

ViZion DR + Install Guide

Opal UAI v.2.3.4.x



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Chapter 1

ViZion DR + Installation Guide

Begin by taking an inventory of the required equipment

- DR Unit
- Acquisition PC
- Hardware

INVENTORY: DR UNIT

1. Identify DR Unit.

DR Unit will be shipped as indicated in *Figure 1*

Each box contains (1) complete DR Unit to coordinate with *either* a wall or table Bucky.

Therefore, if *both* a wall and table Bucky will be assembled, there will be 2 boxes shipped, (1) DR unit for each Bucky assembly.



Figure 1: Shipping Box

2. Open the box and verify contents of each box

Notice detector box will contain 2 sub-boxes upon opening. *Figure 2*

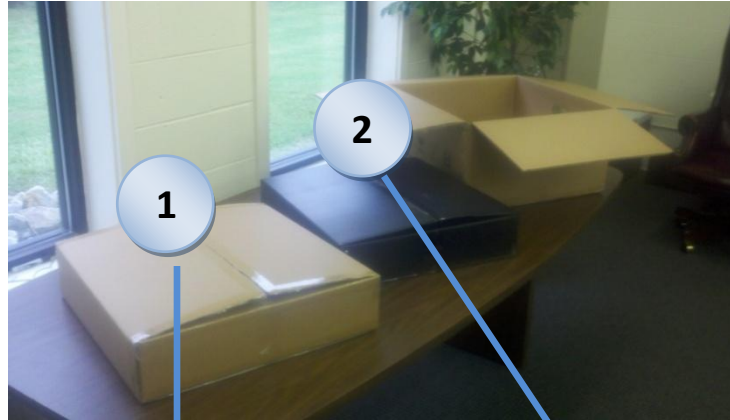


Figure 2: Sub Boxes



Power Supply & Cables

- Sync Cables (Grey)
- Power Supply Cable
- Network Card & CD (Manufacturers Guide)
- Network Cable (White)
- Power Supply Cable for Panel
- PC to Power Supply Communications Cable

Panel (Black Box)

3. Familiarize yourself with the equipment and supplies in each box.

Panel

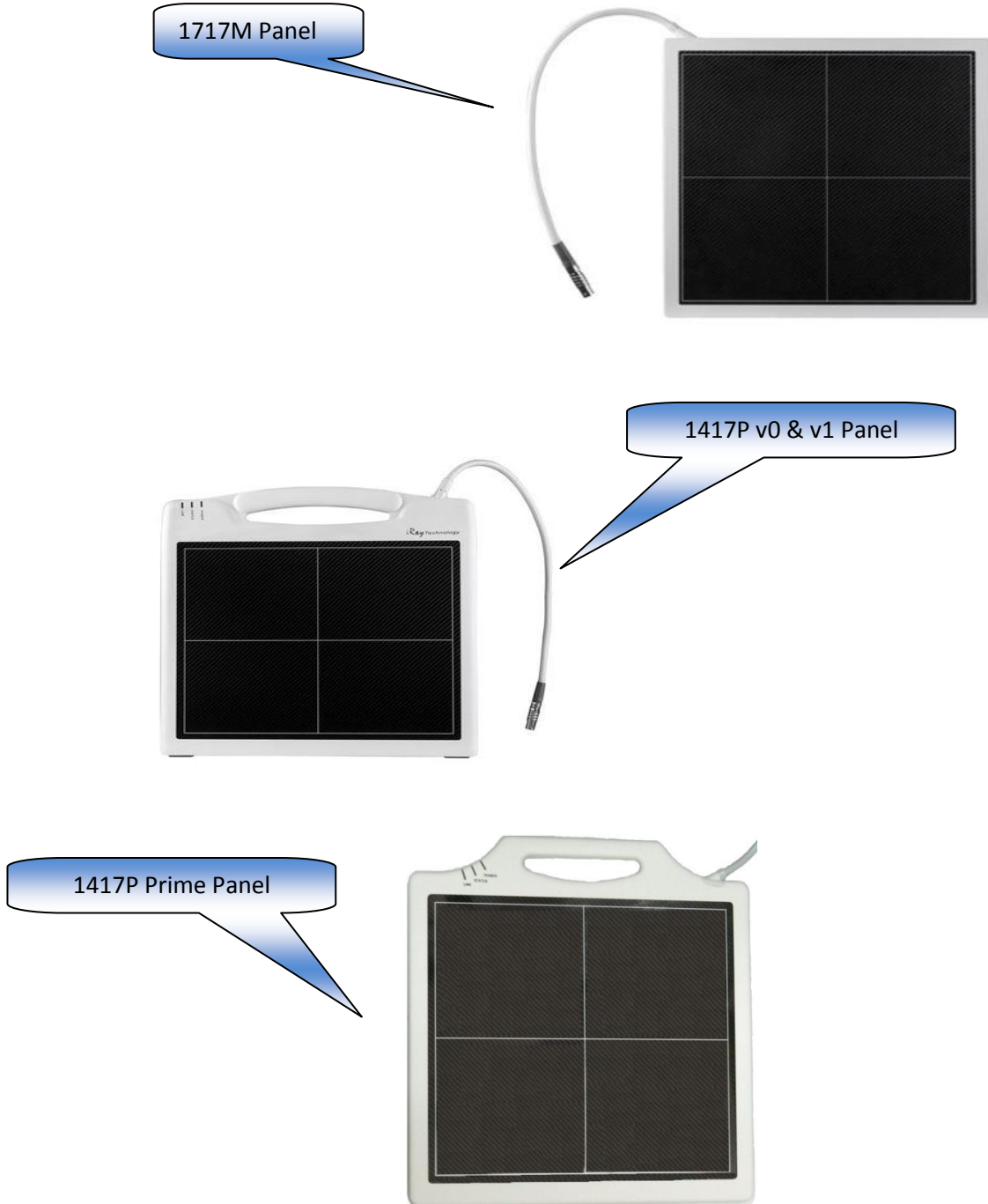


Figure 3: ViZion DR+ Panel versions

Power Supply & Cables



Figure 4: Panel Power Supply plus Power Supply Cables

The white box is the power supply for the panel and its associated power supply cables.

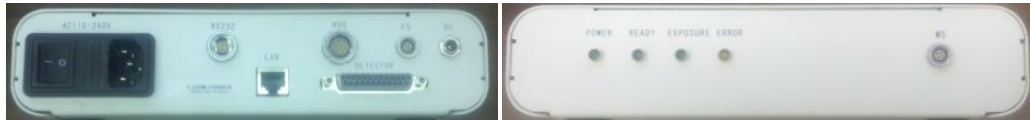


Figure 5: 14X17 Portable Detector Power Supply



Figure 6: 17X17 Detector Power Supply

✓ **Synchronization Cables**



Figure 7: Synchronization Cables, Network Cable, Power Supply Cable plus CD

✓ **Network Cable**

- Ethernet CAT5E/CAT6 1.0Gbps capable network Cable
- Plug cable from ViZion DR + power supply to 1.0Gbps capable port on acquire station



Figure 8: Network Cable

✓ **Serial Command Cable**

Plug cable from ViZion DR + power supply RS232 port to Acquire Station serial RS232 adapter. The serial command cable is not needed for the 1417P Prime model of panel.

