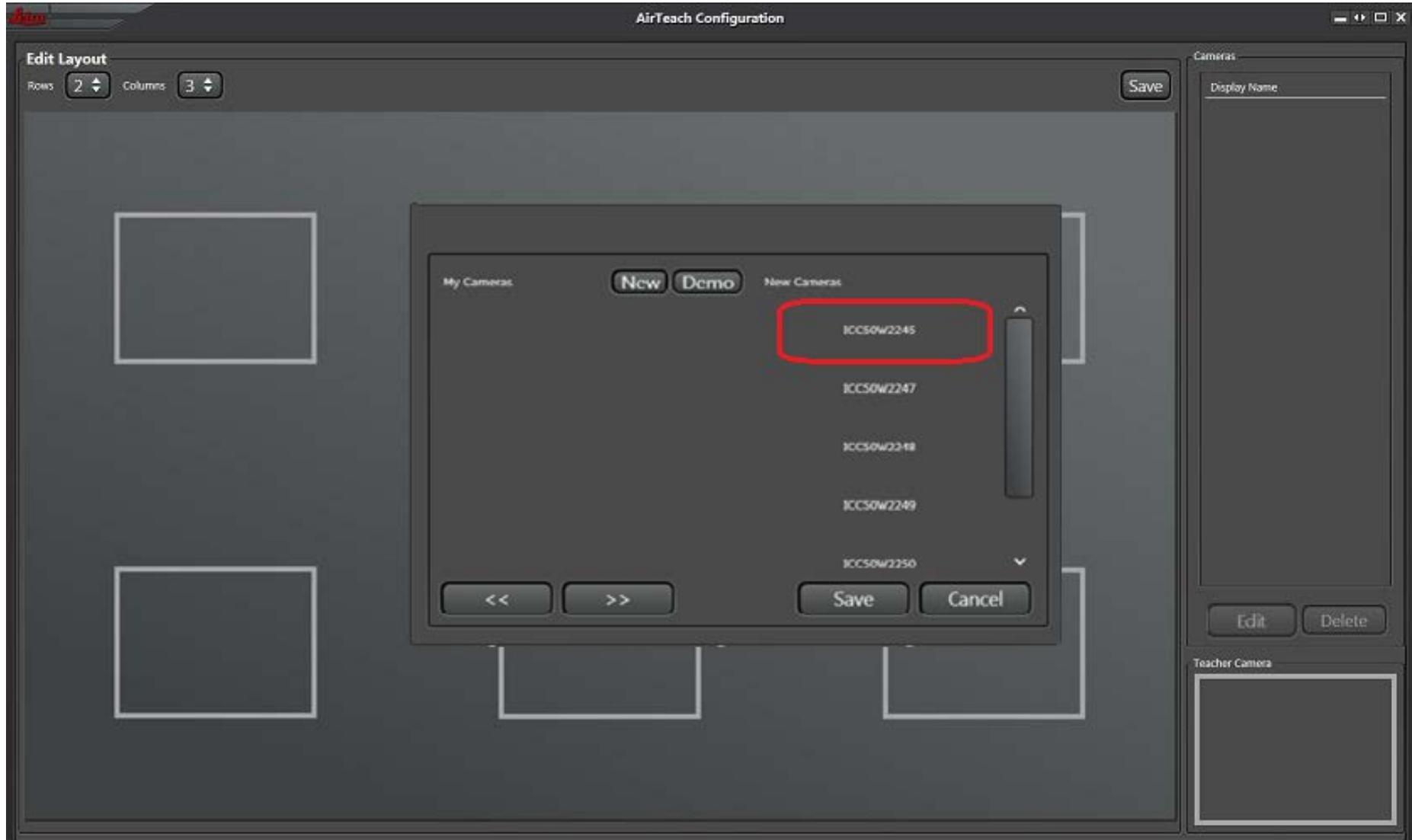
Configuration View

Click “Edit” to See list of cameras which have not been used before as “New Cameras”



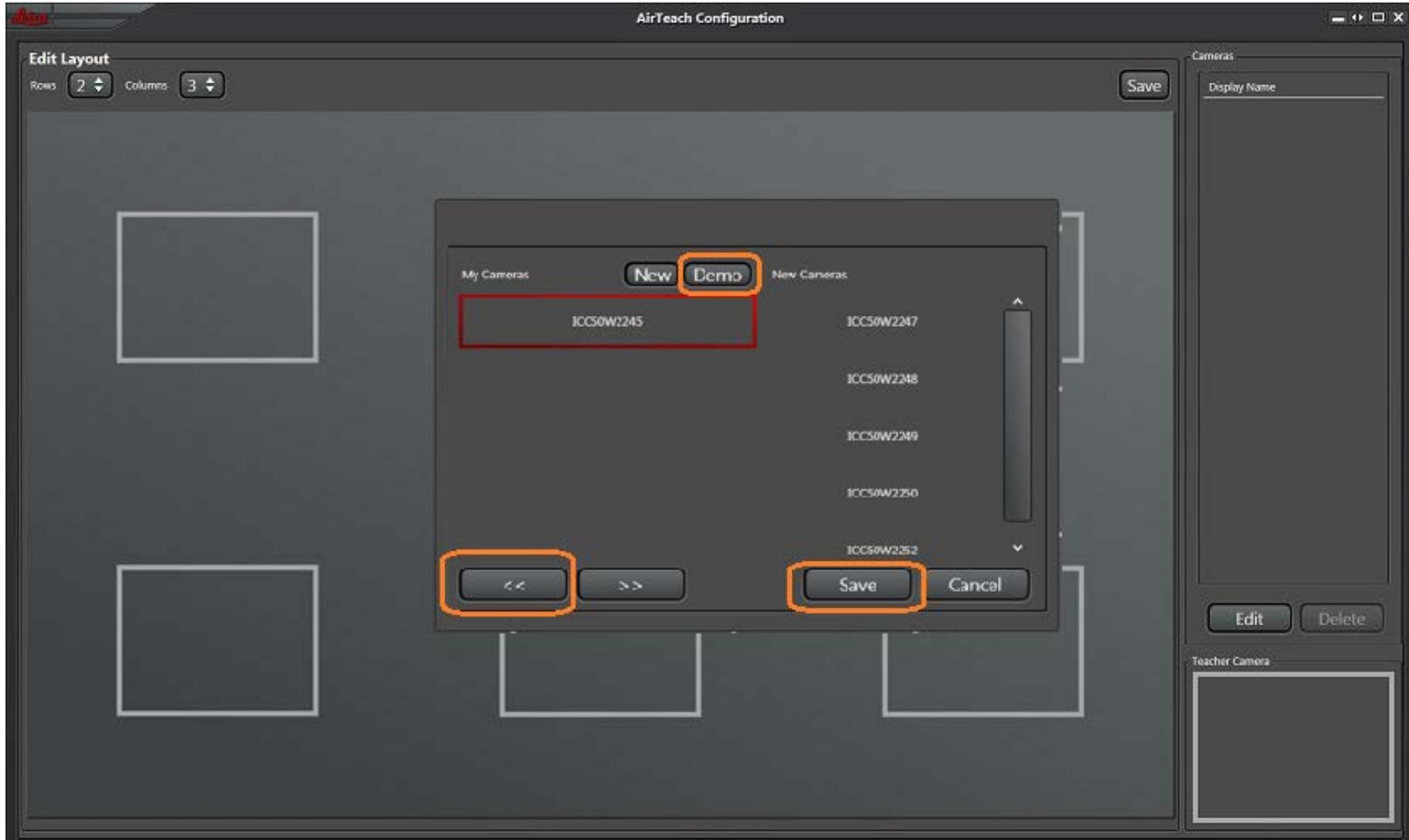
Configuration View

Select cameras you want for the session



Configuration View

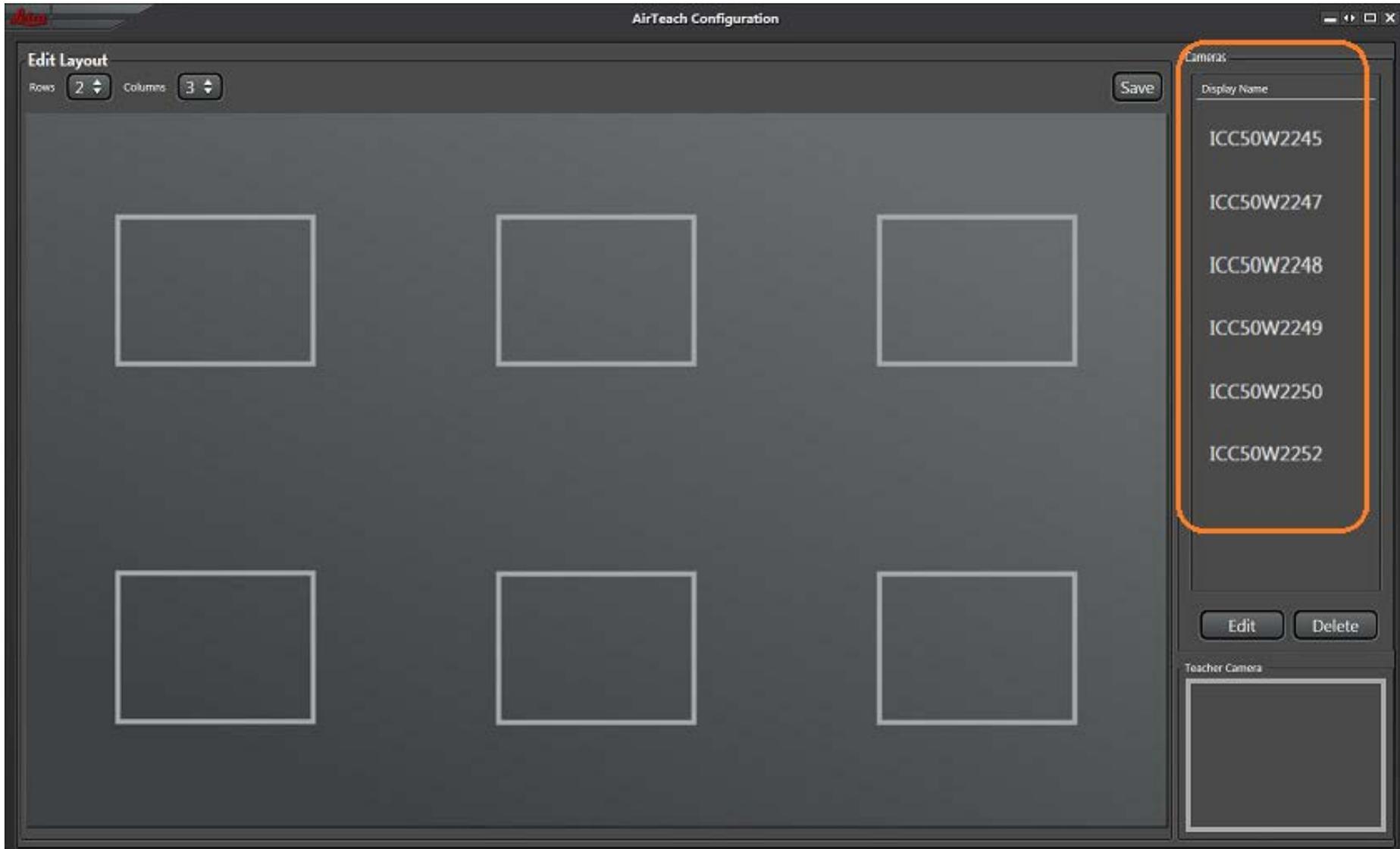
Move cameras to “My Cameras” using the arrow and “Save”



Note: Students who do not have cameras but have mobile devices and will participate in the AirTech Session can be assigned a Demo camera. Up to 30 Demo Cameras maximum are possible.

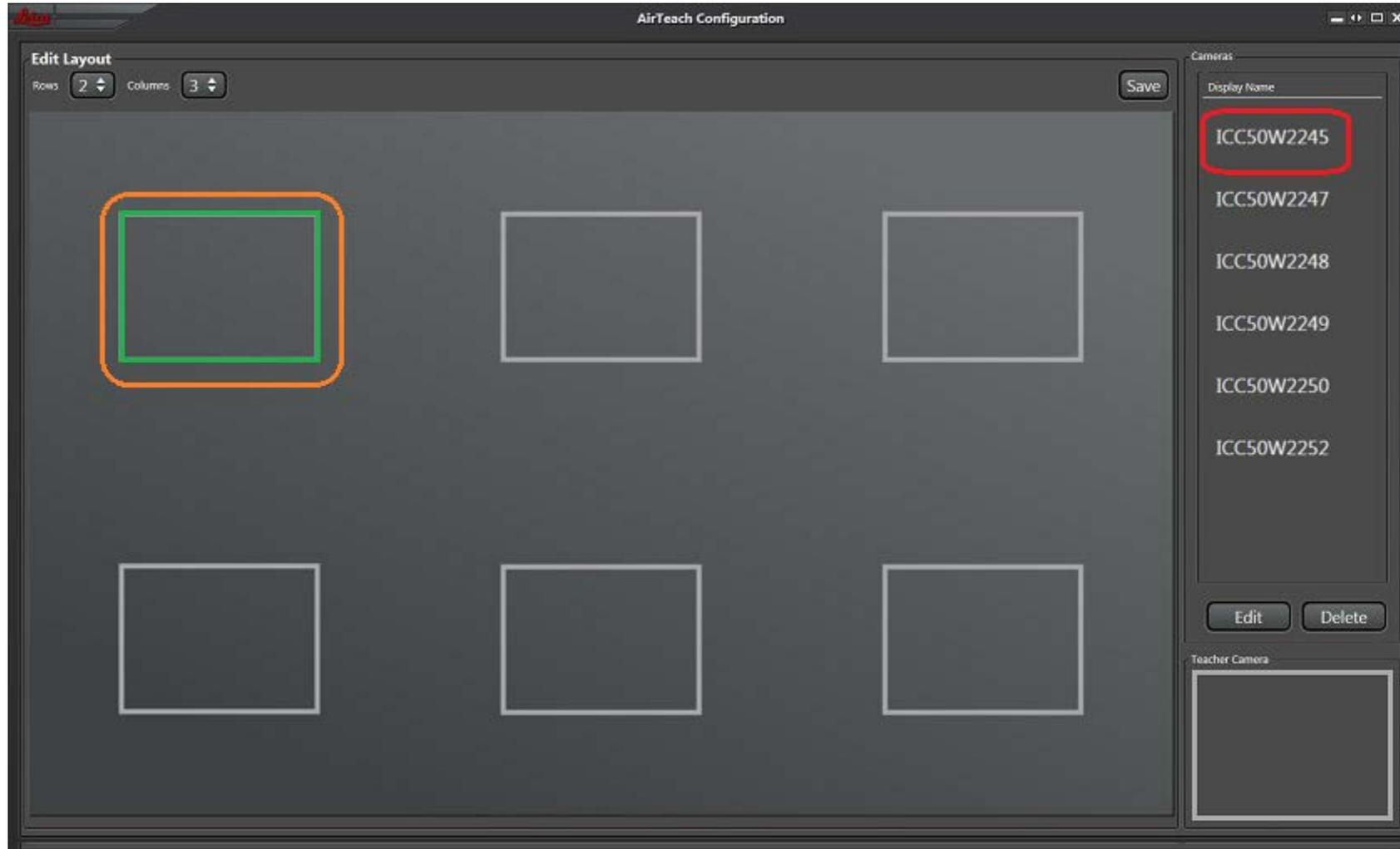
Configuration View

After Saving, “My Cameras” are moved to Camera list



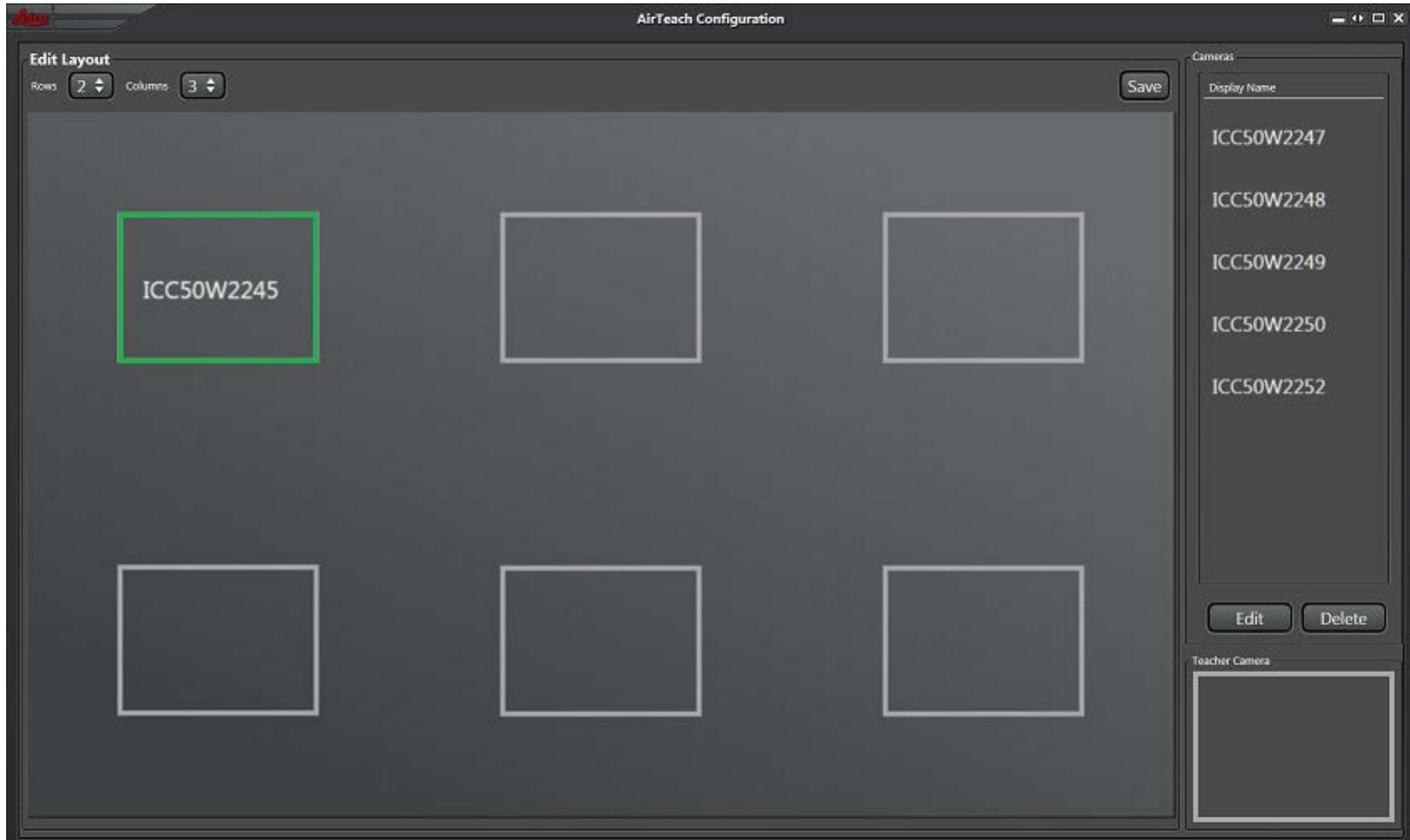
Configuration View

Select area where you want the camera to be positioned then drag and drop or double click on the camera name



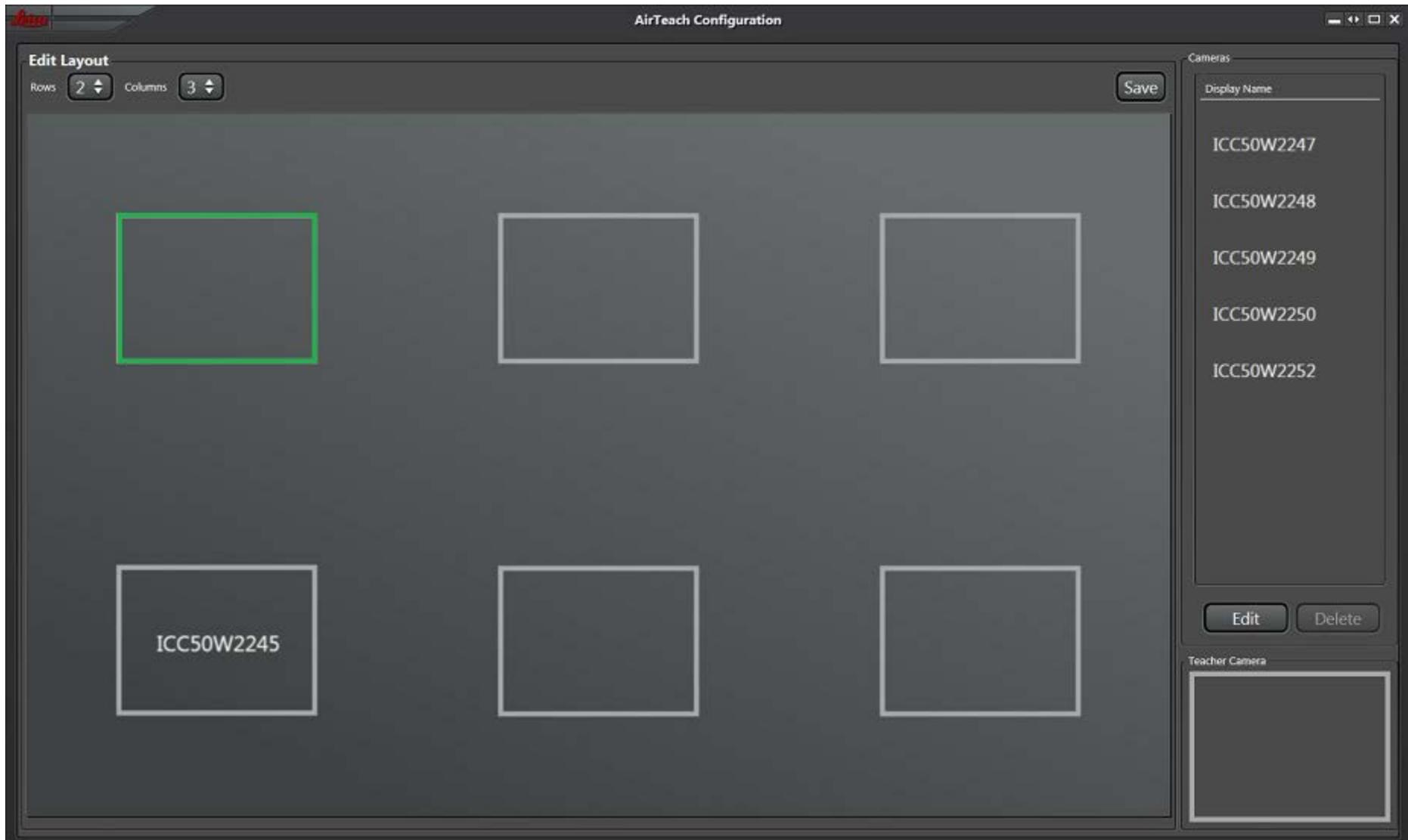
Configuration View

Camera name appears in the position and is removed from the camera list



Configuration View

Drag and drop to move camera to a new position



Configuration View

Position the Teachers Camera in the “Teacher Camera” box



Configuration View

Click “Save” and “OK” to save the layout and automatically switch to Teacher’s Cockpit view