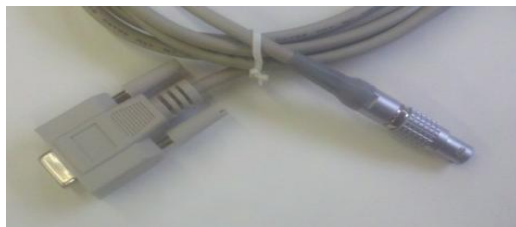


Figure 9: Serial Command Cable

✓ **Parallel Tether Cable**

Plug cable from ViZion DR + power supply detector port to detector plate tether cable



Figure 10: Parallel Tether Cable

✓ **Power Supply Cable**

Plug cable from ViZion DR + power supply to 110v wall outlet



Figure 11: Power Supply Cable

✓ **Generator Interface Cable**

This cable is included upon special request **only**



Figure 12: Generator Interface Cable

✓ **Network Card & CD**

Card is preinstalled into the pc.



Figure 13: Network Card & CD

INVENTORY: ACQUISITION PC

- ✓ Verify Laptop includes power supply.
- ✓ Verify Desktop includes: mouse, keyboard, monitor, and power supply.



HARDWARE SETUP

1. Plug in and boot up your acquire station.



Figure 14: Serial Cable

- a. Serial command cable will plug into the ViZion DR + power supply in the round RS-232 port (cable not used for the 1417P prime panel) Figure 14



Figure 15: 9 Pin d-sub

- b. The 9 pin d-sub connector end of the Serial command cable will plug into the acquire station thru the USB / RS232 9Pin converter (cable not used for the 1417P prime panel) Figure 15

2. Plug in the 25 pin D-sub tether cable end to the ViZion DR + power supply in the detector port it is key and will only fit in one way, plug the round end to the detector while lining up the 2 red dots plate. Figure 16

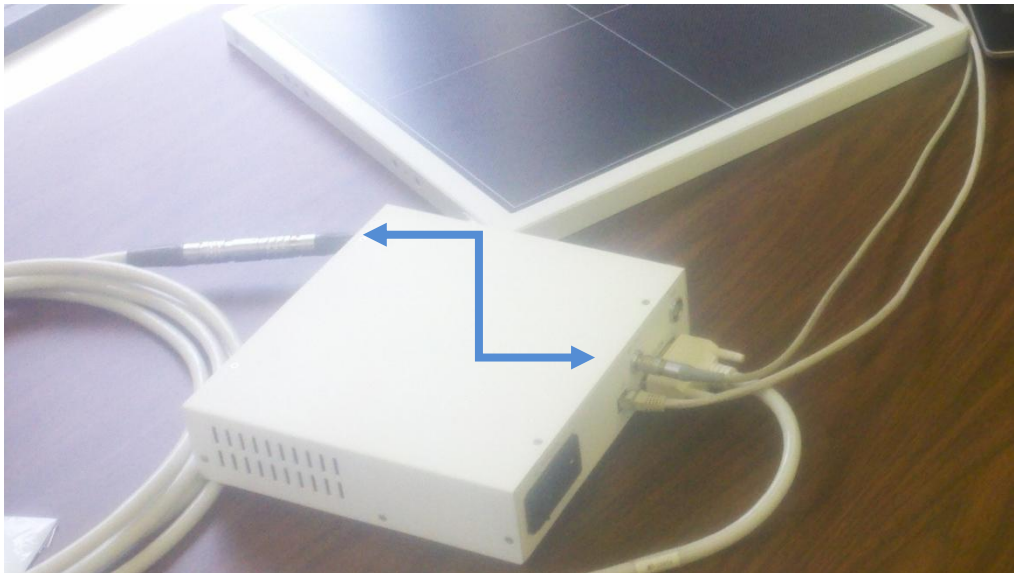


Figure 16: 25 pin D-sub tether cable

3. Connect the PC and the power supply, directly, using a *single network cable* Figure 17

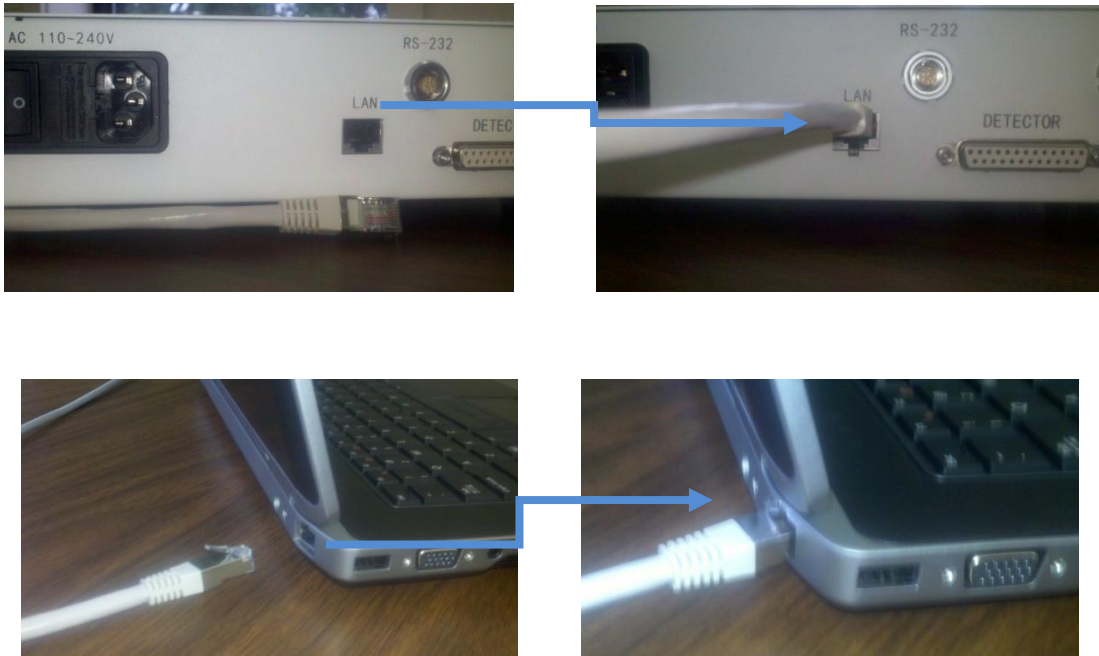


Figure 17: PC Connections

4. Plug the power cable into the ViZion DR + power supply and to a 110v wall outlet, and power on the power supply if everything is communicating properly you will get a power light , a link light and a status light that blinks intermittently.

Chapter 2

ViZion DR + Calibrating Guide

This guide will provide you with detailed instructions on how to calibrate your ViZion DR System once the installation process has been tested and verified.

To Start the Calibration Process

1. Power up the system
2. Start the Acquisition (Scanner) Interface: this can be accomplished using either **a** or **b** below.
 - a. Stand-alone Launcher
 1. Run Command enter `c:\opal\bin\OpalUAIStandalone.exe` – Figure 18
 2. Left click *Launch* on the UAI Session Launcher – Figure 19
 3. Proceed to **STEPS TO CALIBRATE** page 4

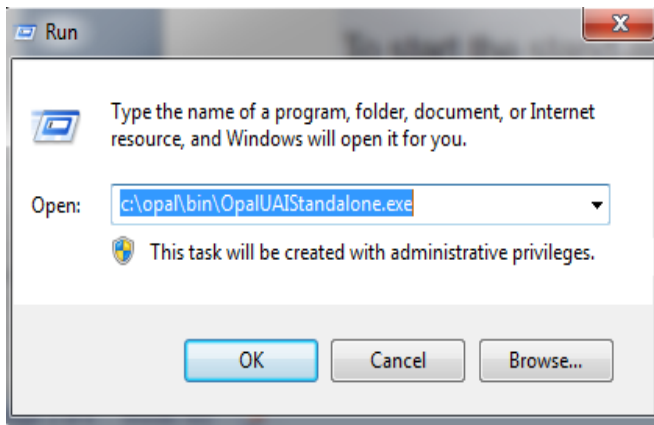


Figure 18: Run Command

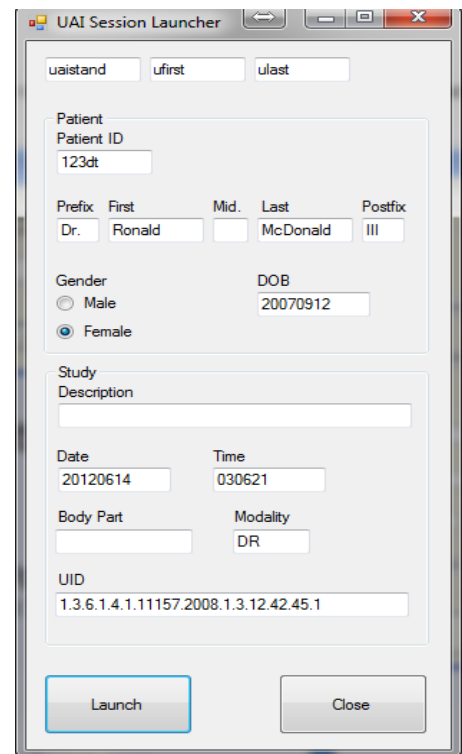
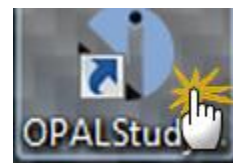


Figure 19: UAI Session Launcher

- b. Sign into Opal
 1. Left click the Opal Study Icon
 - a. User Name: siteadmin
 2. Password: Consult your PACS Administrator
 3. Select test study



4. Left click “Add New Image”
5. Proceed to STEPS **TO CALIBRATE** page 4.

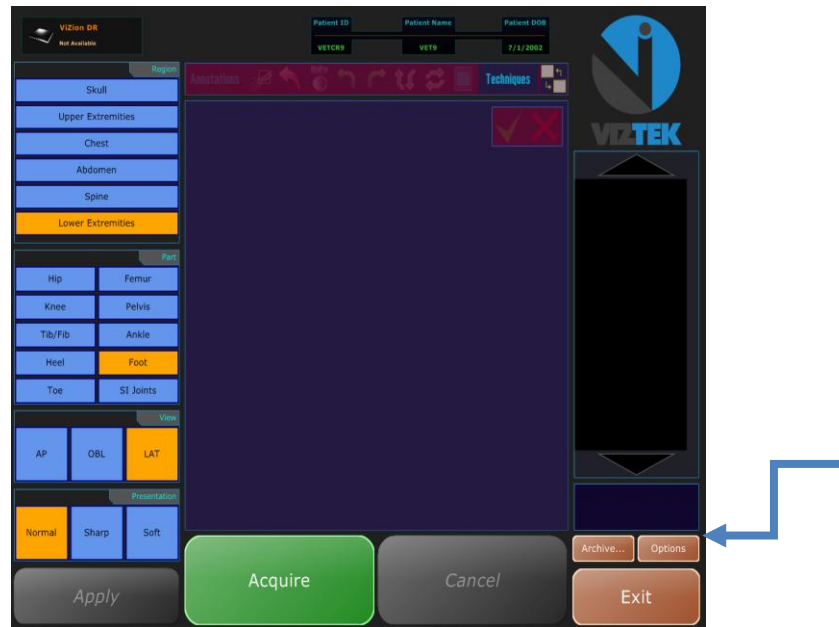


Figure 20: Acquisition Interface

Steps to Calibrate

1. Once the Acquisition Interface is activated select Options Figure 20
2. Authorization Required box prompts for a password “adc4me” Figure 21
3. Select the Device Configurations tab. Figure 22
4. Highlight Default under Configuration Pool to activate the Acquisition Device.

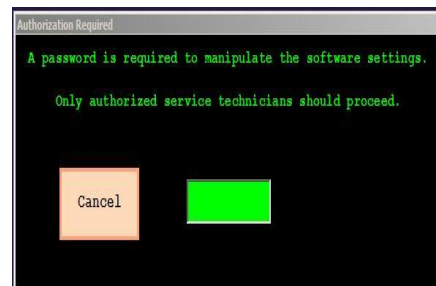


Figure 21: Authorization Box

5. Under the Acquisition Device, select the device you wish to configure from the list.
6. Scroll down the list under device options section , under the connectivity section select the appropriate com port under Serial Link, and the appropriate network adapter under Ethernet link (i.e. com1 , realtek PCI GBE)* . Figure 22 & 23