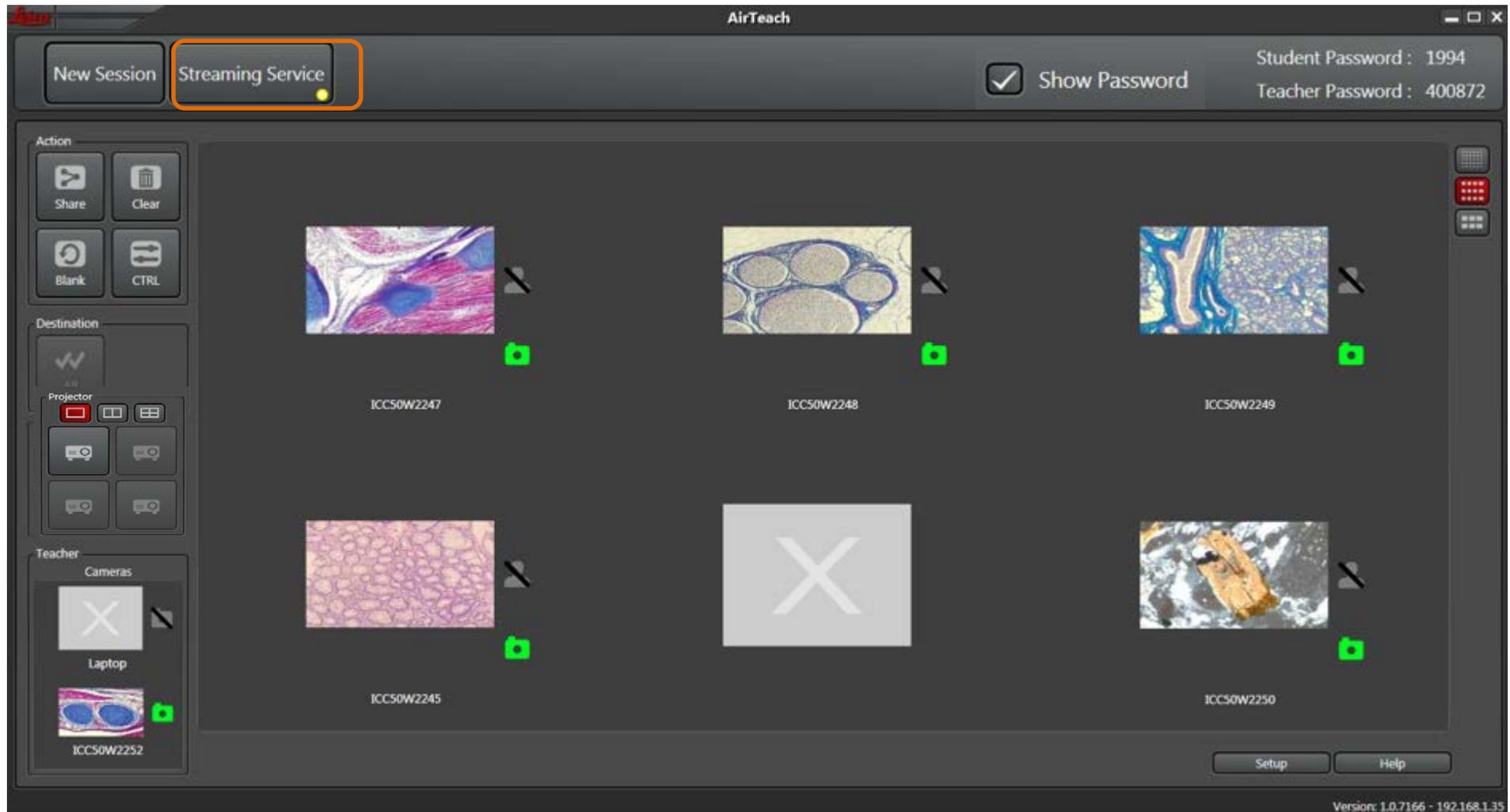
Teacher's Cockpit View

Startup of thumbnails



Teacher's Cockpit View

See Thumbnails of Cameras and Activate Streaming.



Note: when a camera is connected, the camera icon will be bright green and you will see a thumbnail. When a student is logged in, the person icon will be bright green

Teacher's Cockpit View

The screenshot displays the 'Teacher's Cockpit View' interface. At the top left, there are buttons for 'New Session' and 'Streaming Service'. A 'Streaming indicator' light is visible next to the 'Streaming Service' button. On the top right, there is a 'Show Password' checkbox and fields for 'Student Password: 1994' and 'Teacher Password: 400872'. The main area contains a grid of thumbnails for different cameras, including 'Laptop' and several 'Camera' thumbnails. A 'Setup window' is open over the thumbnails, showing options like 'Config layout', 'Change teacher's password', 'Change student's password', 'Rebroadcast services', 'Blank group', and 'Hide empty'. A 'Help' button is also visible at the bottom right.

Start a new Session

Activate Streaming

Show Student Password on Projector

Student and Teacher Passwords

Streaming indicator

Action buttons

“Select all” function

Projector function

Student and camera log in indicators

Setup window

Help to see User Manual

Select thumbnail size

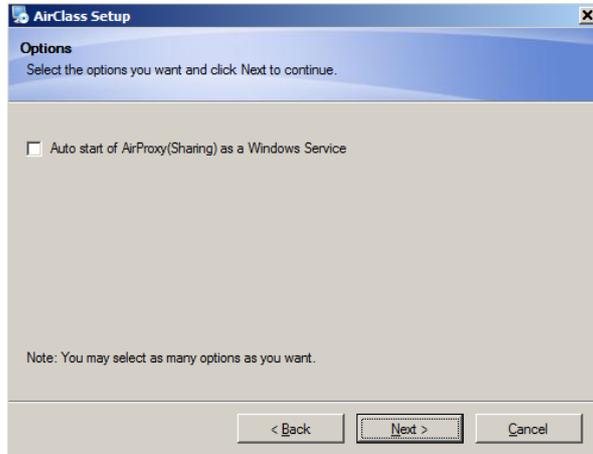
Teacher Laptop and Teacher Camera thumbnails

Student Camera Thumbnails

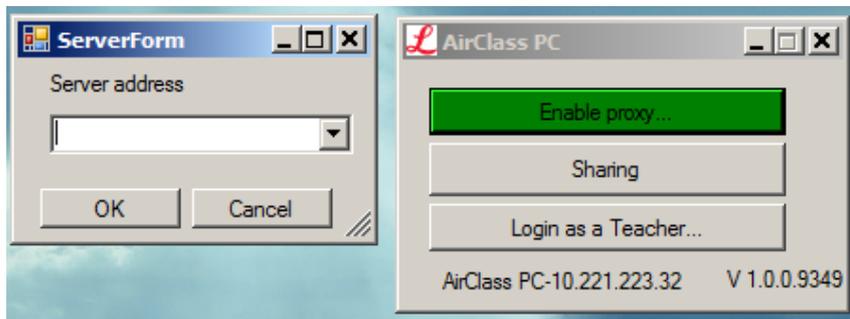
Open Setup window

IP address of AirTeach PC

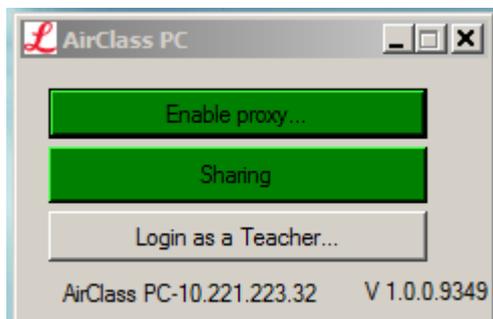
Launch AirClass on the Course Content PC



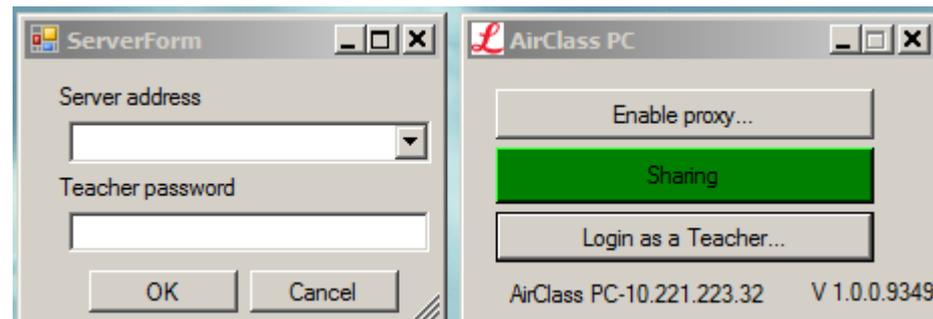
Note: During installation of AirClass, keep “Auto Start of AirProxy” unchecked if you want to share the AirClass PC screen as an image source



Click “Enable proxy and input the IP address of the AirTeach PC in the “Server Address” Window. You will find the IP address of the AirTeach PC in the bottom right corner of the AirTeach Cockpit screen



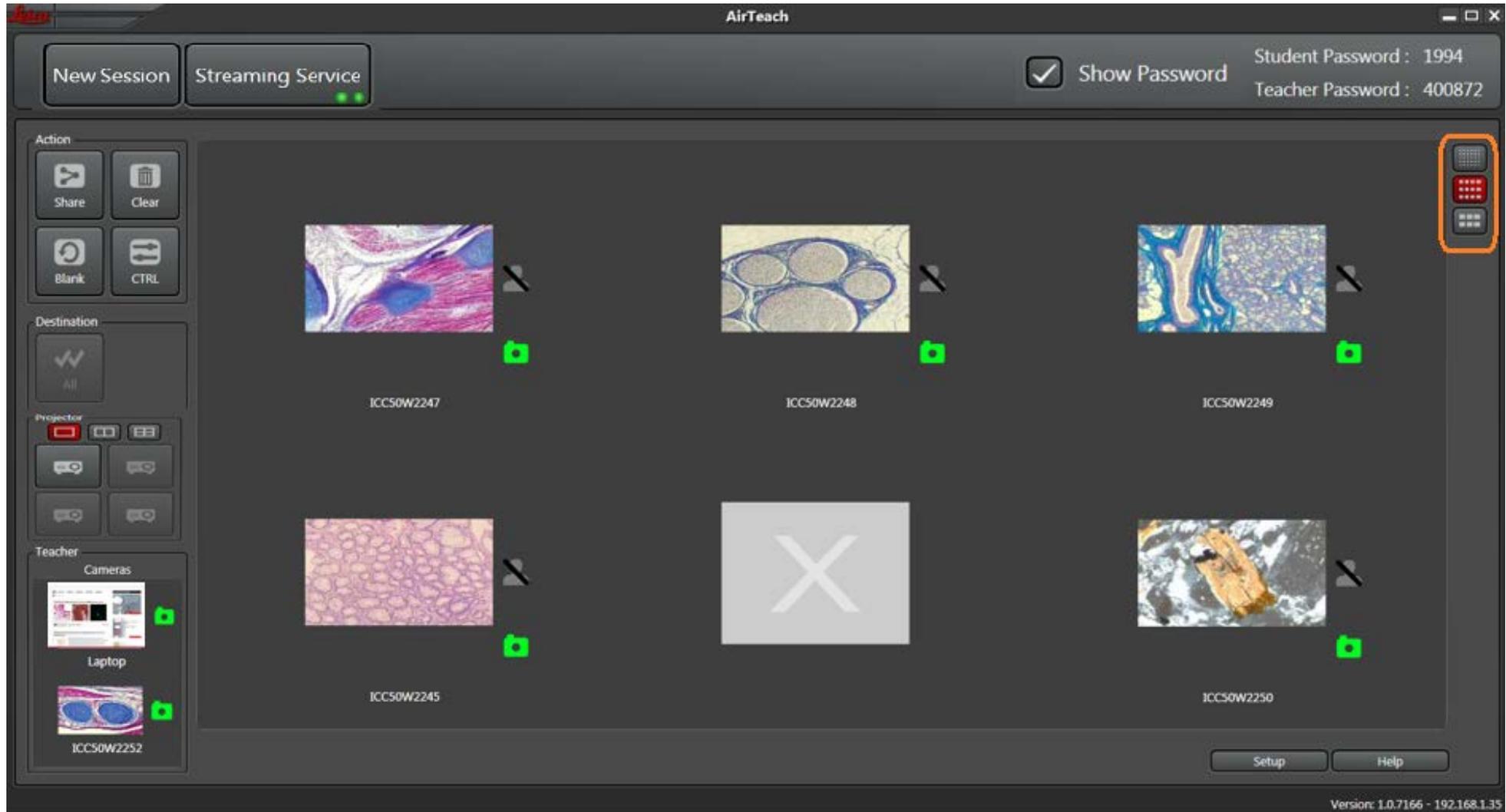
If sharing the AirClass PC as a Student, click “Sharing”



If sharing the AirClass PC as a Teacher, click “Login as Teacher” and input the IP Address of AirTeach PC and also input the Teacher Password. You will find the Teacher Password on the top of the AirTeach Cockpit Screen

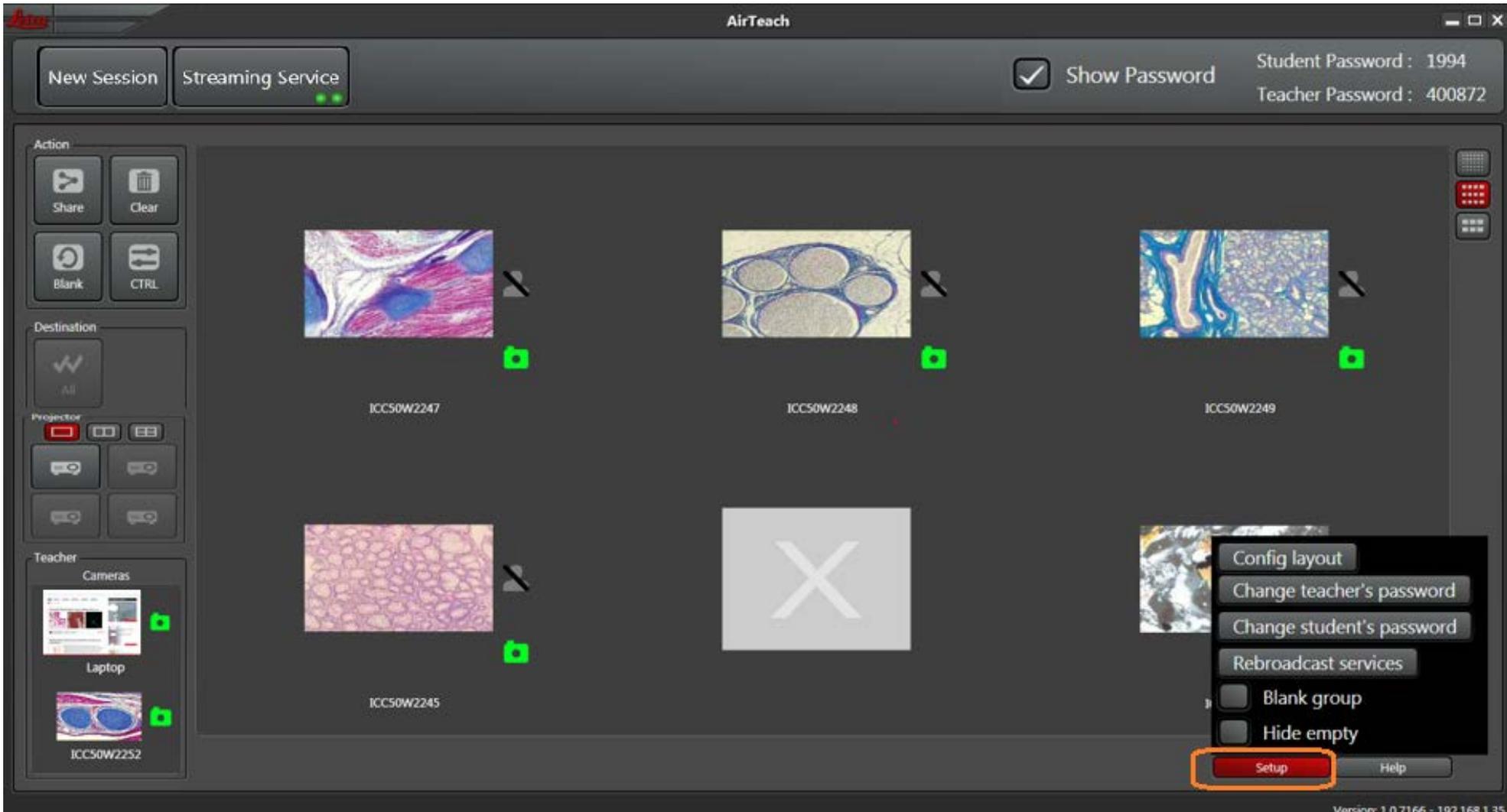
Teacher's Cockpit View

Select Thumbnail size



Teacher's Cockpit View

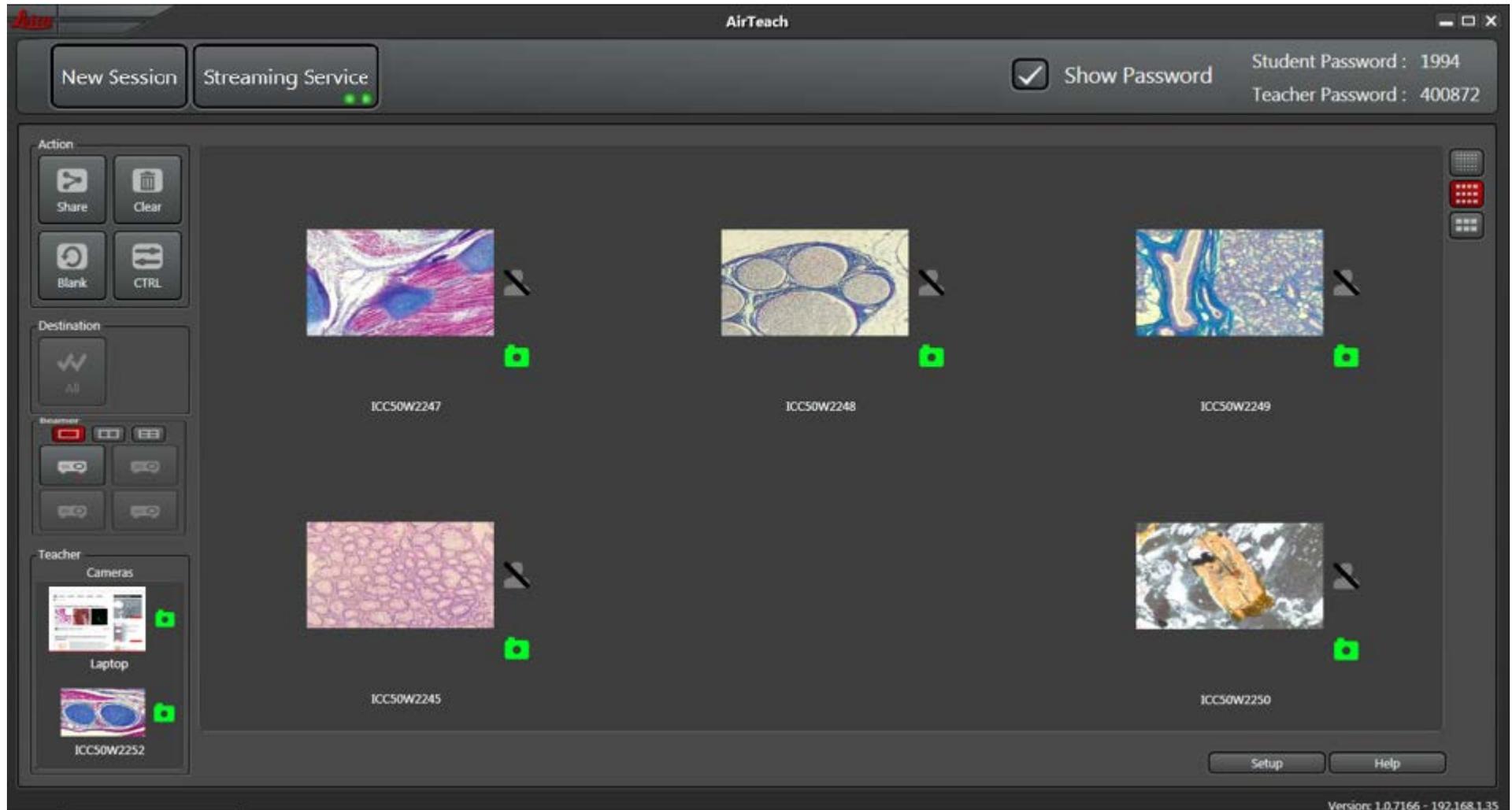
Click "Setup" and click "Hide Empty" to hide positions without cameras



Also use "Setup" to change passwords, return to "Configuration Layout View" or enable Blanking of subgroups

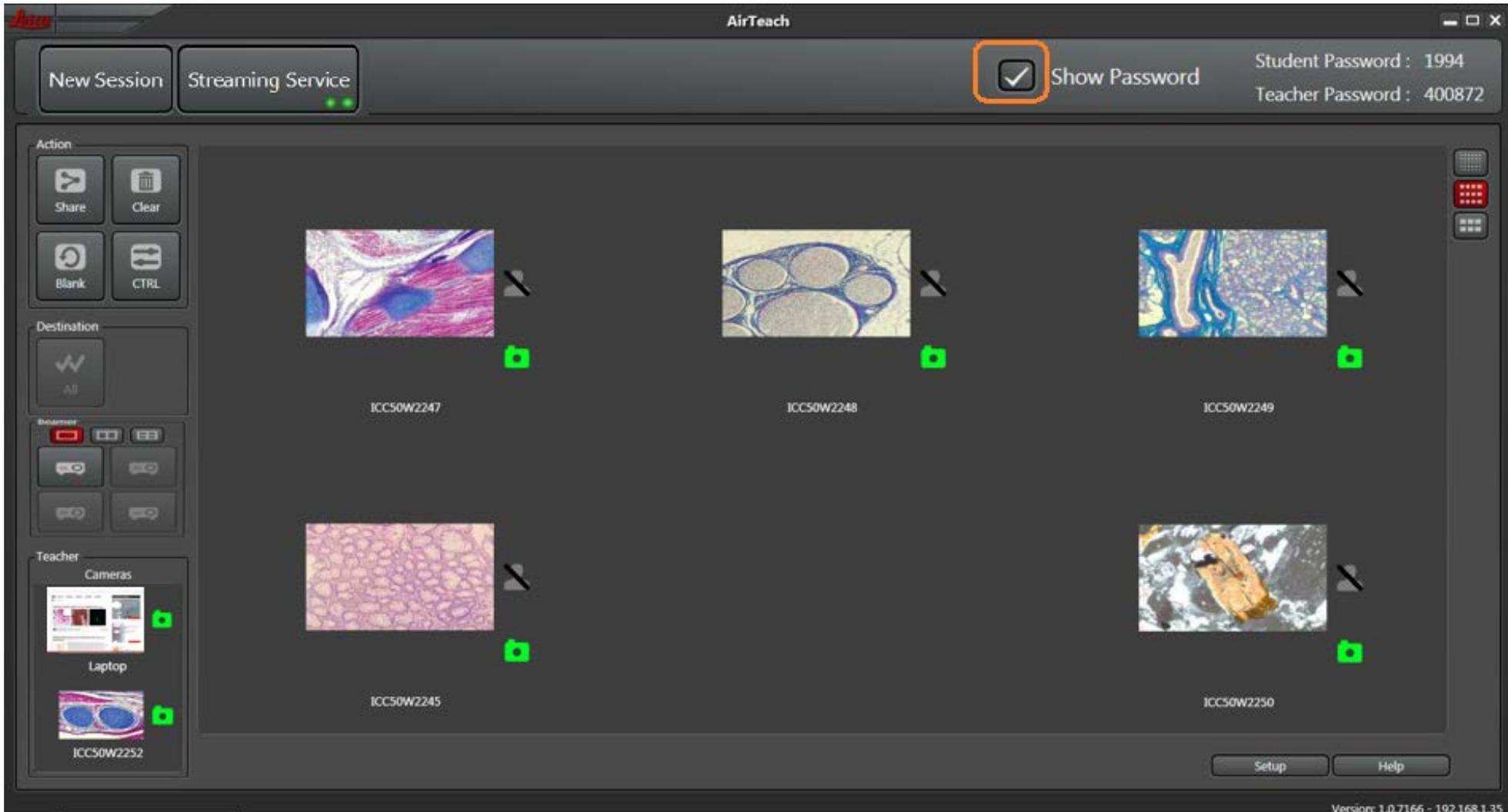
Teacher's Cockpit View

Thumbnail view now matches class layout



Projector View

Click “Show Password” to project password and IP address of AirTeach PC for Student’s to use to Log in



Note: If there is no power to the projector or no connection to a projector, the “Show Password” button will not appear

View of Projector Screen

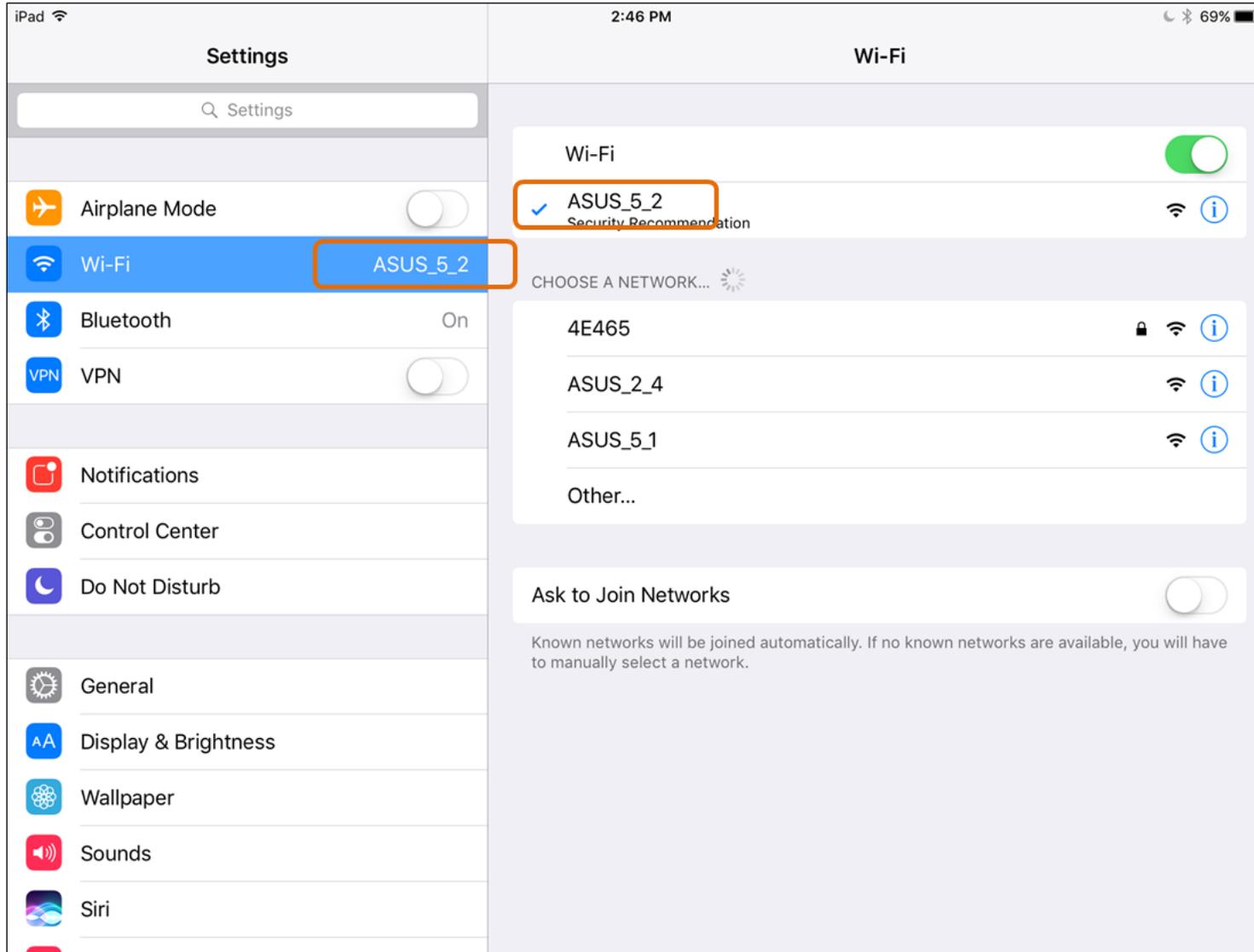
Session Password
for Students

1994

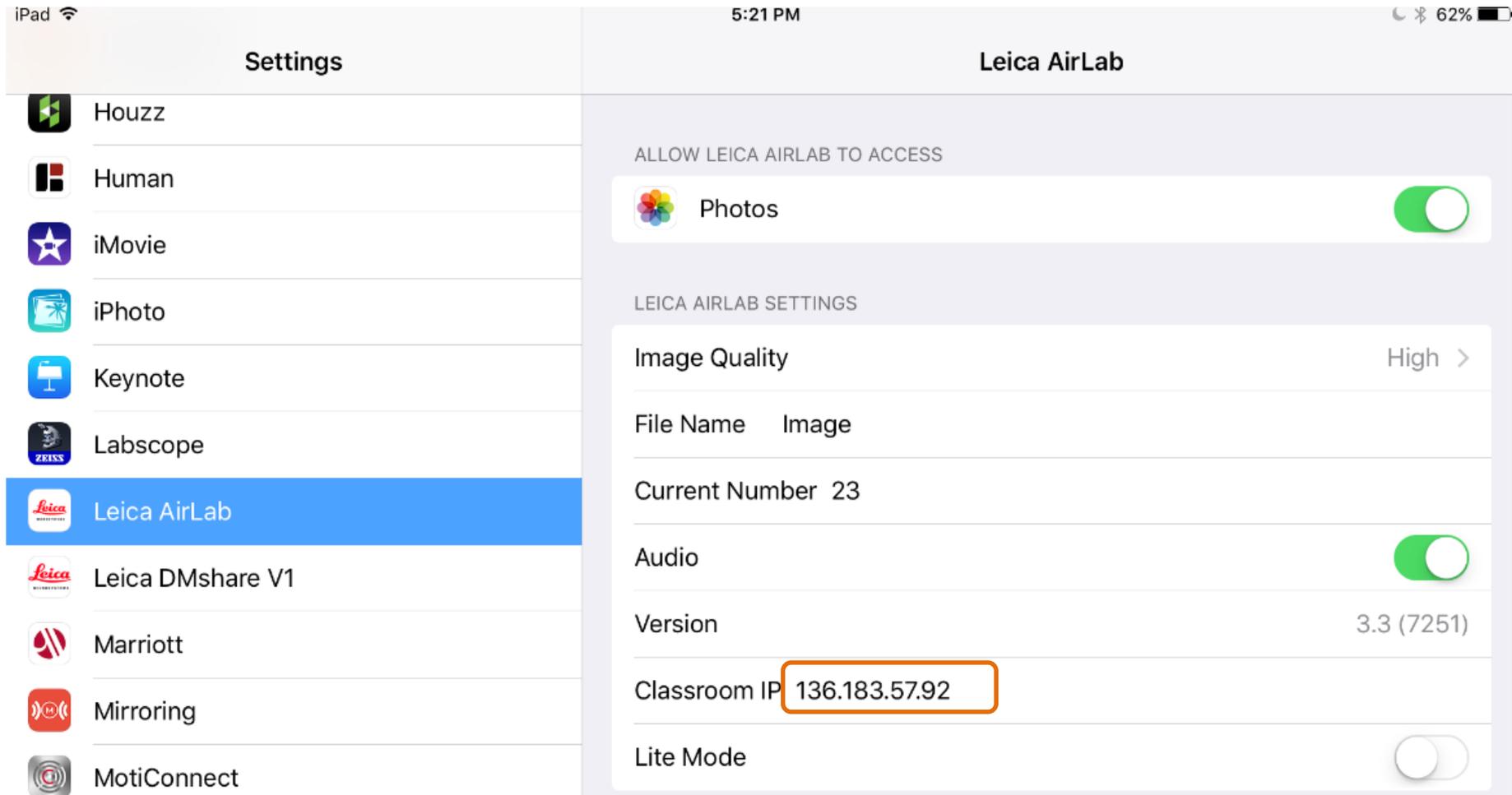
136.183.57.92

IP address of AirTeach PC

Teacher and Students connect to the Access Point(s) which are dedicated to the Classroom

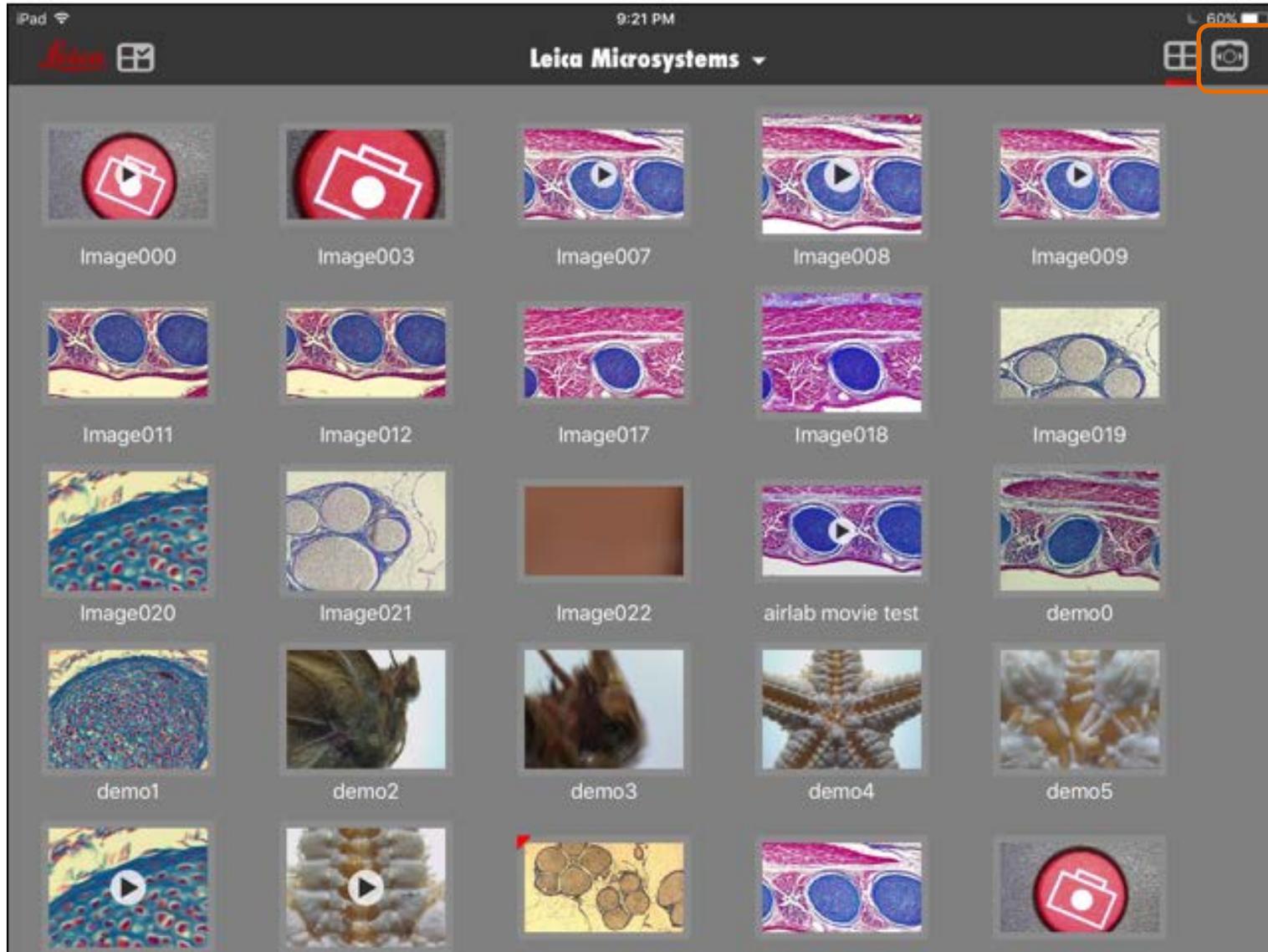


Teacher and Students input AirTeach PC IP address in Settings of their Mobile device for AirLab

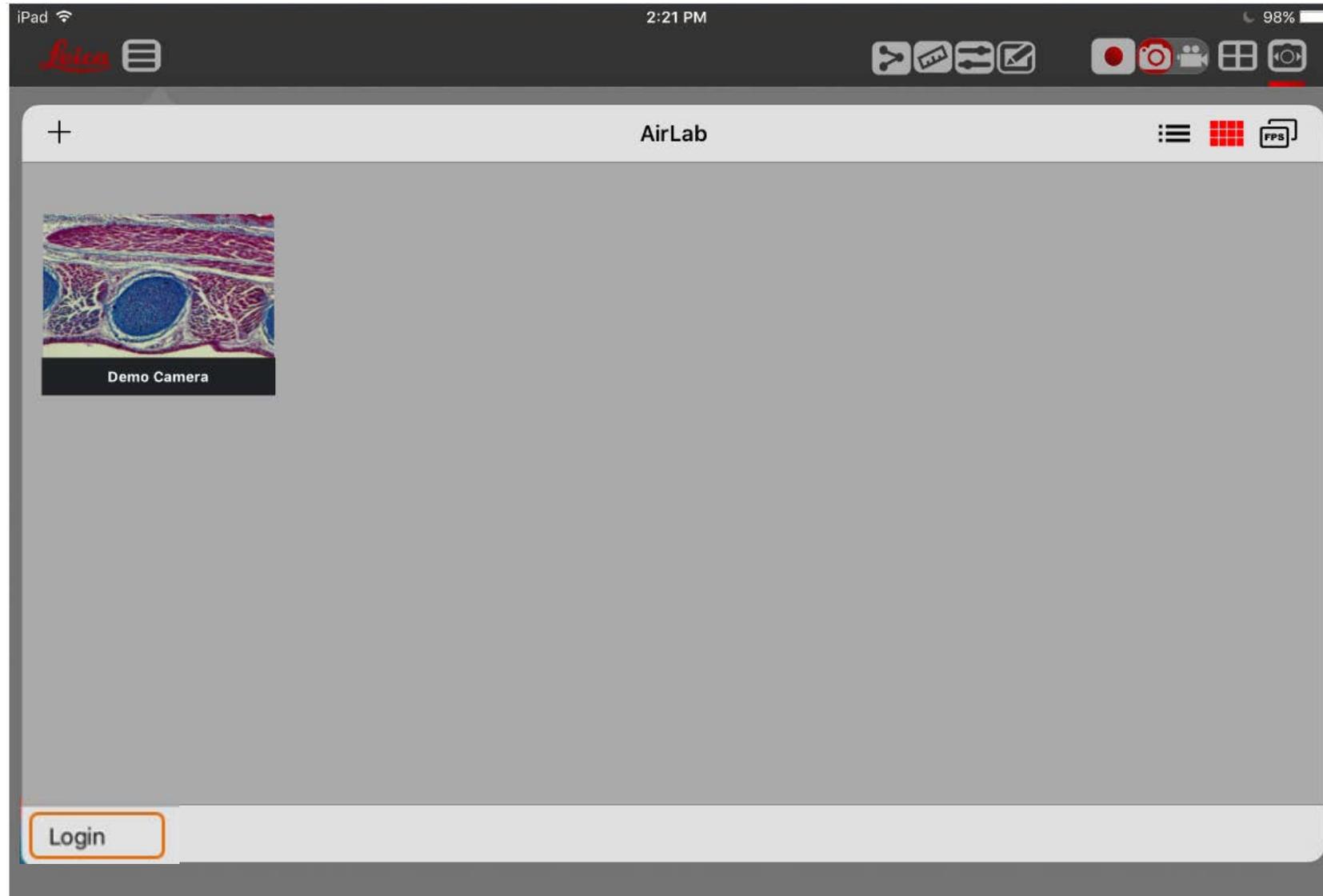


Note: This step is not necessary if AirTeach PC and mobile devices are in the same Network and same Subnet

Students and Teachers Launch Airlab in the Mobile device and switch from Gallery View to Live Camera View



After a few seconds “Login” appears on bottom left
Tap “Login”

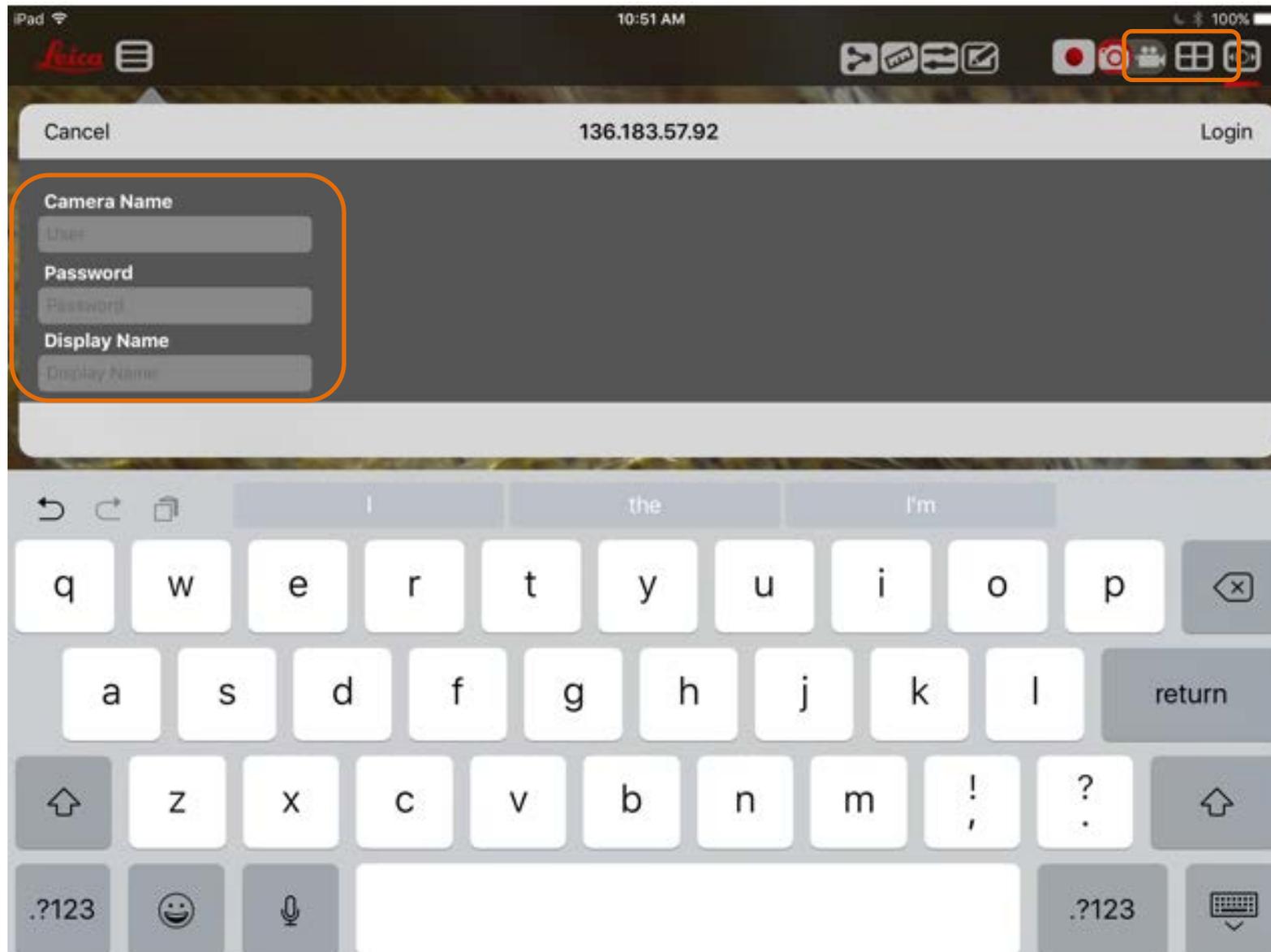


Note: “Login” will not appear if AirTeach is not Launched and the Tablets are not connected to the AirTeach PC via the Network

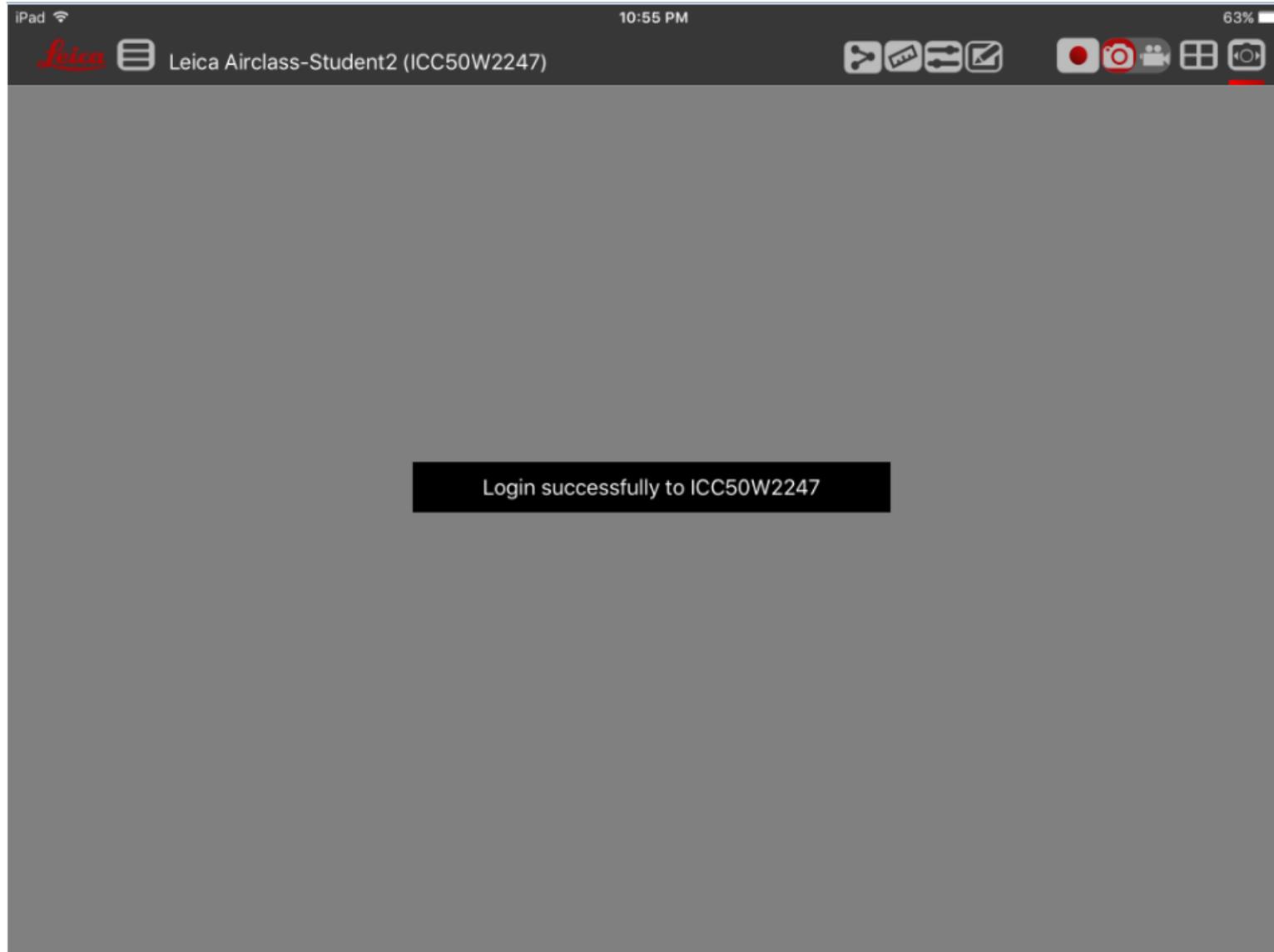
Students and Teachers Log in

Enter Camera Name, Password

(Teacher uses Teacher password), and Name to be displayed then Tap “Login”