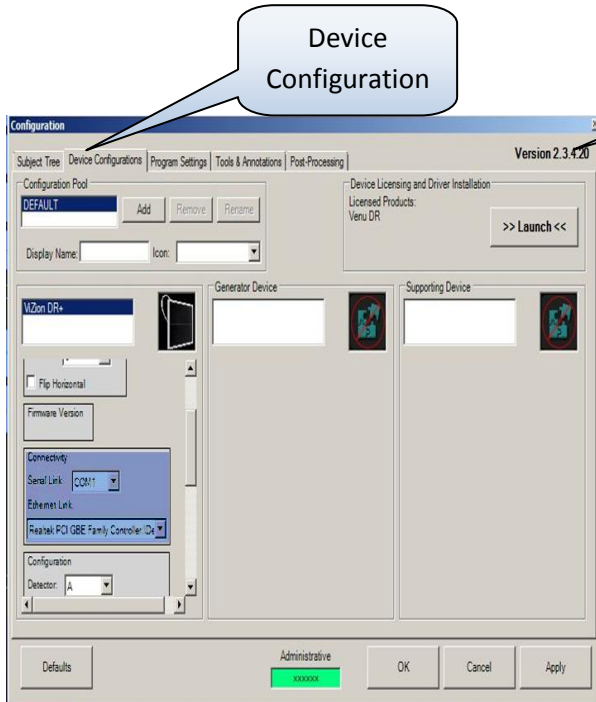


Figure 22: Configuration

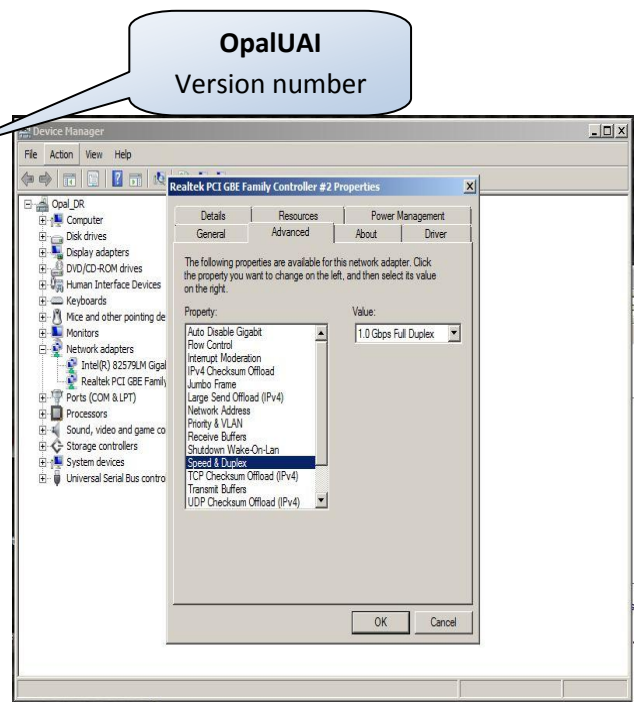


Figure 23: Device Manager



***If Ethernet Link Dropdown field is empty , the drivers are not installed be sure the NIC card is configured as 1.0GBps full duplex. Figure7**

7. Scroll down the list further, locate the calibration utility section, and click Launch to begin the Calibration Wizard. Figure 24

Figure 24: Calibration Utility



8. The “**Welcome to the ViZion DR + Calibration Wizard**” window appears, read and complete each tab, selecting Next to proceed. Figure 25

9. **Environment Setup Tab:** Complete each item using no grid, grid-cap, table-top, or bucky between the generator and the flat panel detector, select Next Figure 26

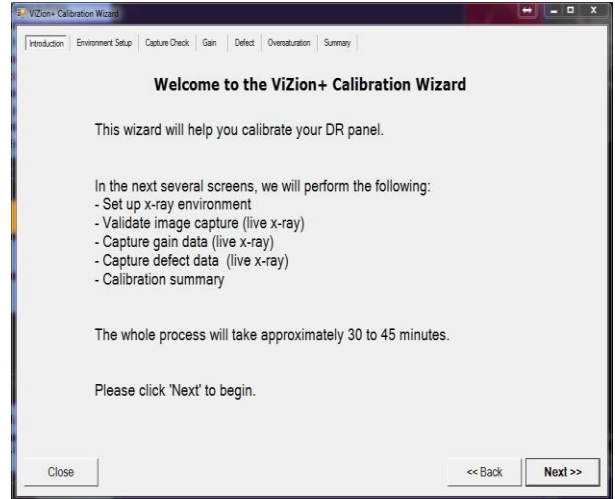


Figure 25: Calibration Wizard

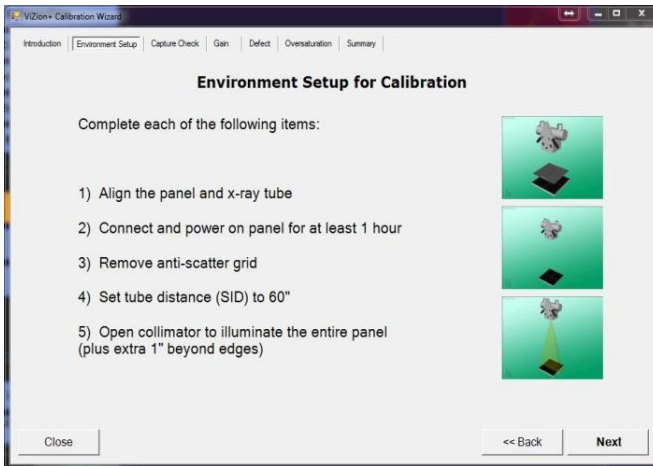


Figure 26: Environment Setup Tab

10. **Capture Check Tab:** set your x-ray generator to 70KVp 3.0 mAs, open your collimator 1” past the edges of the panel to ensure full coverage of the flat panel detector, select Acquire, and take an expose during the 10 second countdown. The black boxes will display pre-calibrated images, once completed click Next. Figure 27

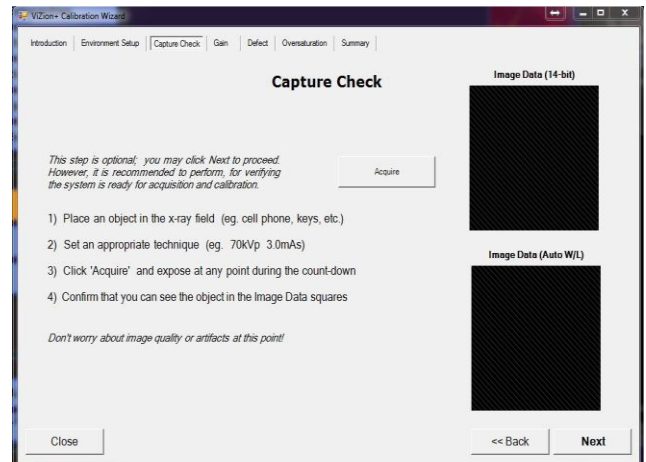


Figure 27: Capture Check

11. Gain Tab:

- a. OpalUAI v2.3.4.21 Remove 500 and 2000 from the directives fields, adjust exposures to 2 Exposures per Target, and adjust Target Tolerance to 300 Target Tolerance. Select START and fire tube head within all targeted fields. Figure 28
- b. OpalUAI v2.3.4.22+ Removal of the 500 and 2000 fields have already been adjusted, as well as the Target Tolerance, Select START and fire tube head within all targeted fields. Figure 28