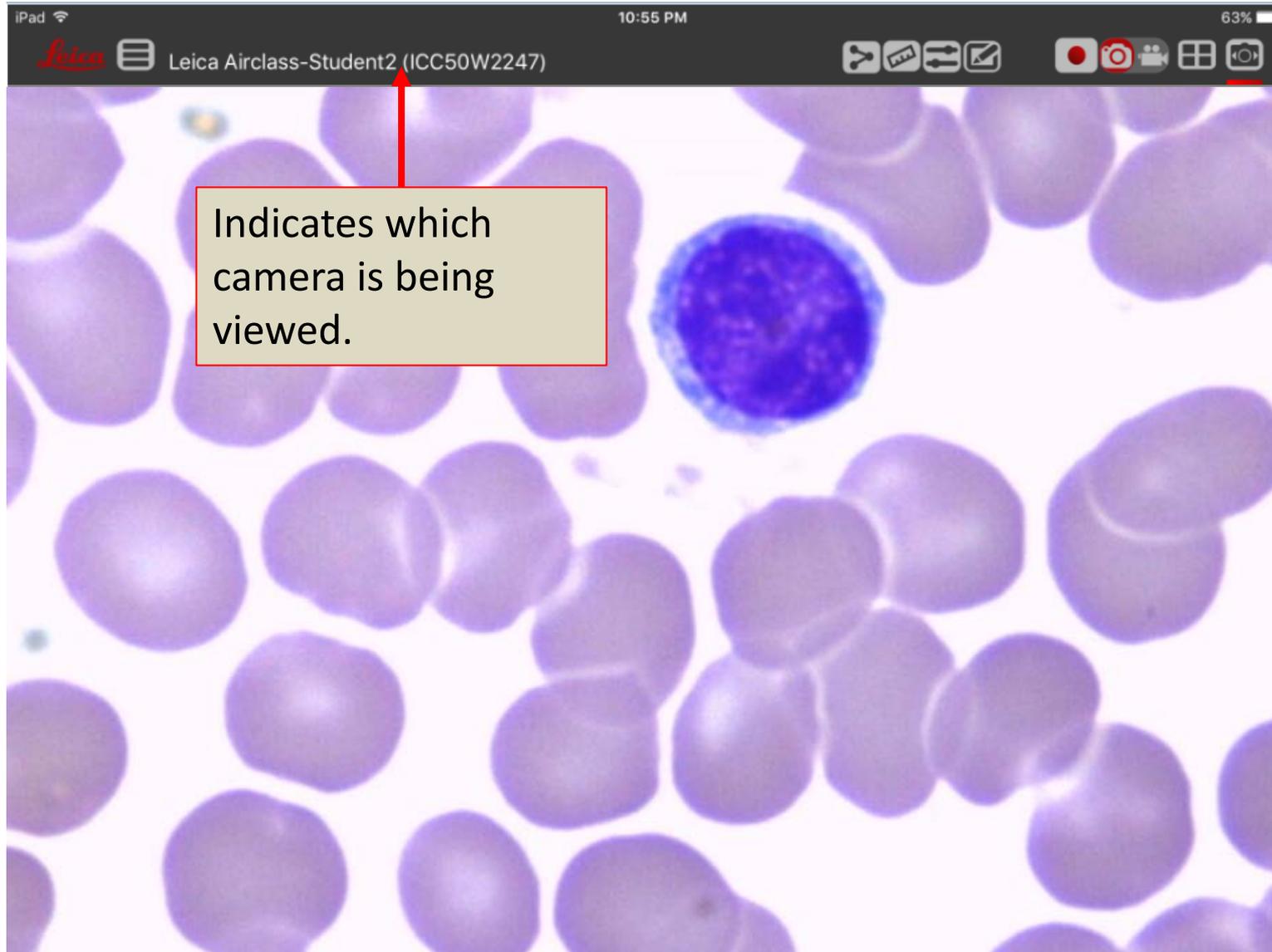


Successful Login Message

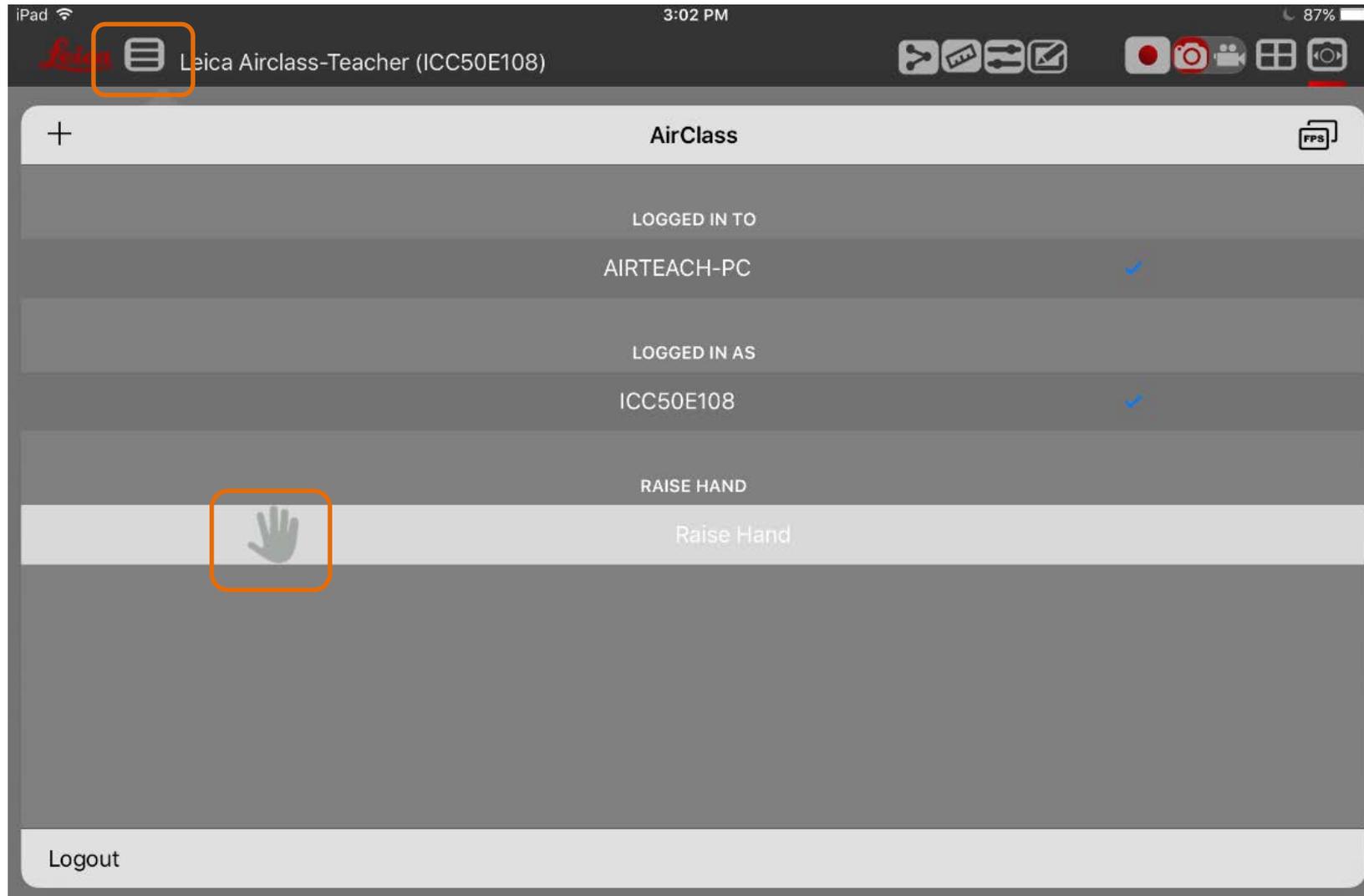


Note: If device logs out or AirTeach is closed, AirLab needs to be closed and restarted in order to Login once again

AirClass for Students Log in View Live Camera view after Login



AirClass for Students - Students can return to Camera List view and raise hand to give signal to Teacher and also toggle off raised hand

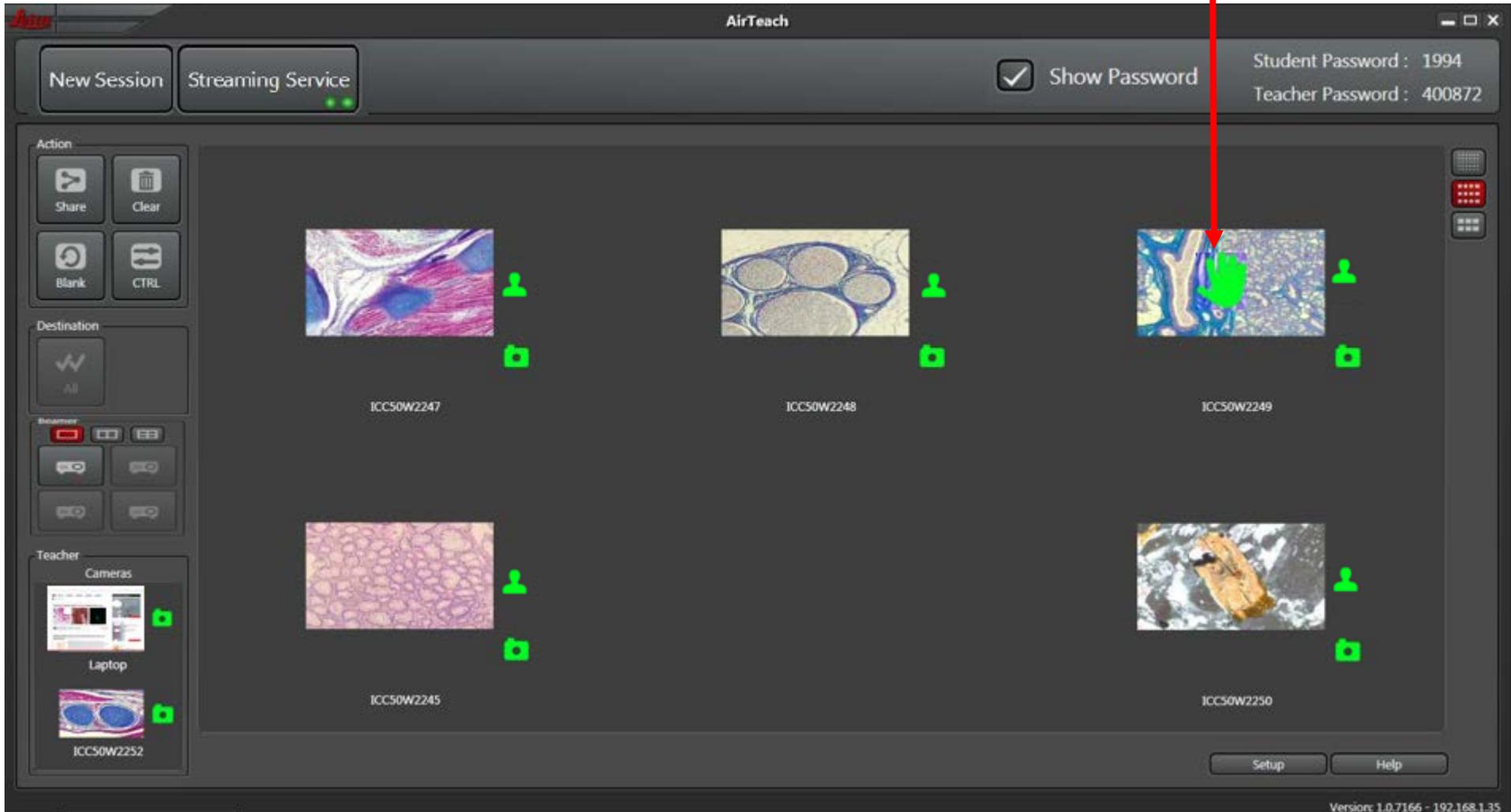


Note: When student is logged into an AirTeach session, he does not have a thumbnail view

Teacher's Cockpit View

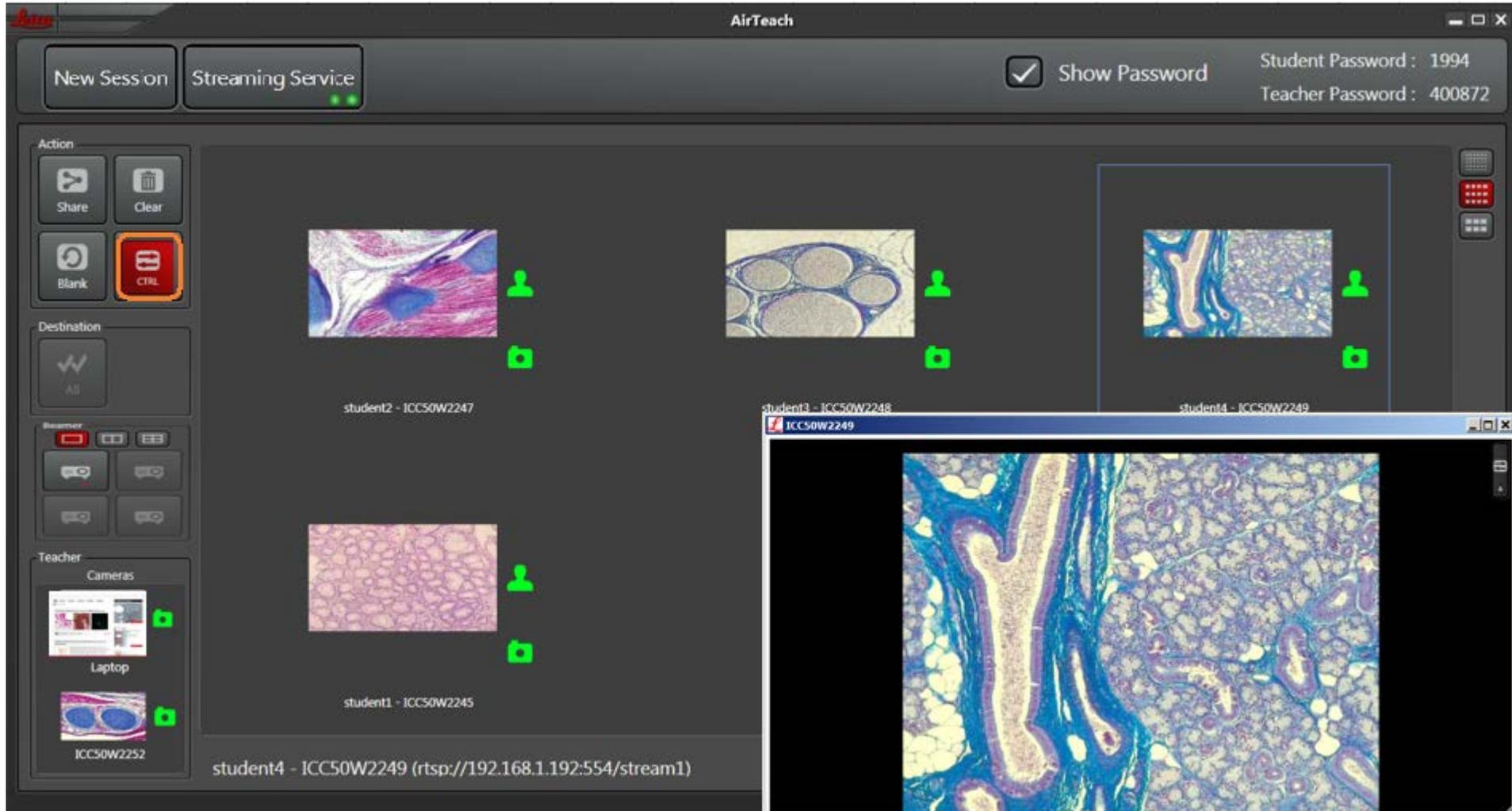
Student's Logged in show as green

Raised hand indicator



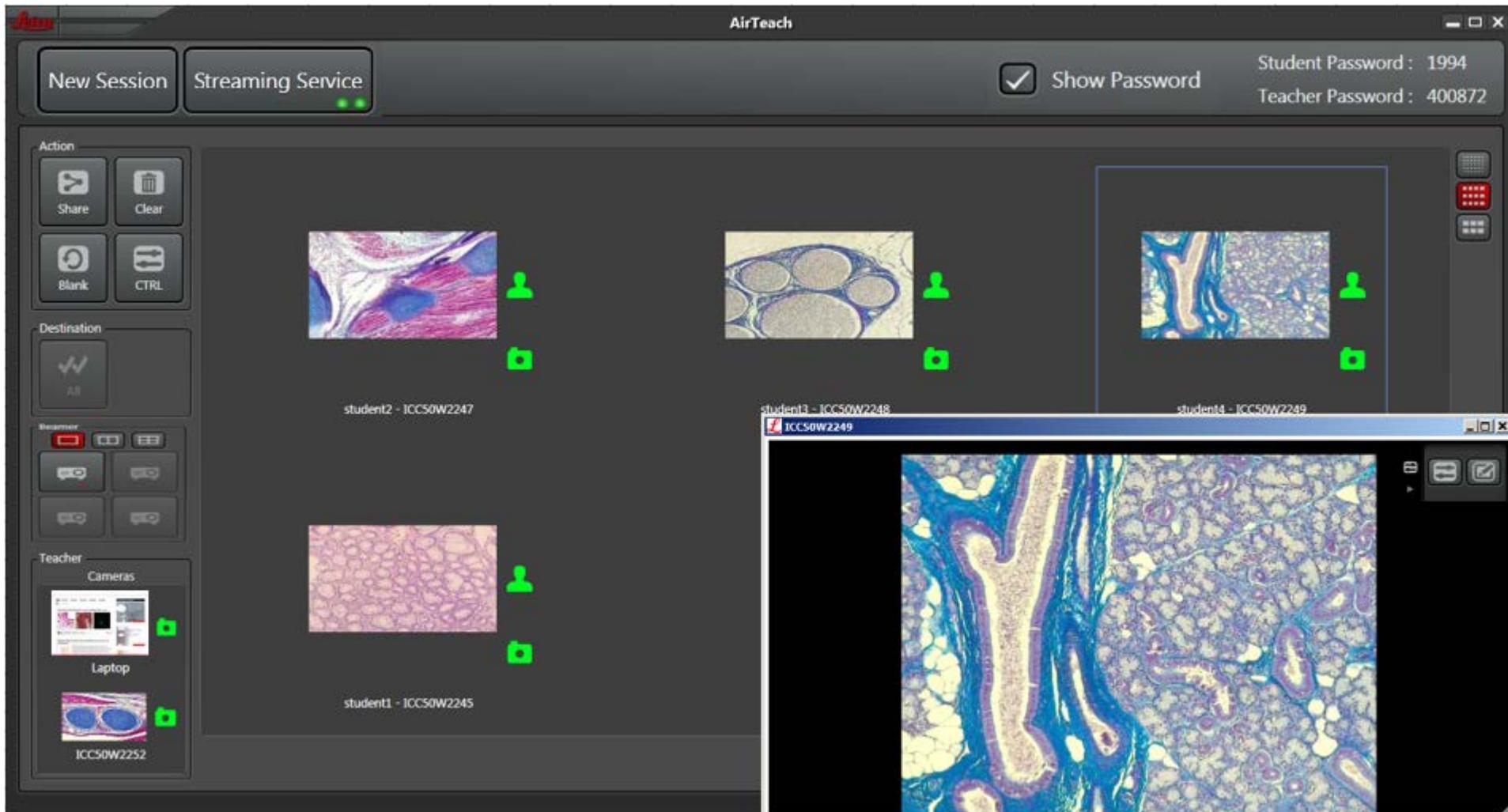
Teacher's Cockpit View

Double click a thumbnail or click Control then a thumbnail for an enlarged view of one of the cameras