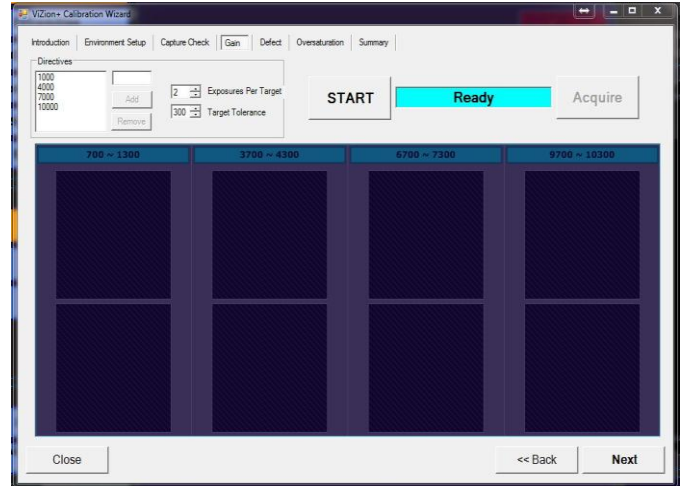


Figure 28: Gain Tab

SOURCERAY 130 MOBILE CART

WITH AN SID OF 60" ADJUSTING UP OR DOWN AS NEEDED TO HIT TARGETED FIELDS

Exposure Example	mA	Time
700-1300 70kv	0.9	.06
3700-4300 70kv	3.0	.20
6700-7300 70kv	5.2	.35
9700-10300 70kv	8.2	.55

12. Defect Tab:

- a. OpalUAI v2.3.4.21: adjust Bright Tolerance to 300 Bright Tolerance, select START, once Dark Frames are complete, select Acquire, and fire shots within Targeted field. Note that it does not take the same amount of radiation to reach the desired exposure level because offset subtraction was not previously in effect on other tabs. Figure 19
- b. OpalUAI v2.3.4.22+: Bright Tolerance is already adjusted, select START, once Dark Frames are complete, select Acquire, and fire shots within Targeted field. You will notice that it does not take the same amount of radiation to reach the desired exposure level because offset subtraction was not previously in effect on other tabs. Figure 29

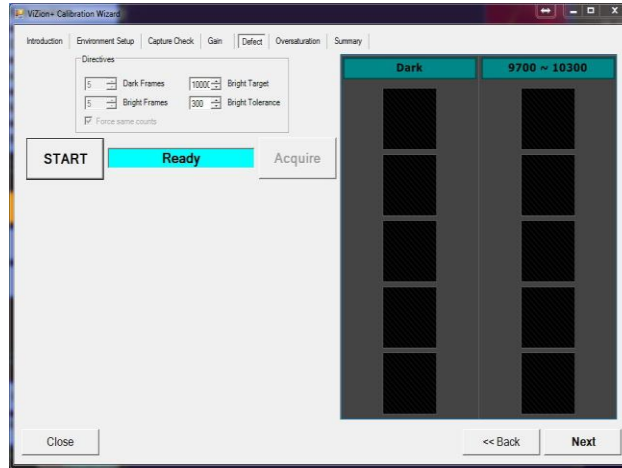


Figure 29: Defect Tab

13. **Oversaturation Tab:**

- a. OpalUAI v2.3.4.21: select Acquire button, Expose x-ray with the same level used to achieve the 9700-10300 target field in Gain Tab. Figure 30
- b. OpalUAI v2.3.4.22+: select Generate and wait up to 1 minute for file to be generated. (Do not take an exposure) Figure 30

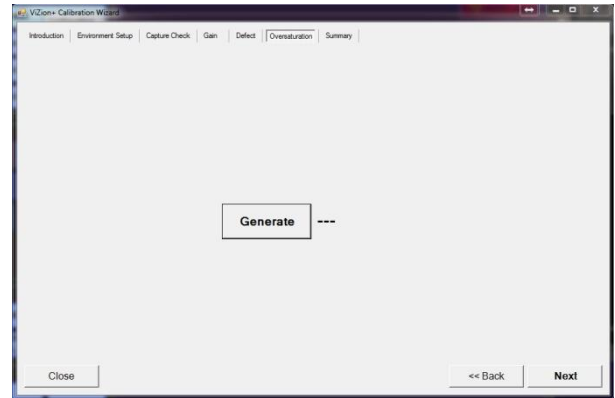


Figure 30: Oversaturation Tab

14. **Summary Tab:**

- a. OpalUAI v2.3.4.21: The summary page will be completely blank this is normal. Figure 31
- b. OpalUAI v2.3.4.22+: The calibrated fields will be populated, the blank fields are normal; these fields were not needed during the calibration procedure. Figure 31

15. After calibration is complete click Apply, then OK buttons on Configuration windows.
16. You are now ready to acquire a few test images, use proper techniques, and inspect for image quality.

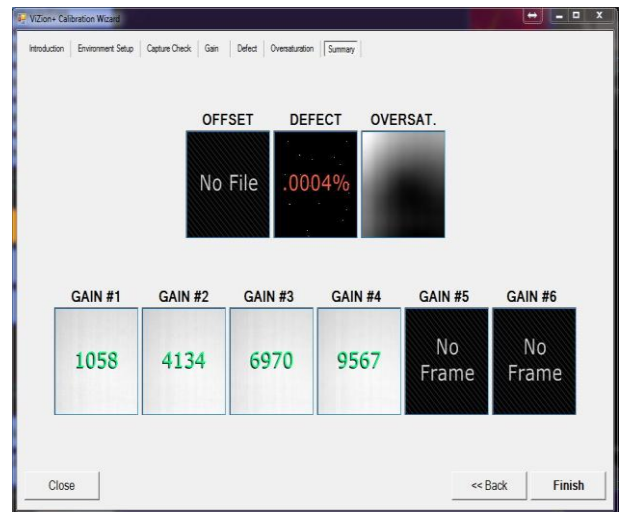


Figure 31: Summary Tab

Updates and Advanced Options

With the update to OpalUAI v2.3.4.22+, we improved our calibration utility. A max exposure duration function was added under the device configuration tab; this is to help aid lower powered x-ray generators (less than 30MA) that have very long exposure times to reach required doses. Removing the auto check box and adjusting this setting in amount of seconds (i.e. 5.0) will allow the panel to stay open the required time to accept the full exposure.

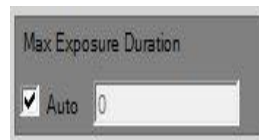


Figure 32: Max Exposure Duration

Chapter 3

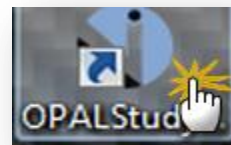
ViZion + User Quick Guide

This reference guide will guide you through a series of seven easy steps to acquire an image from the DR modality that will then import the acquired images into the Opal PACS system.

There are 3 main sections which are: the *Client Worklist* (Study List), the *Acquire Interface* and the *Opal Viewer*.