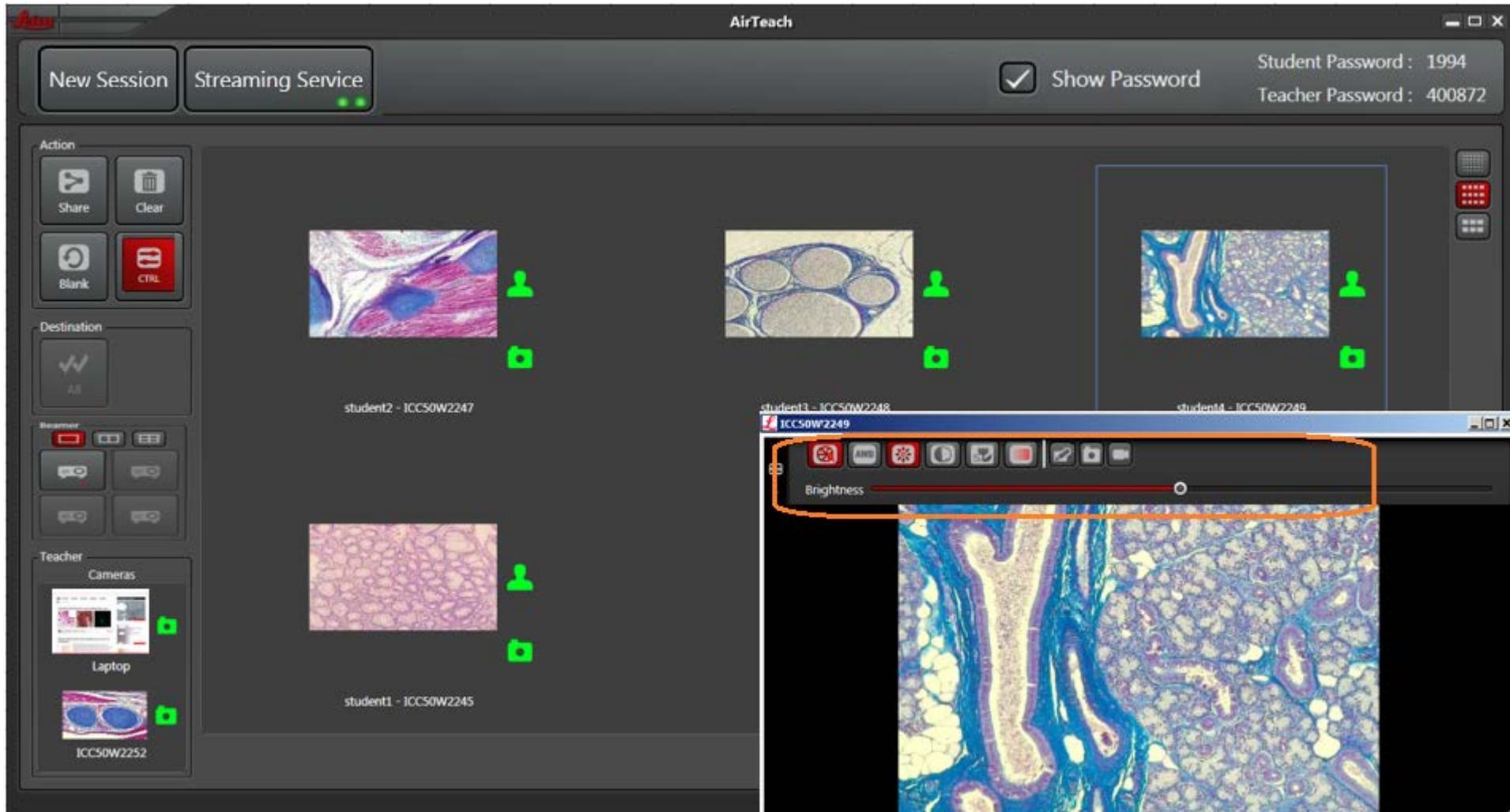
Teacher's Cockpit View

Click top right icon of enlarged image to select camera settings or annotation



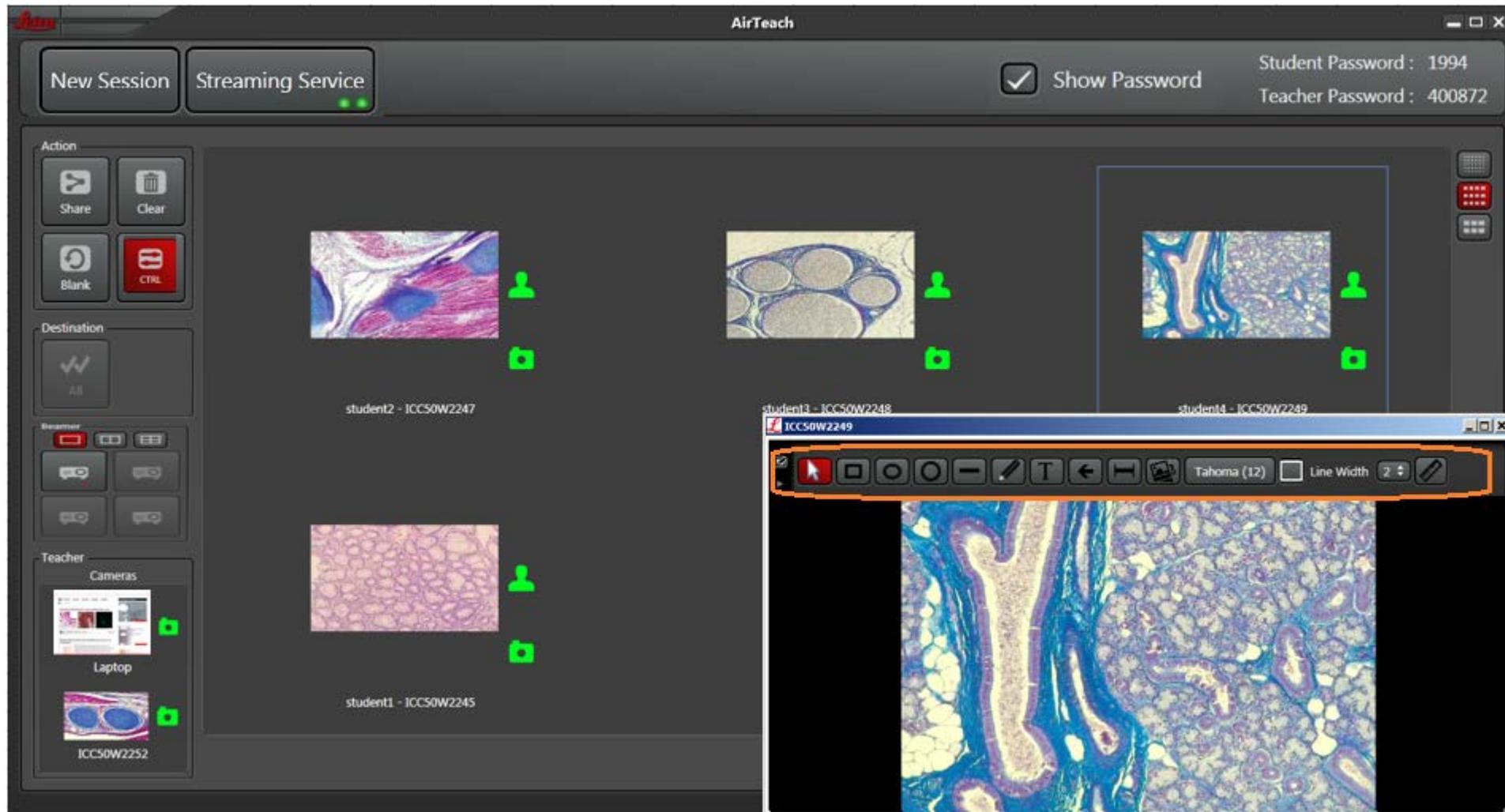
Teacher's Cockpit View

Camera settings allows control of the selected camera



Teacher's Cockpit View

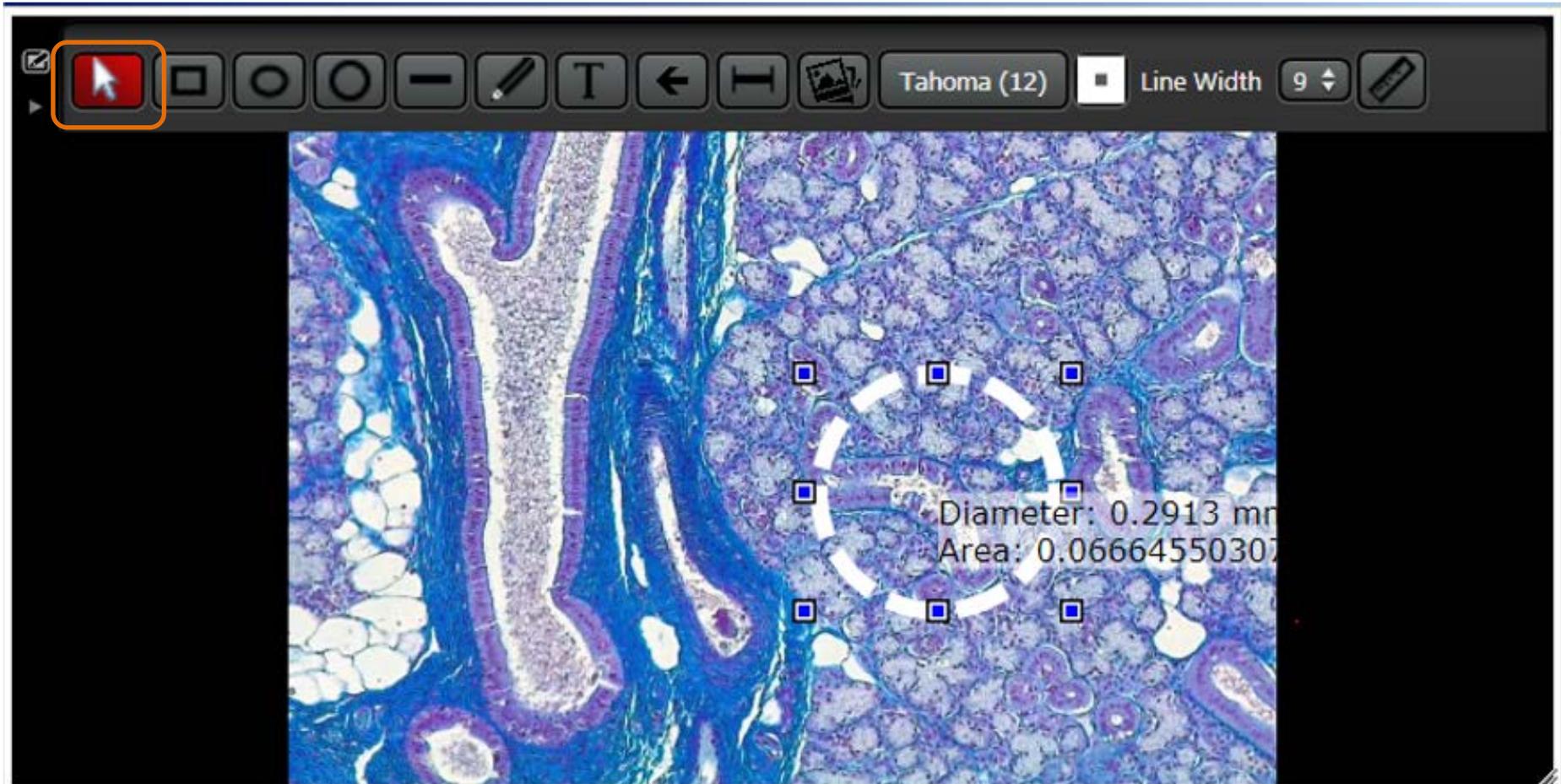
Annotations allows shapes, free hand, and measurements
Annotations will be projected but not shared to mobile devices



Note: Annotations are shown on the projector only when a single image is selected for full screen projection

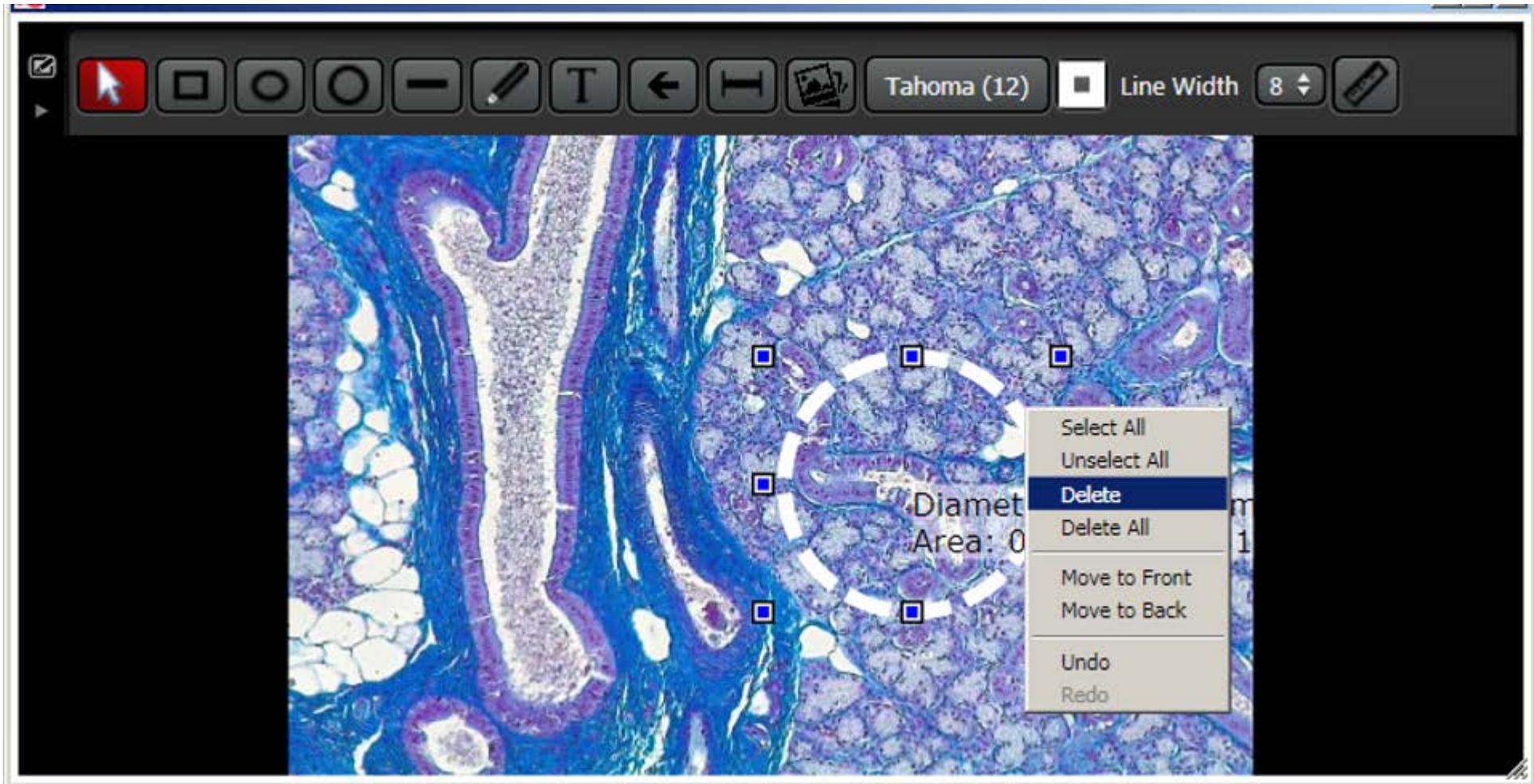
Teacher's Cockpit View

To select an annotation for movement or size change, click the up arrow icon then click the annotation



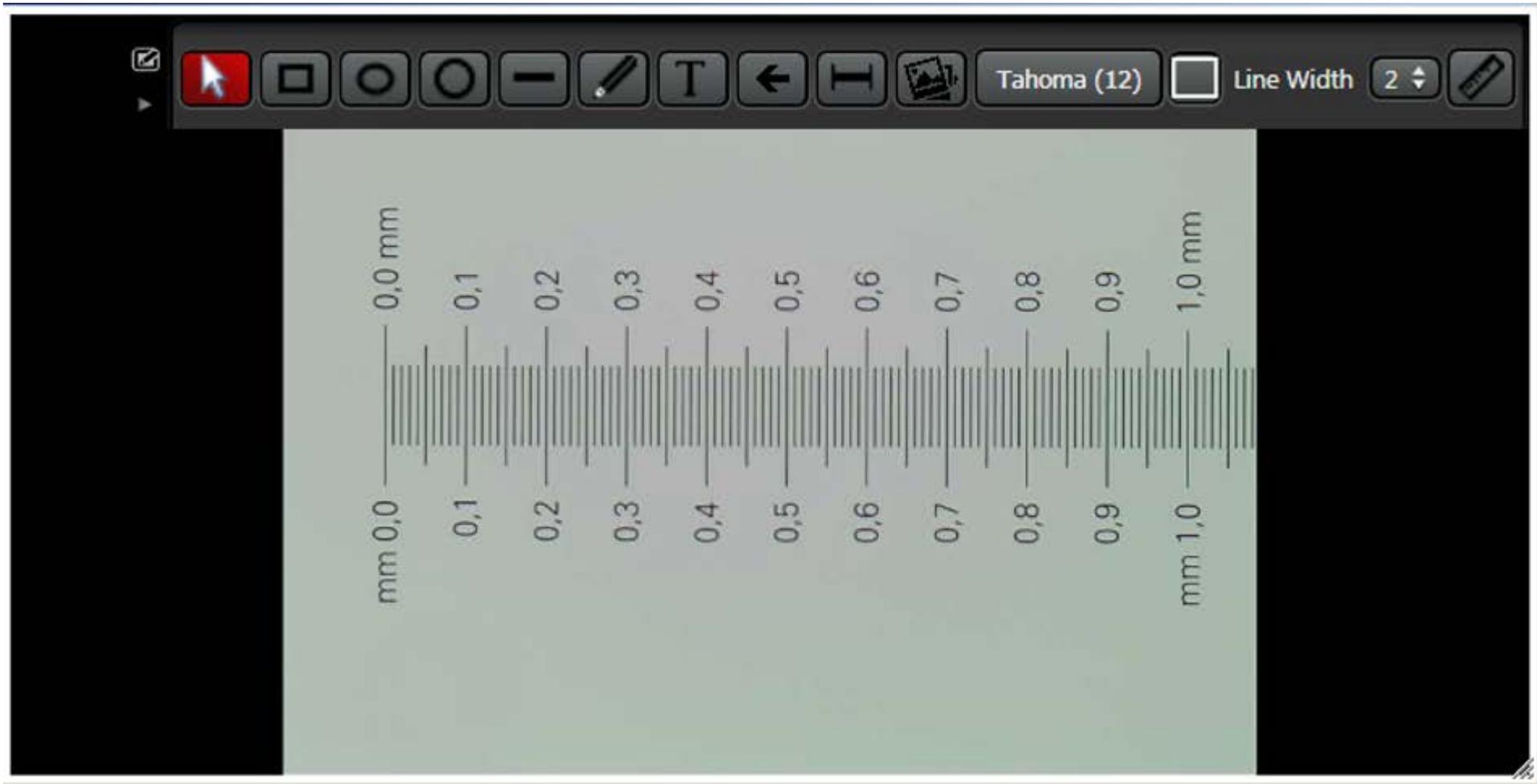
Teacher's Cockpit View

To Delete an annotation, right click or tap, hold, then release the annotation. Then select "delete" from the drop down



Teacher's Cockpit View

Measuring



Place a known dimension in the field of view

Teacher's Cockpit View

Measuring



Click the measurement icon and stretch the line across the known dimension.
Divide the known dimension by the dimension shown to arrive at the calibration
factor: in this case $1/109.8024 = .0091$

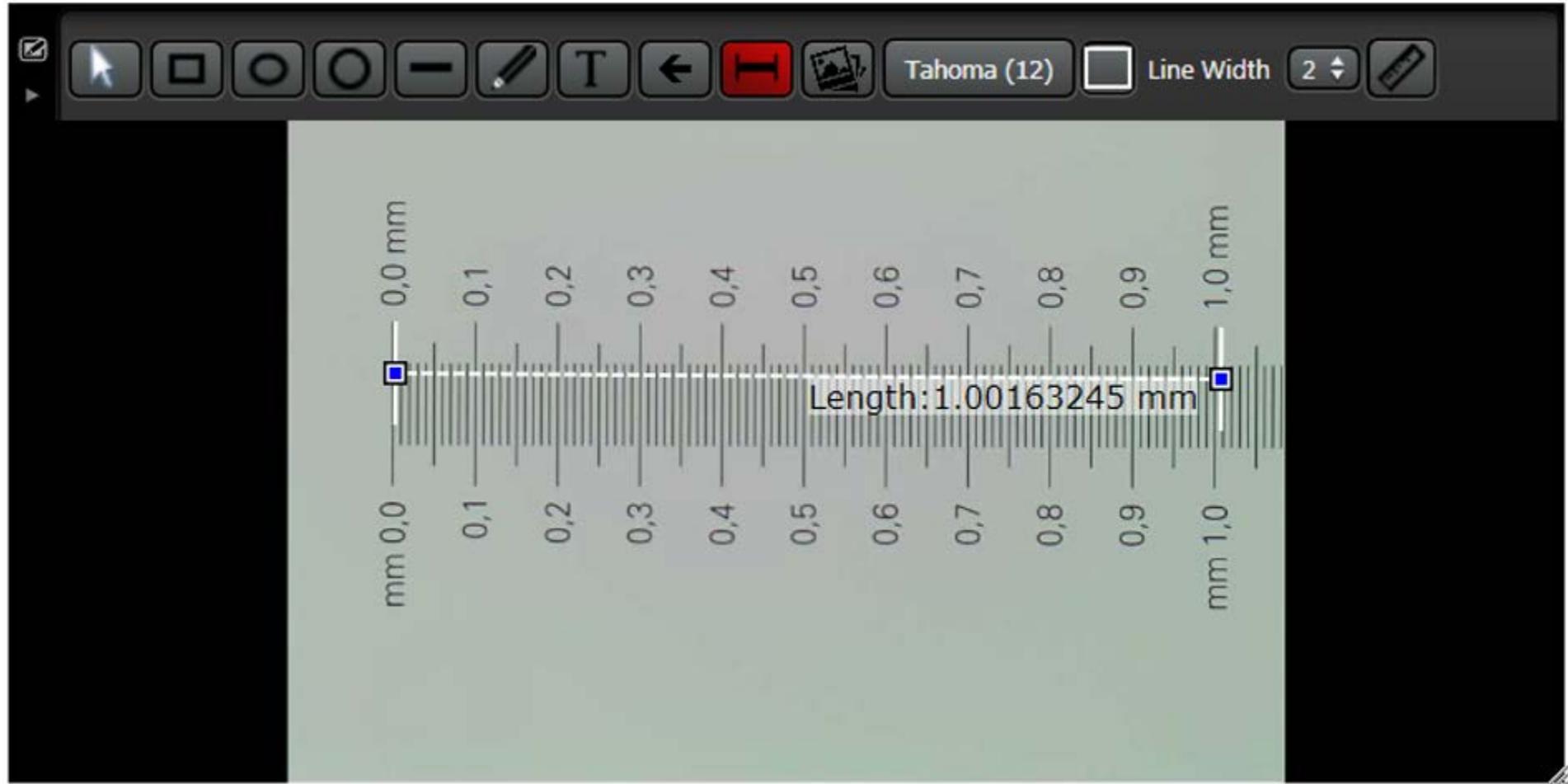
Teacher's Cockpit View

Measuring



Click the Calibration icon and input the calibration factor. For decimals, start with a “0” before the decimal point. Then select units of measure and click “OK”.

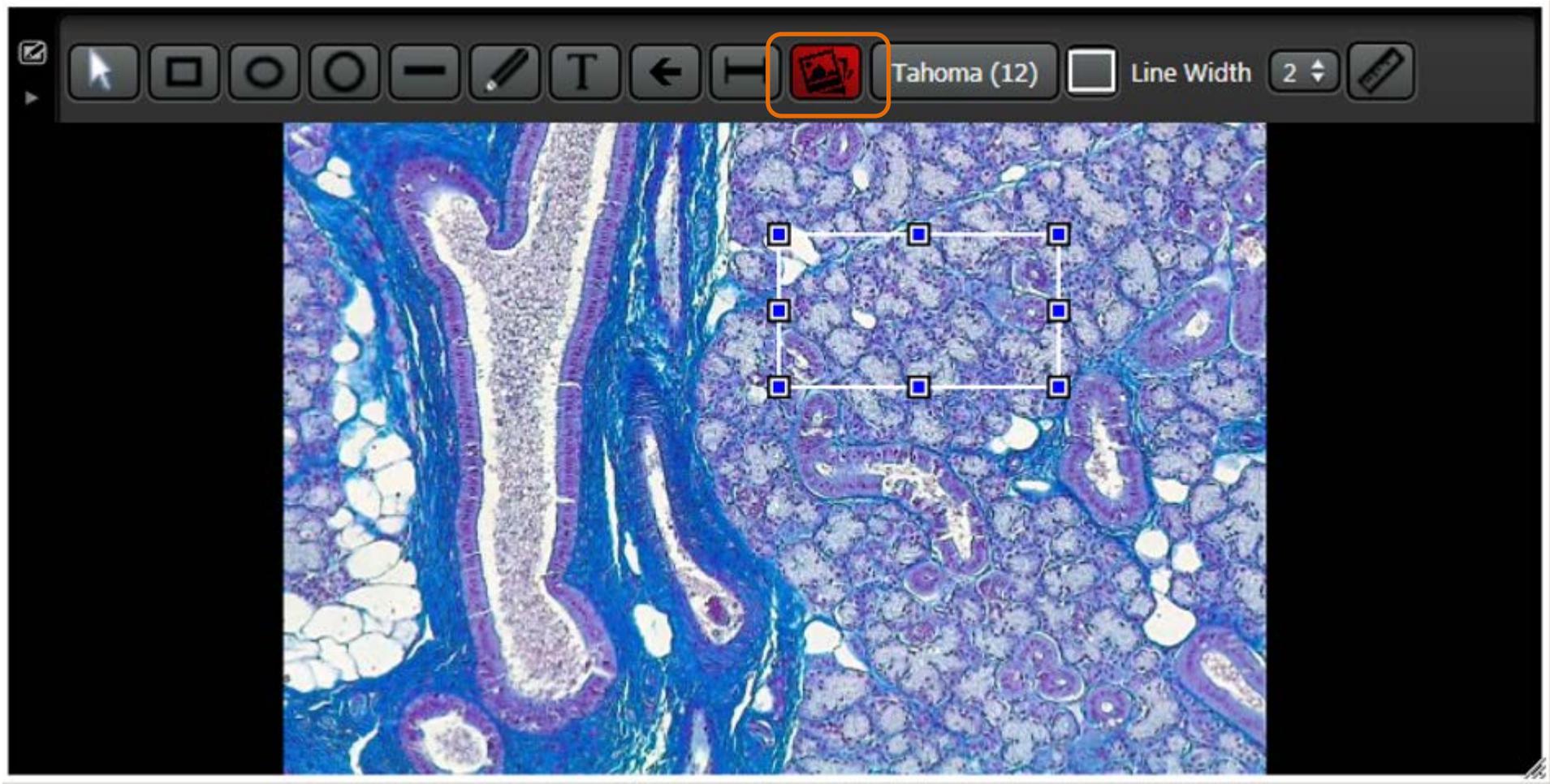
Teacher's Cockpit View Measuring



Delete the original measurement used to create the calibration factor and proceed to make measurements with correct results. The factor applies only to the selected camera and will be remembered after AirTeach is shut down. Calculate a new factor after changing magnifications.