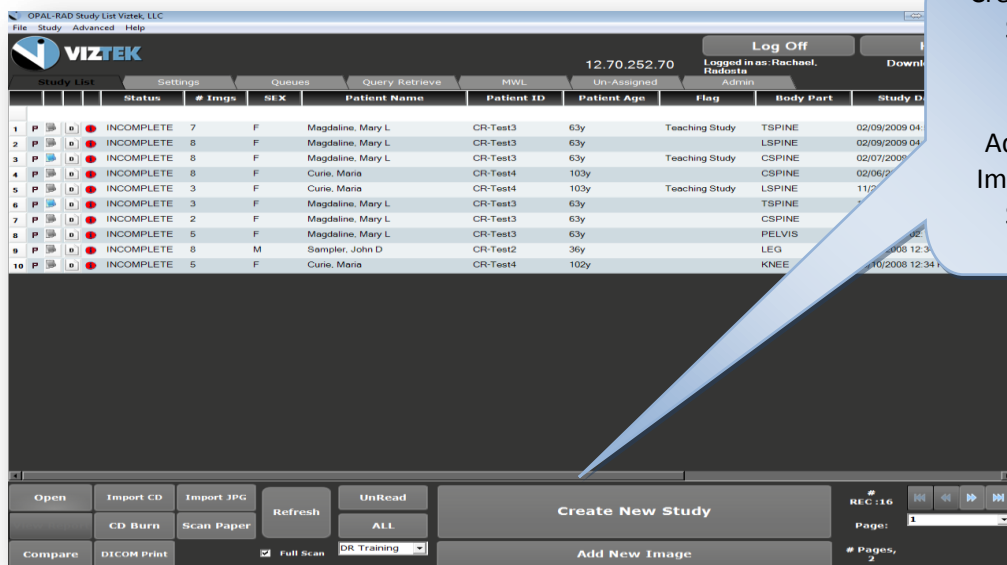
Getting Started:

- a. Click on the Opal Icon on the Desktop
- b. Login using username and password



7 Steps to Acquire a Study

1. Create a New Study or Add an Image to an Existing Study
2. Enter the Patient Details
3. Capturing the Images for ViZion CR/DR Interface display
4. Capturing Additional Images for Same Study
5. Perform QC Functions
6. Accept/Reject Images
7. Validate the Study



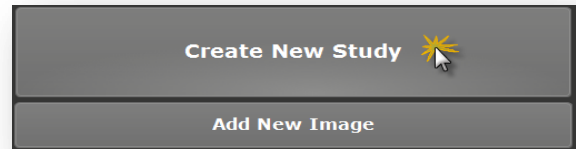
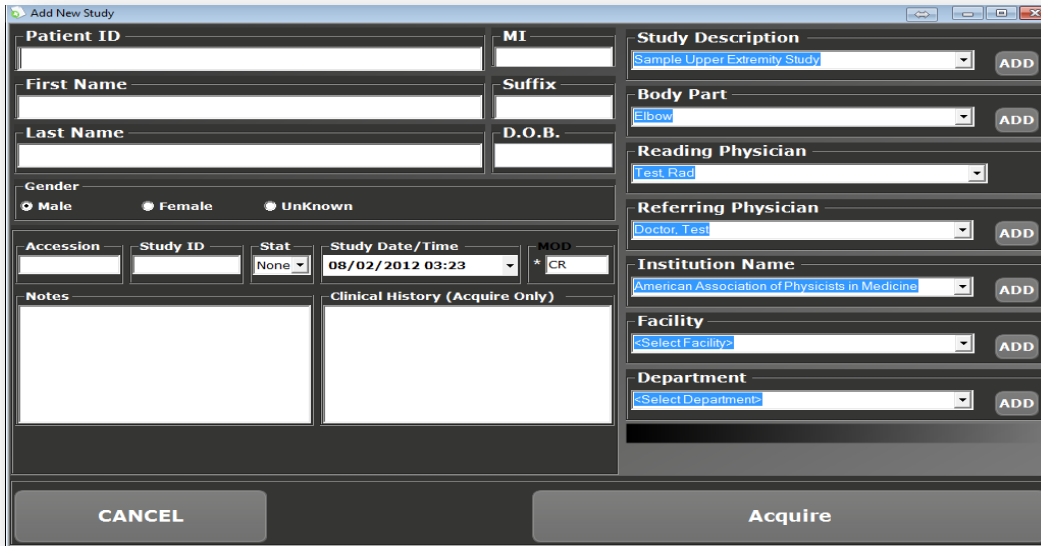
There is also a variety of functionality present on the worklist main page. From here you can:

- ✓ **COMPARE: TWO STUDIES**
- ✓ **IMPORT CD'S FROM AN OUTSIDE SOURCE**
- ✓ **BURN CD'S FOR EASE OF DISTRIBUTION**
- ✓ **PRINT IMAGES IN DICOM FORMAT**
- ✓ **IMPORT .JPG FILES INTO THE WORKLIST**
- ✓ **SCAN PAPER DOCUMENTS FOR REFERENCE**
- ✓ **CREATE FILTERS TO STREAMLINE YOUR PRODUCTIVITY**

[STEP 1- Create a New Study or Add an Image to an Existing Study](#)

To Create a New Study:

1. Click the *CREATE NEW STUDY* button from the Worklist.
2. The Add New Study screen will display.
 - a. If this is a *NEW PATIENT* with no existing Patient ID proceed to [STEP 2](#).
 - b. If this is an *EXISTING PATIENT* and you know the Patient ID:
3. Enter the Patient ID into the Patient ID field.
4. Hit the Tab key on your keyboard or move the cursor into the next field. *The database will search for existing patients with that ID and if one appears, will ask if you are trying to create a New Empty Study for the Patient.
5. Press the *AQUIRE* BUTTON and Proceed to [STEP 3](#).

The screenshot shows the 'Add New Study' window with the following fields and options:

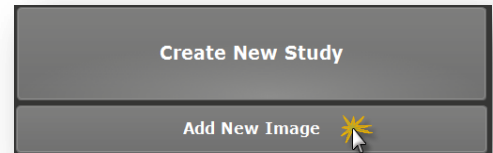
- Patient ID:** Text input field.
- MI:** Text input field.
- First Name:** Text input field.
- Suffix:** Text input field.
- Last Name:** Text input field.
- D.O.B.:** Text input field.
- Gender:** Radio buttons for Male, Female, and Unknown.
- Study Description:** Dropdown menu with 'Sample Upper Extremity Study' selected and an 'ADD' button.
- Body Part:** Dropdown menu with 'Elbow' selected and an 'ADD' button.
- Reading Physician:** Dropdown menu with 'Test Rad' selected.
- Referring Physician:** Dropdown menu with 'Doctor, Test' selected and an 'ADD' button.
- Institution Name:** Dropdown menu with 'American Association of Physicists in Medicine' selected and an 'ADD' button.
- Facility:** Dropdown menu with '<Select Facility>' selected and an 'ADD' button.
- Department:** Dropdown menu with '<Select Department>' selected and an 'ADD' button.
- Accession:** Text input field.
- Study ID:** Text input field.
- Stat:** Dropdown menu with 'None' selected.
- Study Date/Time:** Dropdown menu with '08/02/2012 03:23' selected.
- MOD:** Text input field with '+ CR'.
- Notes:** Text area.
- Clinical History (Acquire Only):** Text area.
- Buttons:** 'CANCEL' and 'Acquire' at the bottom.

Figure 33: Patient Detail

To ADD another image to an existing INCOMPLETE study:

• Please note this feature is used ONLY to add an image to a study in *INCOMPLETE* status. You cannot add an image to a study in the *Unread or Read* status.

1. Select the *Incomplete* study you wish to add an image to by left clicking on the desired study.
2. Then click the **ADD NEW IMAGE** button from the ViZion DR worklist. *Figure 6*
3. Proceed to [STEP 3](#) if you are ready to add additional image(s).



STEP 2: Enter the Patient Details

1. Enter the Patient Information. The required fields are *Patient ID, Patient Name – First and Last, DOB*. You may also enter any additional information, but that is not required.
2. Click the **ACQUIRE** button, once you have added all desired patient information (required/optional). *Figure 33*

STEP 3: Capturing the Images for ViZion DR Interface display

1. Once you have clicked the **ACQUIRE** button in the above steps, the **ViZion DR Interface** Window will appear. *Figure 34*
2. Select Body Region, Body Part, View and Mask if not already select from previous step.
3. Select **green ACQUIRE** button.
4. Take exposure once the *“READY FOR EXPOSURE”* displays. *Figure 35*
5. Image displays proceed to [STEP 4](#).

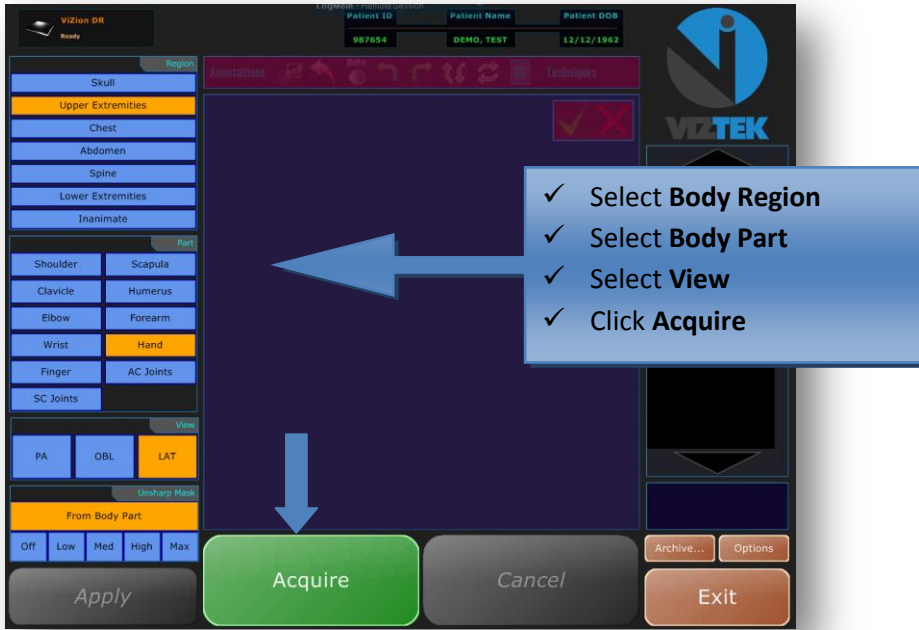


Figure 34: ViZion Interface Screen / Filters

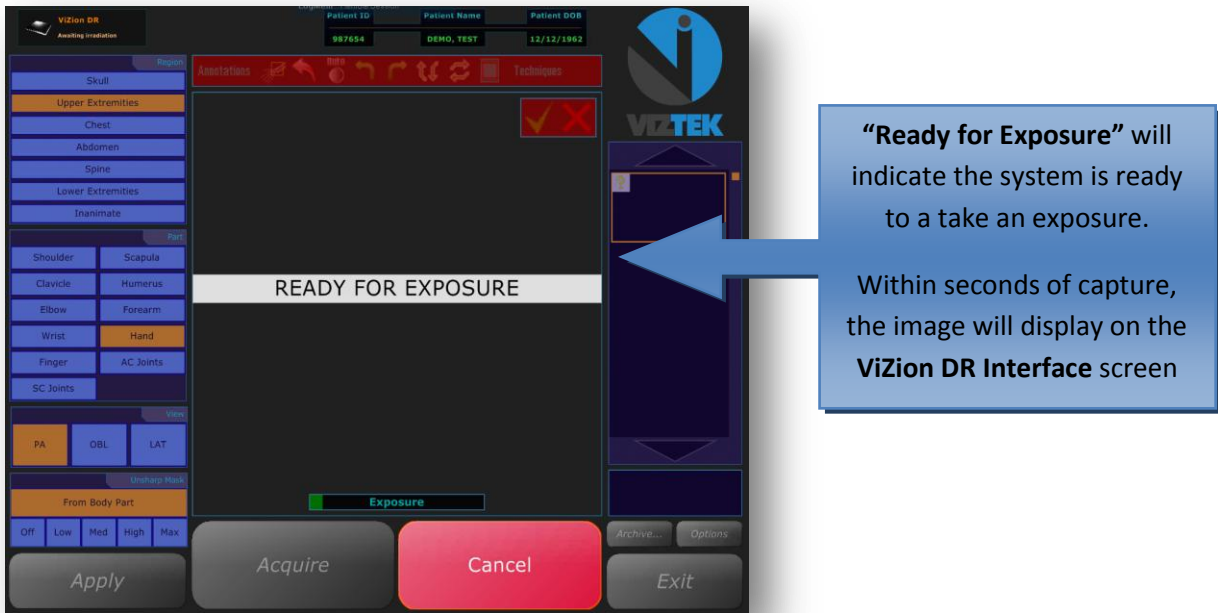


Figure 35: Ready for Exposure

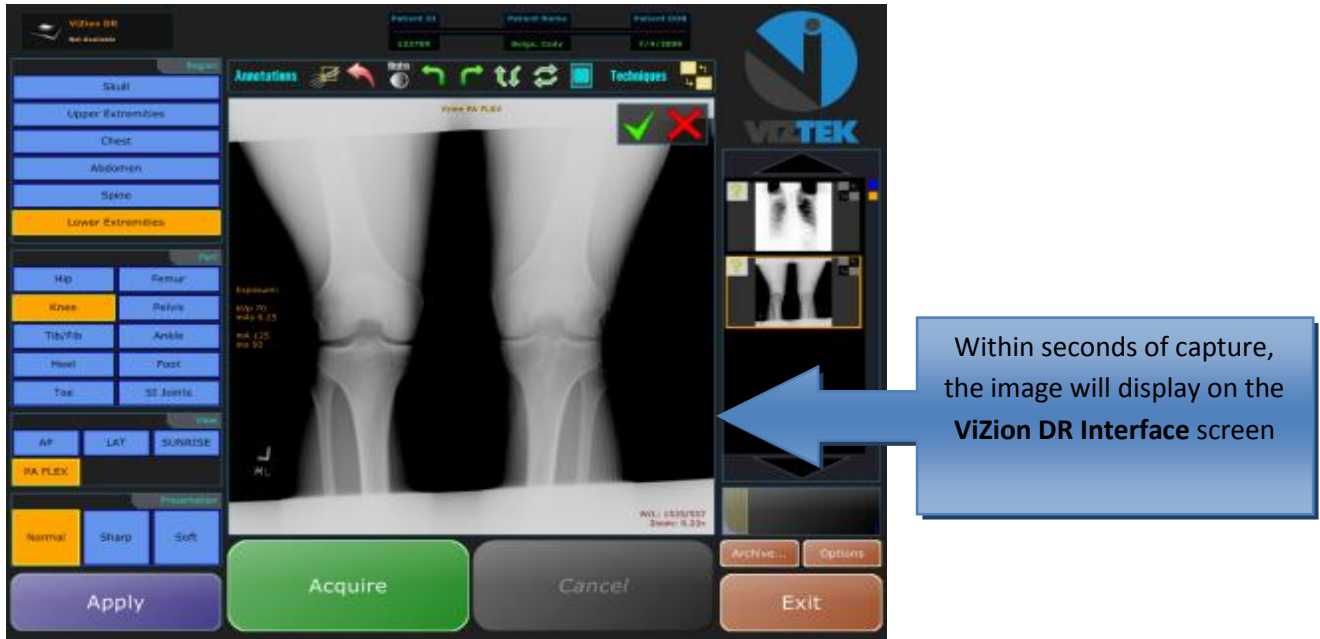


Figure 36: Image

STEP 4: Capturing Additional Images for Same Study

If you have more images to capture for this study repeat [STEP 3](#) for each image capture, selecting BODY REGION/BODY PART, click the green **ACQUIRE** button. If **NO**, proceed to [STEP 5](#).

STEP 5: Perform QC Functions