Teacher's Cockpit View

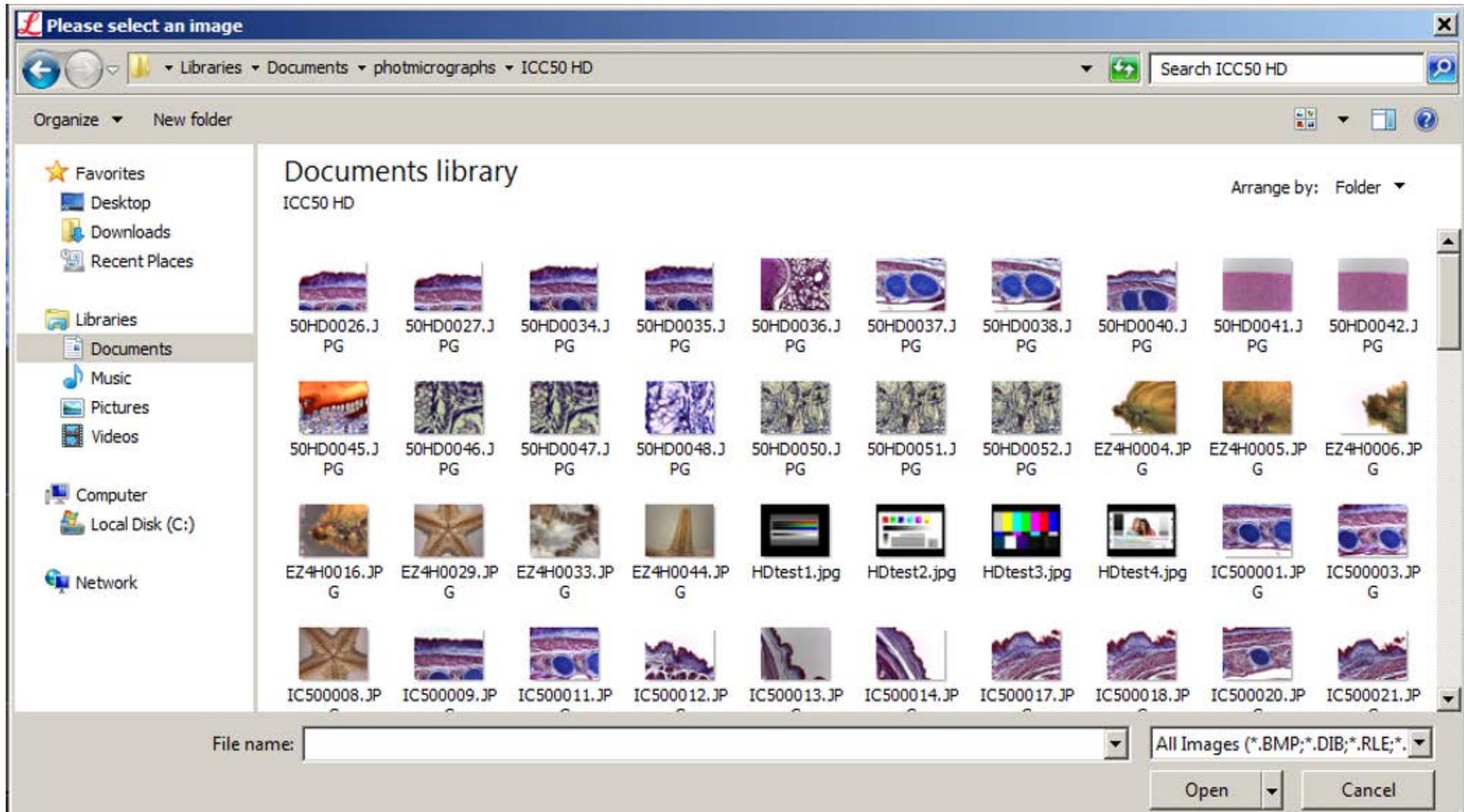
Inserting an image



Click the Image icon and draw a region of interest

Teacher's Cockpit View

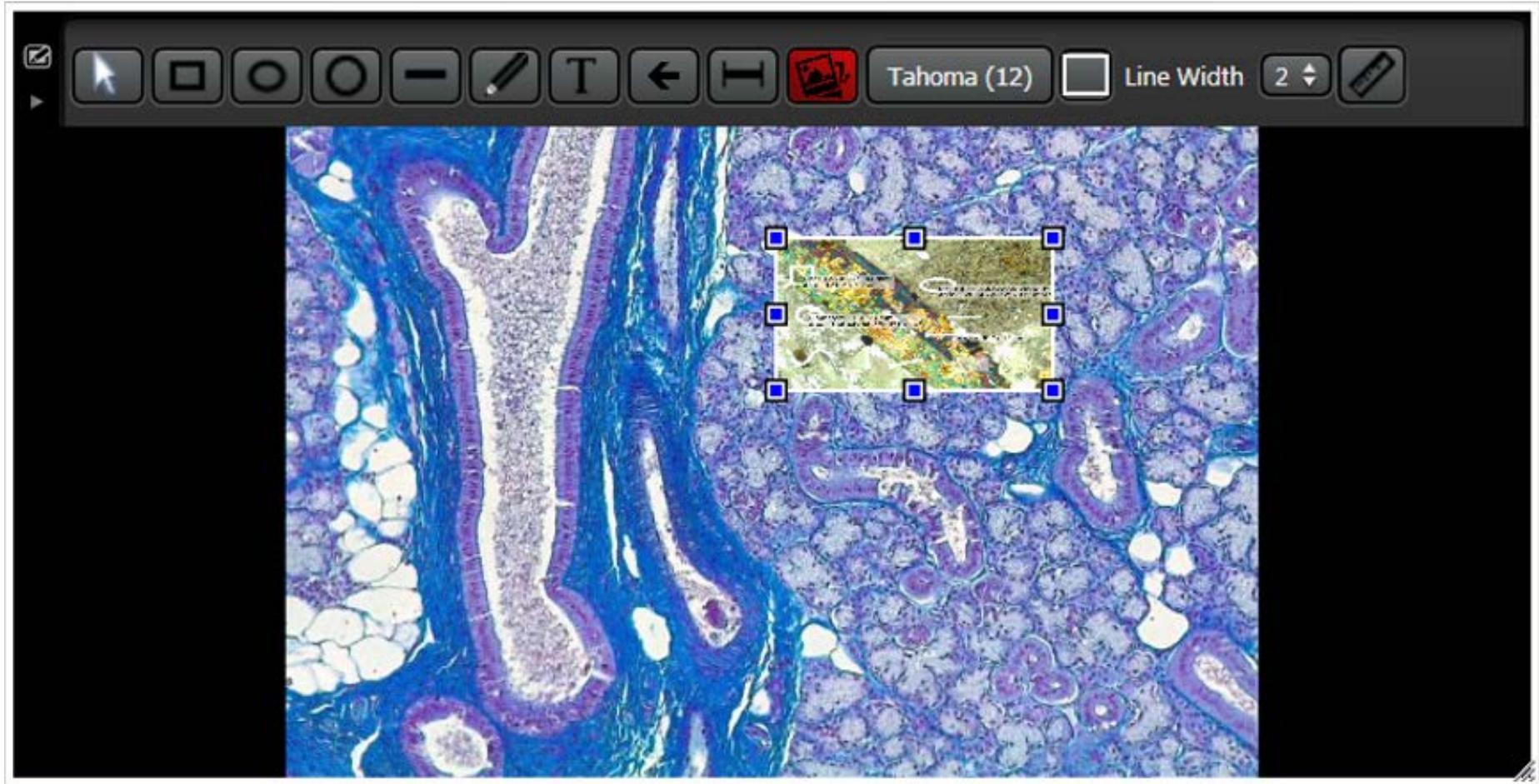
Inserting an image



Your PC browser will pop up from where you can select an image

Teacher's Cockpit View

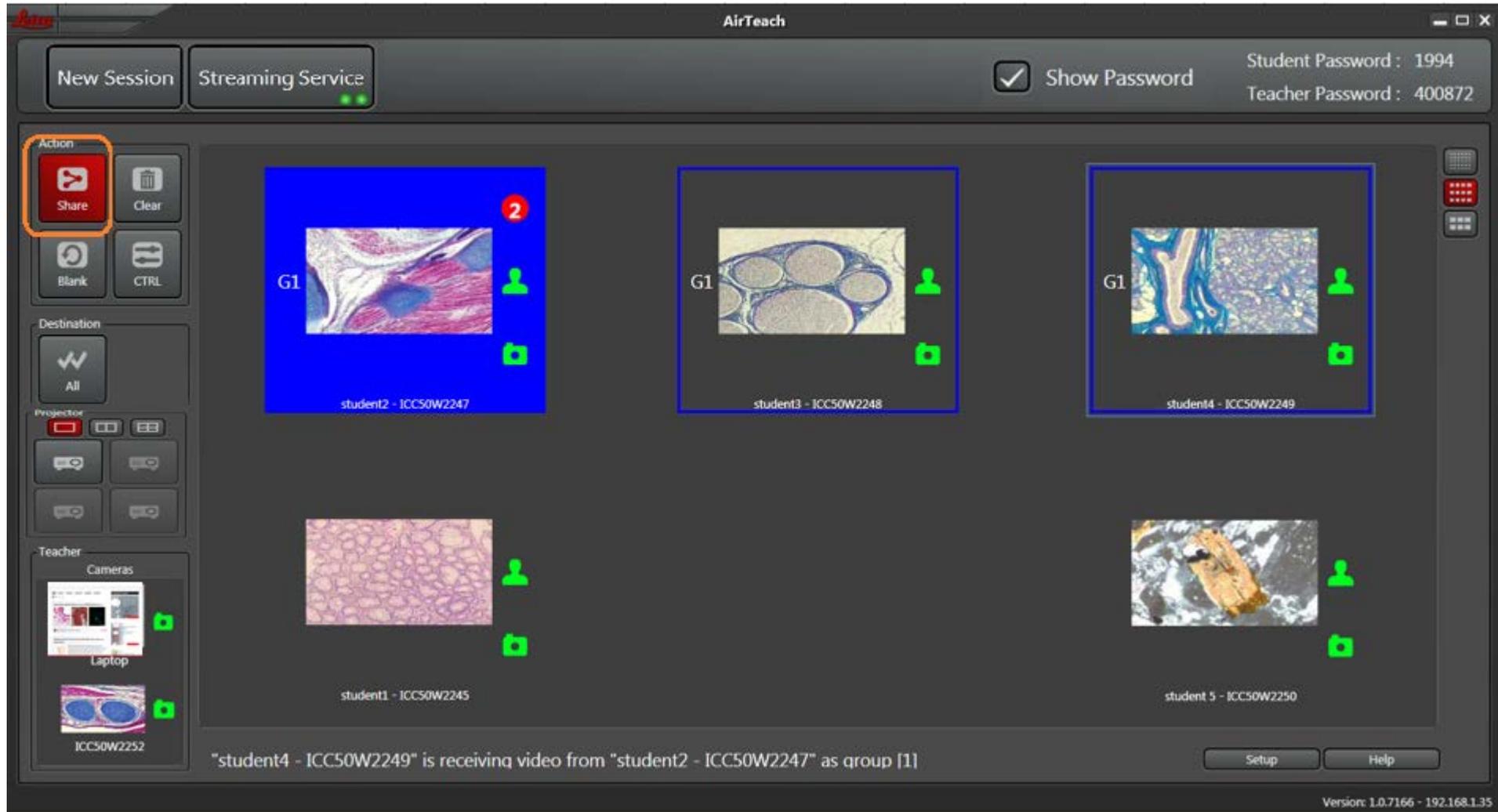
Inserting an image



Double click on the image and it will be inserted.

Teacher's Cockpit View

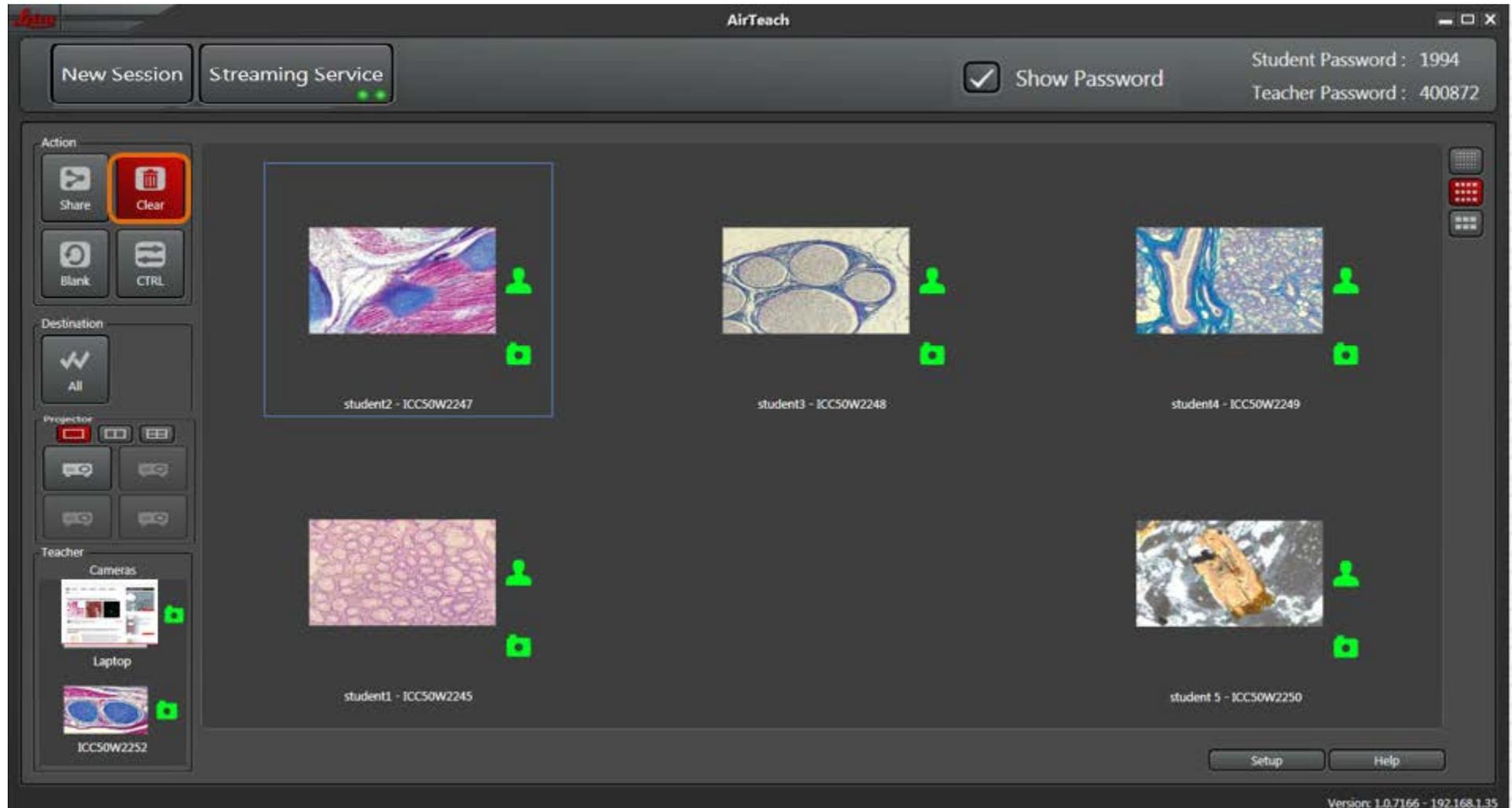
Click "Share" then a thumbnail of an image you want as a source to be shared followed by which student's devices you want the image to appear or "Share to All"



Note: To set up a second group, wait until Share icon goes dark and then click Share again. Teachers Laptop can also be shared.

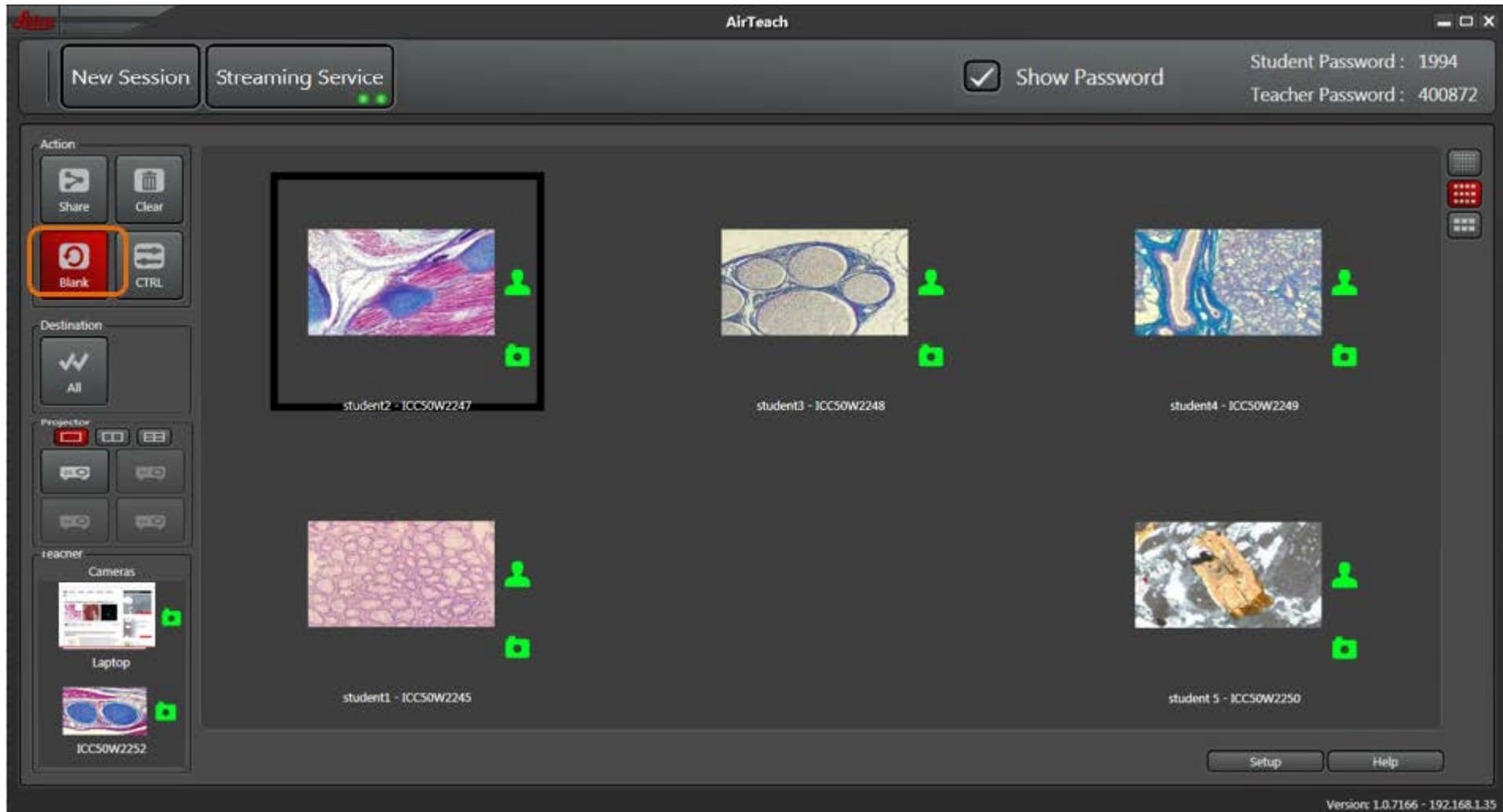
Teacher's Cockpit View

Click "Clear" and the source thumbnail to clear the sharing



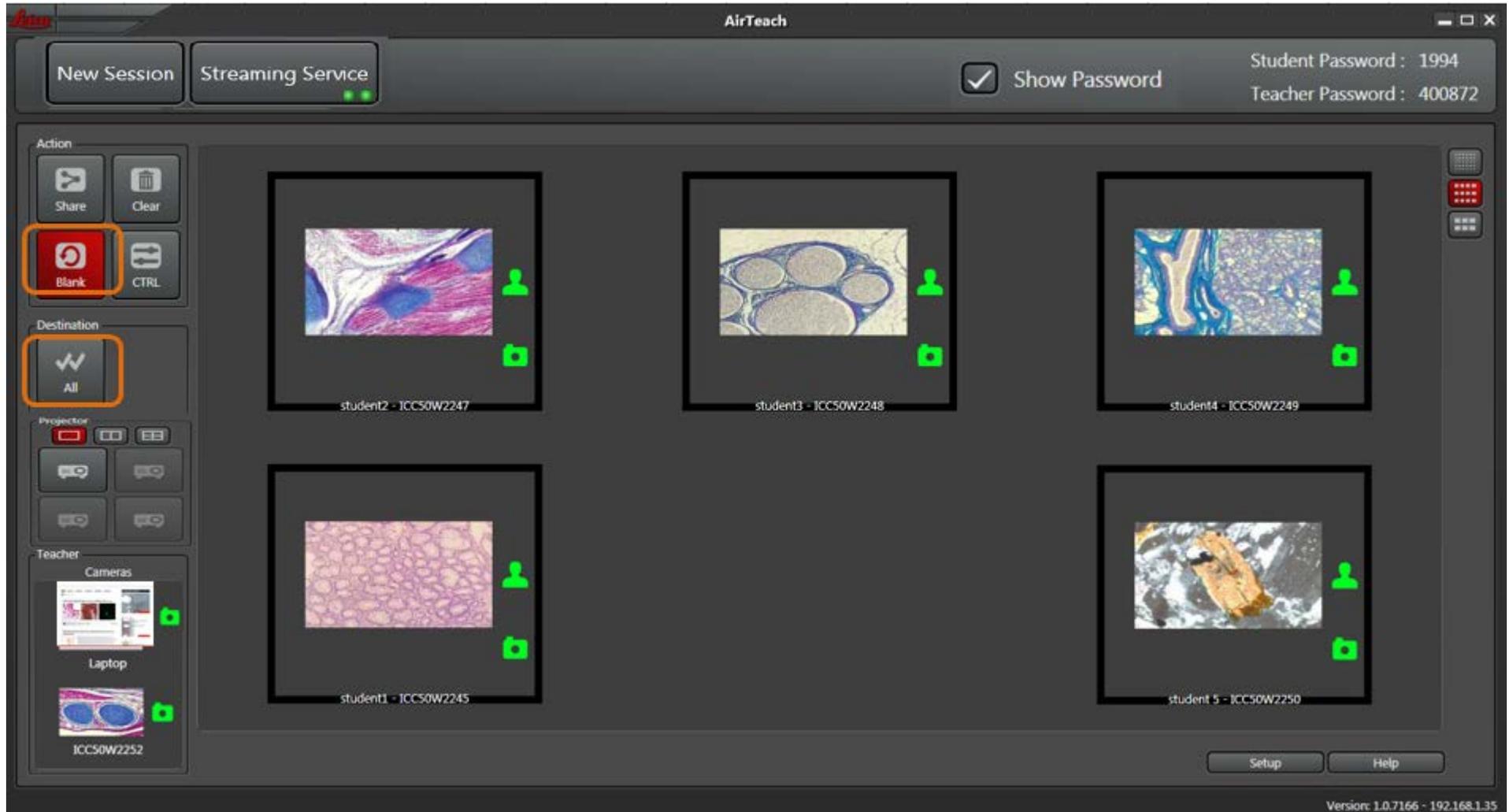
Teacher's Cockpit View

Click "Blank" then a thumbnail of a student for which you want to blank his device