After scanning the image(s), you have the option to use the following tool bar at the top of the scanned image to perform QC functions for Window/Leveling, Adding annotations, and Rotating the image.



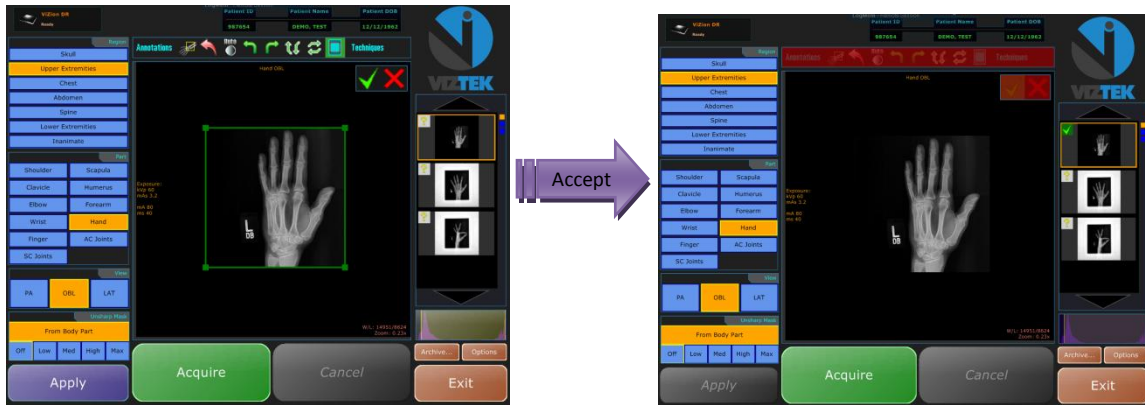
1. Annotations Option	6. Rotate Image Right
2. Smart Box	7. Flip Image Vertical
3. Revert Image - Reset Back to Original	8. Flip Image Horizontal
4. Auto W/L	9. Shutter Box
5. Rotate Image Left	10. Technique Guide
11. Stitching Option	

👉 PLEASE NOTE: You can also use your Right or Left mouse button to manually Window/Level your image. To perform this function, simply hold button to change W/L. (see below)

Move your mouse ⇔ **to change the contrast** --- **Move your mouse** ⇕ **to change the brightness.**

STEP 6: Accept/Reject Images

Each image must now be Accepted or Rejected.



1. Select the **Green check** to ACCEPT the current image.
2. Select **Red X** to REJECT current image and erase it from the study series.
3. Once all images have been Accepted/Rejected, you may exit out of the ViZion DR Interface by left clicking on the **EXIT** button. This will close out the **ViZion DR Interface**, import all images into Opal PACS, and allow the user to open the exam in the Opal Viewer when doubling clicking on a patient in the Study List.

STEP 7: Validate the Study*

*If your workflow includes validating the study by manually changing the status from **INCOMPLETE** to **UNREAD** please continue with the steps a-c.

Highlight the study in the worklist by *single* left clicking on it.

1. Then right click to display a drop down menu.
2. Select **UNREAD**, the status of the study has now been changed from **INCOMPLETE** to **UNREAD**.

Figure 37

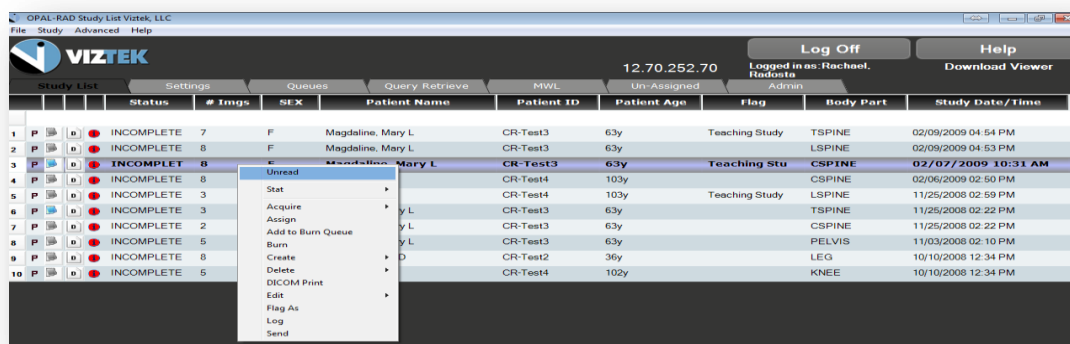


Figure 37 : Validate Study