Teacher's Cockpit View

Click "All" to blank all devices



Teacher's Cockpit View

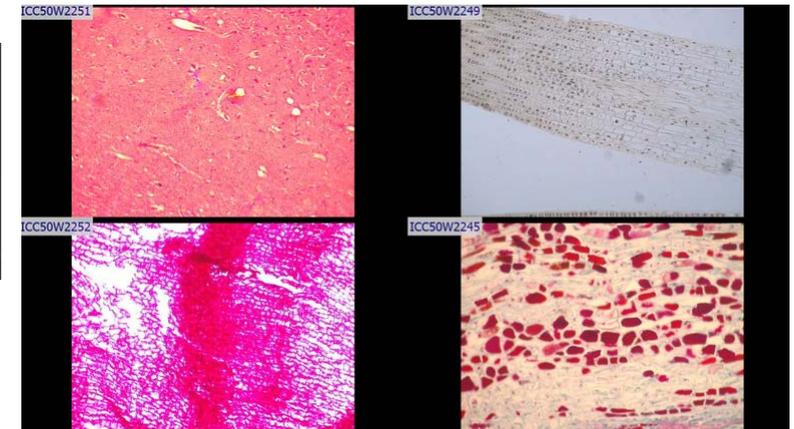
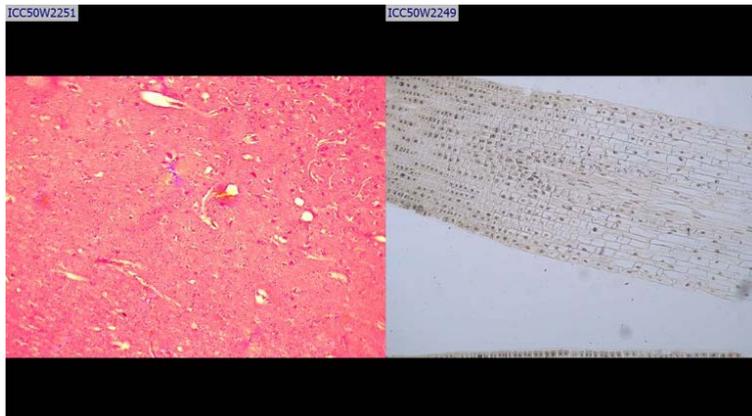
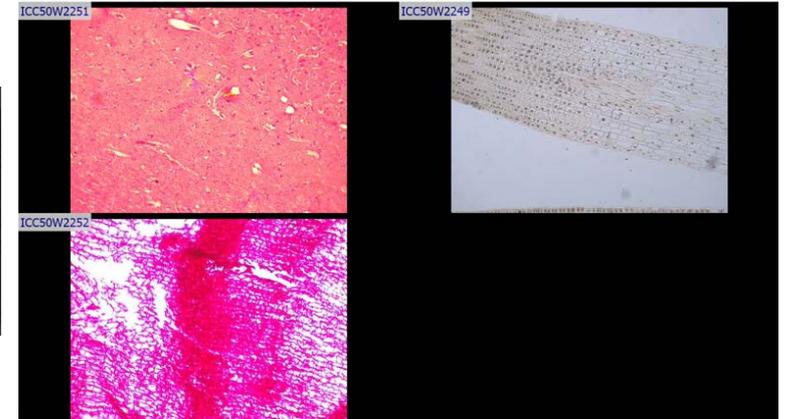
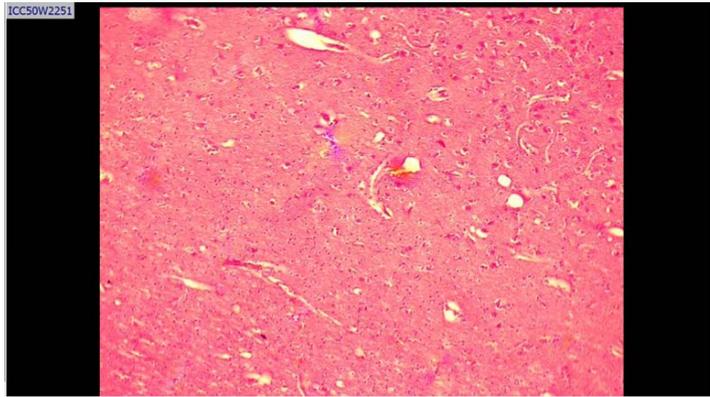
Select number of images to project (1, 2, or 4),
click the projector position, then click the thumbnail you
want to project



Note:

- The AirTeach PC needs to be configured with an “extended screen” in order for the Projector to show the intended images
- If there is no projector connected, or no power to the projector, or the AirTeach PC was not configured with extended screen, the projector panel will not appear

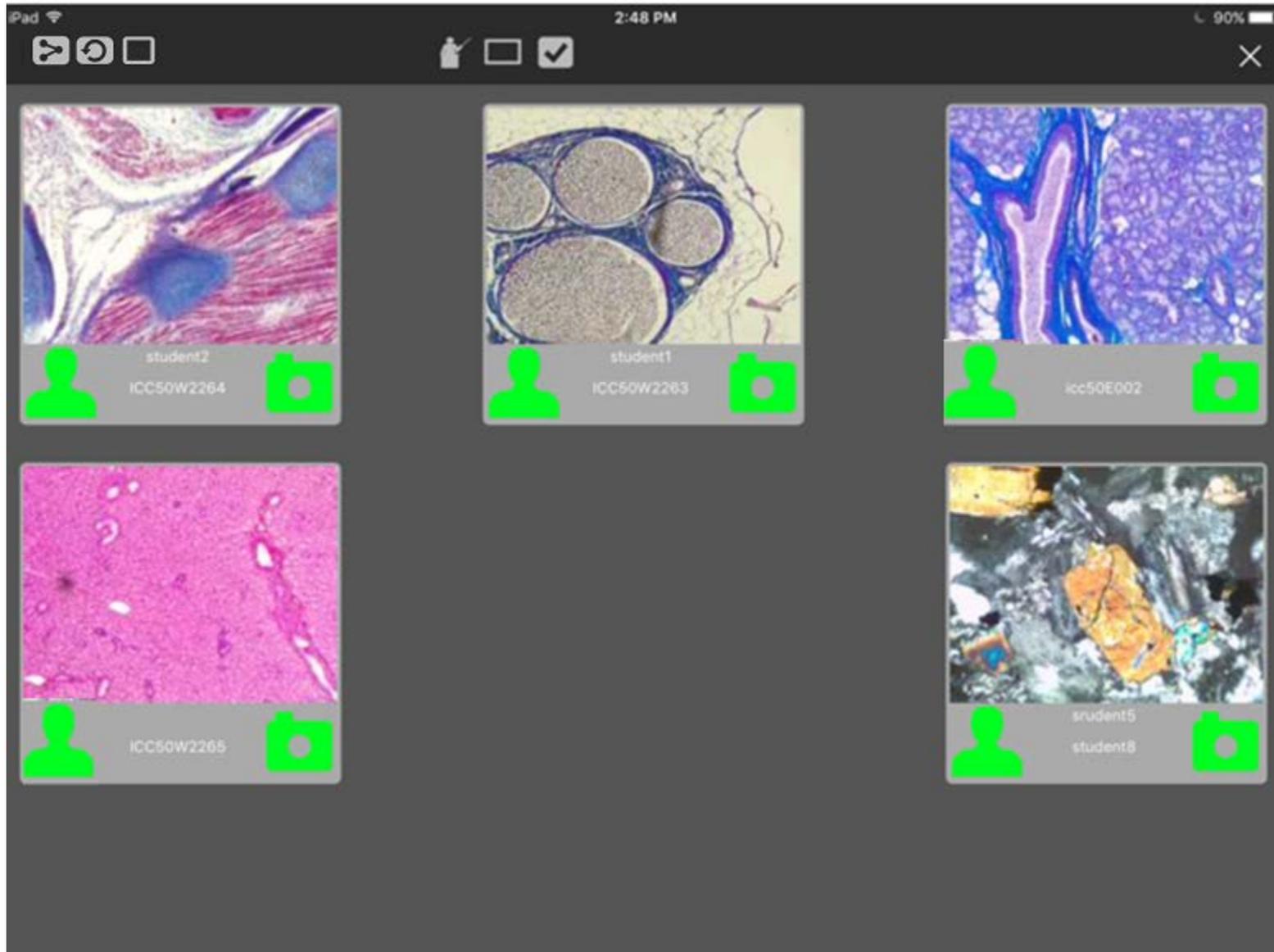
As Seen on Projector



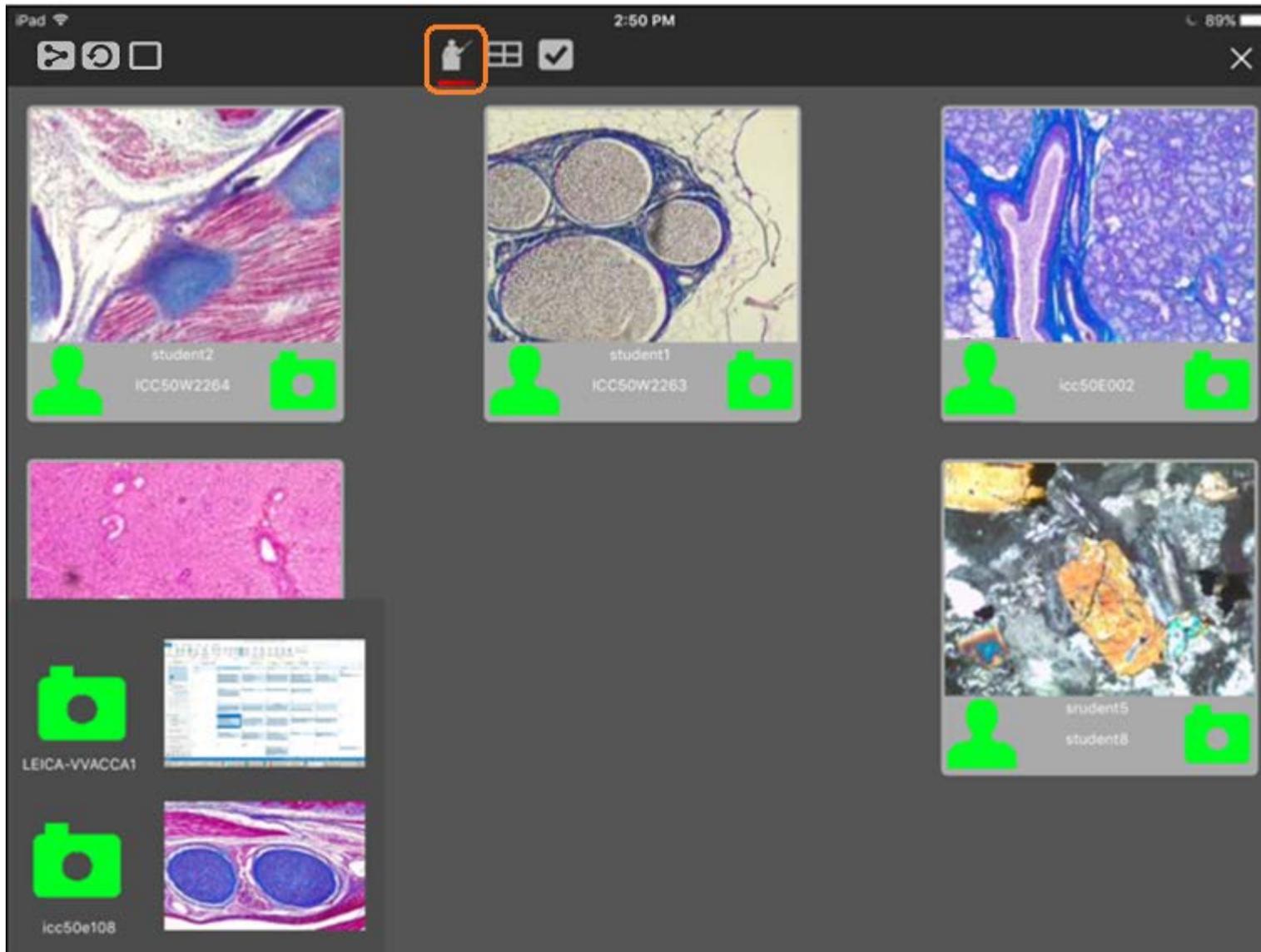
Teacher Control on Mobile Device



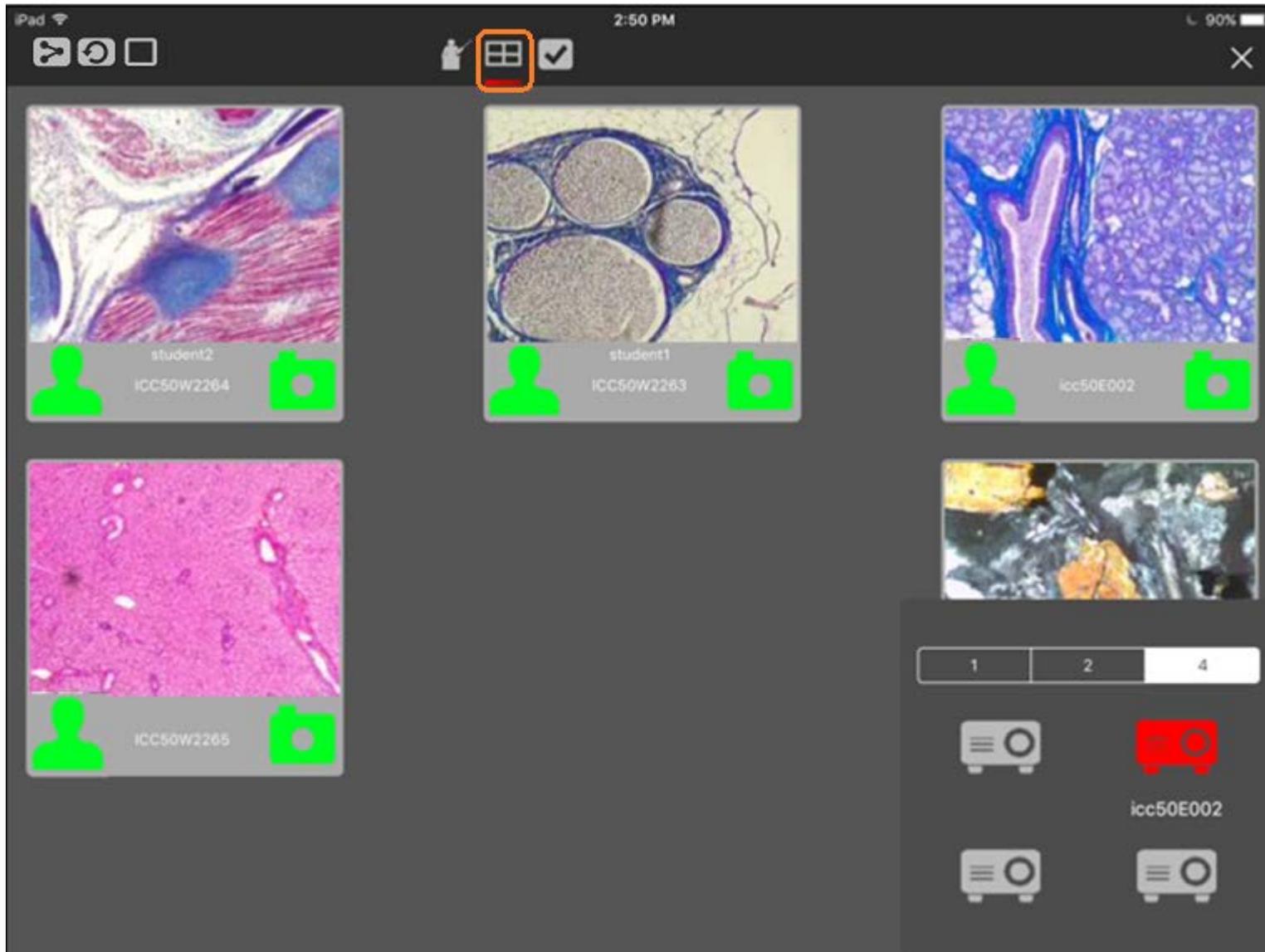
AirTeach on Mobile Device – Classroom View



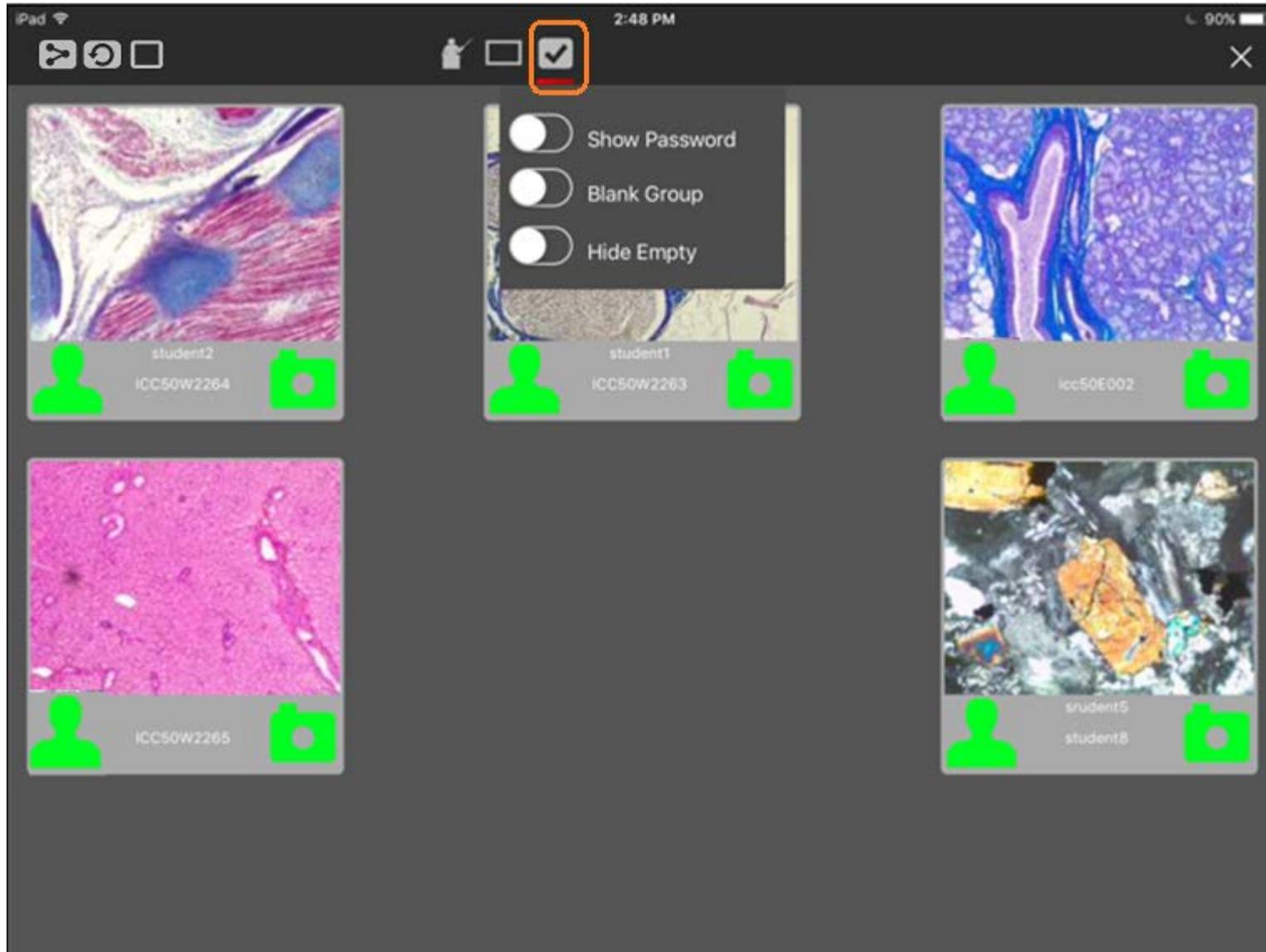
AirTeach on Mobile Device – Select Teachers Images



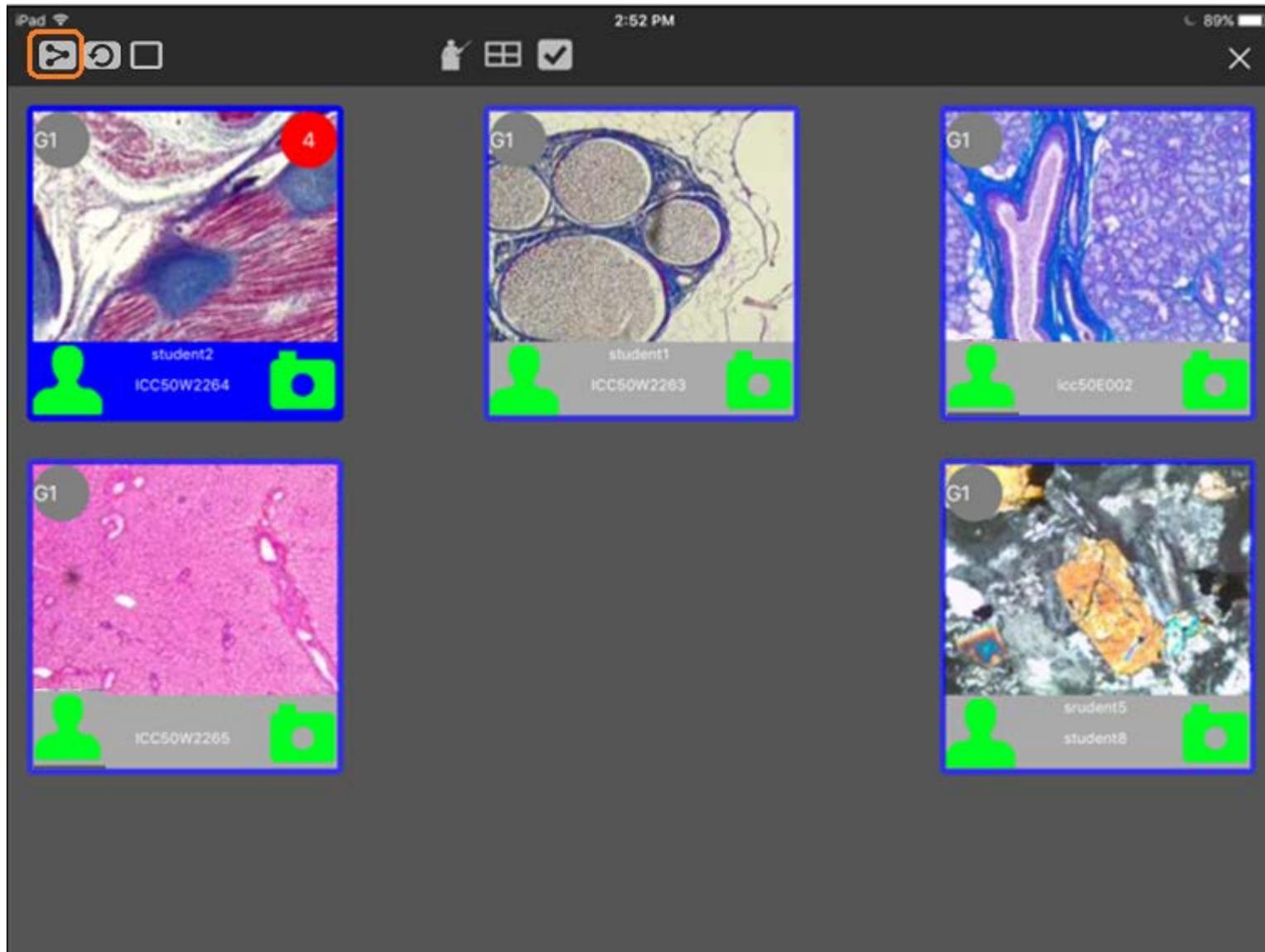
AirTeach on Mobile Device – Projector Control



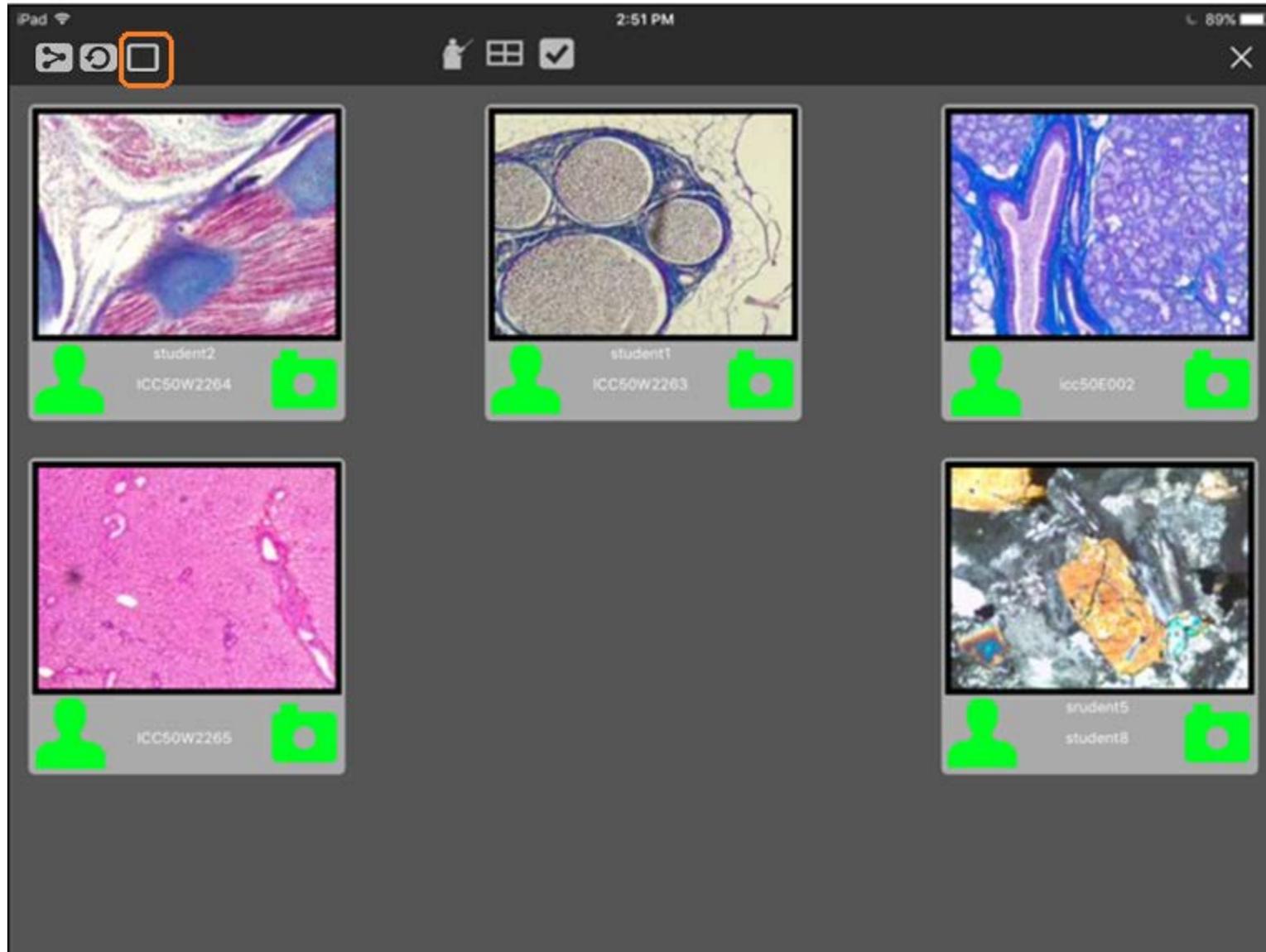
AirTeach on Mobile Device – Show Password, Blank Group, Hide Empty positions



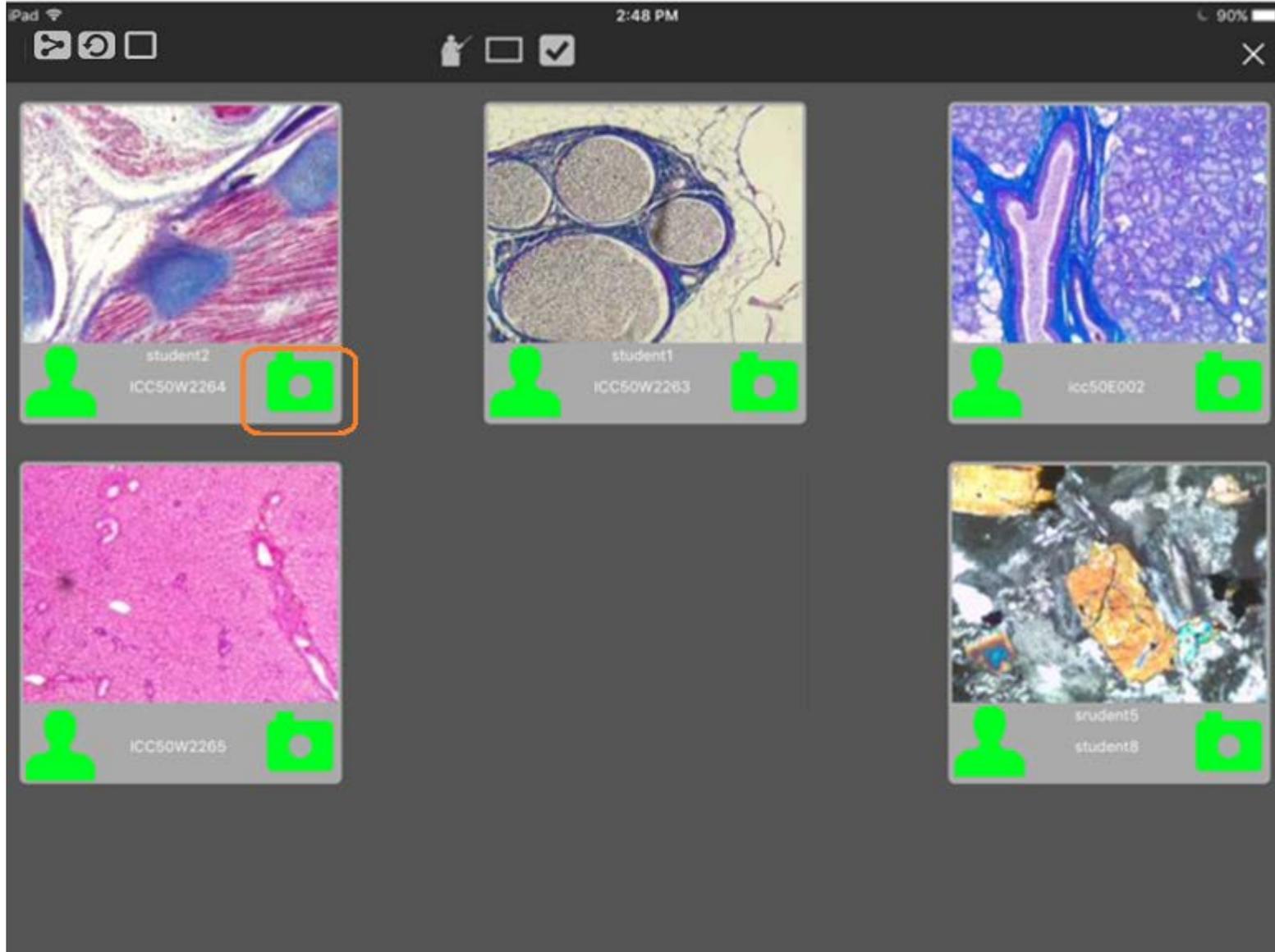
AirTeach on Mobile Device – Sharing



AirTeach on Mobile Device – Blanking

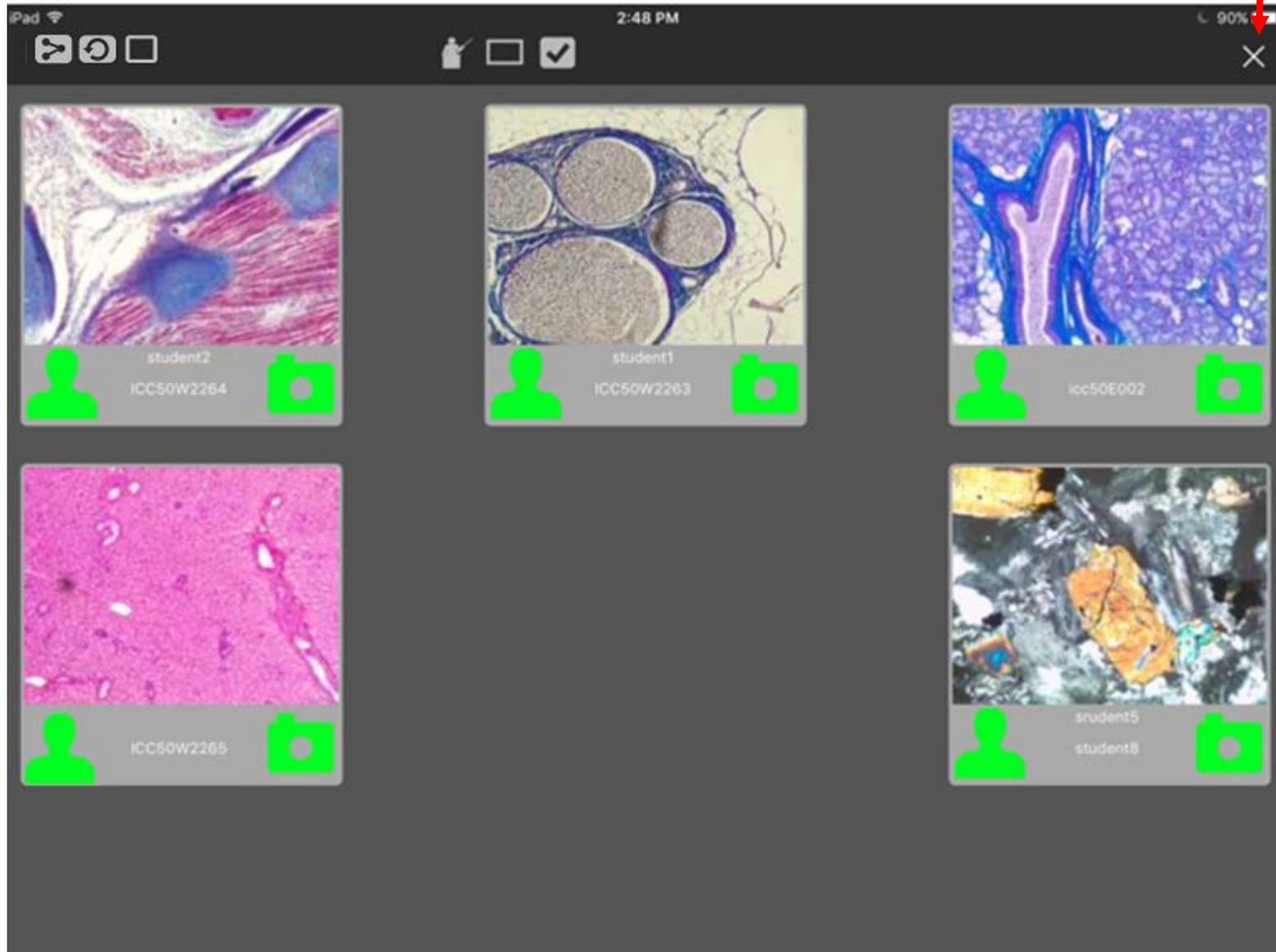


AirTeach on Mobile Device – Tap any Camera Icon to get full screen view of that thumbnail



AirTeach on Mobile Device – Classroom View

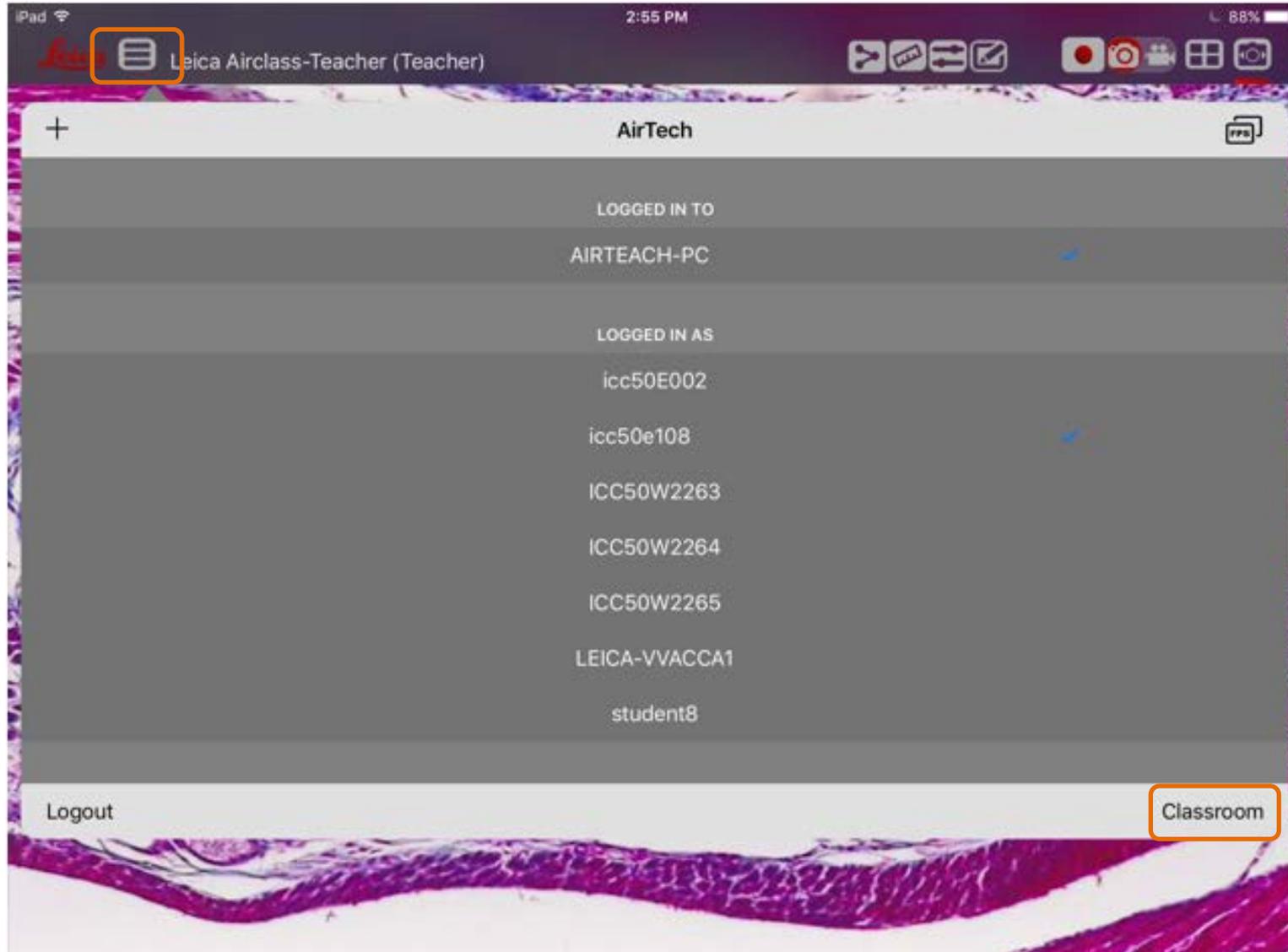
Return to Teachers Camera View



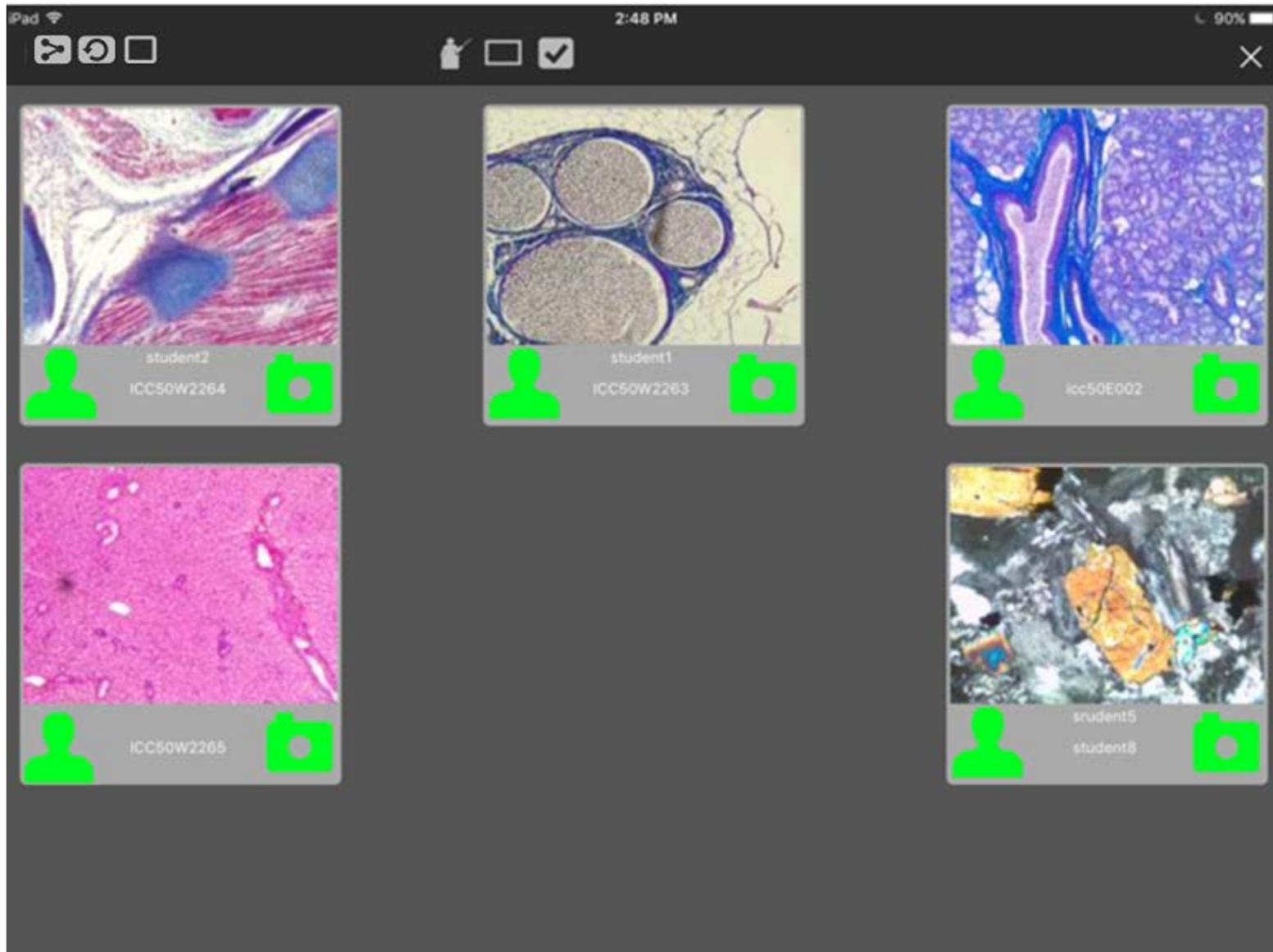
AirTeach on Mobile Device – Teachers Camera View



AirTeach on Mobile Device – Select Camera List view and tap “Classroom” to return to Classroom Thumbnail view



AirTeach on Mobile Device – Return to Classroom Thumbnail View



Trouble Shooting

- Login Button not showing on AirLab
 - Be sure AirTeach is Launched
 - Click Rebroadcast Services in Setup from Teachers Cockpit view
 - Click Streaming Service on Teachers Cockpit View
- User unable to login to AirTeach
 - Ensure tablet is connecting to the same network as AirTeach.
 - Ensure correct IP address is selected in the login page (Server Section)
 - Ensure Camera Name, password is input correctly
- Camera unable to connect to existing session
 - Restart Camera
 - Restart AirClass
 - Restart AirTeach Session after camera is Switched on - Click on New Session button, Click on Streaming Service
- Teacher or Student PC not showing
 - Auto Proxy was checked during AirClass Installation, Uninstall and reinstall AirClass but keep the default unchecked Auto Proxy

- IP Address of AirTeach PC shown as “0.0.0.0”
 - Ensure Firewall is turn off
 - WiFi connection of the PC should be disabled
 - Ensure Internet Protocol Version 6 (TCP/IPv6) is selected
(Go to Open Network and Sharing Center >> Change adapter setting >> Right click select Properties >> ensure Internet Protocol Version 6 is checked)
- Camera connected to network not discovered on Air Teach
 - Ensure Lan cable is connected (Light blinking on the camera Lan connection port)
 - Ensure Lan Mode is selected on camera
 - Restart Camera
- “Show Password” does not appear
 - Check Projector is connected and Projector Power is on
- Projector Control Panel does not appear
 - Check Projector is connected and Projector Power is on
 - Check AirTeach PC is configured for extended screen

Leica Microsystems (Schweiz) AG · Max-Schmidheiny-Strasse 201 · 9435 Heerbrugg, Switzerland
T +41 71 726 34 34 · F +41 71 726 34 44

www.leica-microsystems.com

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