

OIS Reports Module with Varian ARIA

1. Introduction

OIS Reports Module will automatically transfer exported AlignRT Treatment Reports to the ARIA Timeline as DICOM RT Image files. This document will guide you through setting up your ARIA Oncology Information System (OIS) to accept the AlignRT Treatment Reports and report screenshots, if applicable, into the timeline. If you have any questions or difficulties, please reach out to Vision RT for further assistance.

2. Data security note

The OIS Reports Module transmits patient data to the Treatment Planning Software (TPS) using DICOM files, as per the industry norm. DICOM files are typically created during imaging and treatment planning processes, and it is not yet standard for DICOM files to be encrypted. The OIS Reports Module does not encrypt DICOM files.

A secure DICOM method is available, which includes encryption, and a future release of the OIS Reports Module will support this, in response to market demand. Note the OIS in receipt of encrypted DICOM will need to support the secure DICOM standard to decrypt files (Composite Instances).

Please ensure the Network hosting the OIS Reports Module and DICOM transfer is secured.

3. Configuring the ARIA Timeline

A Vision RT Field Service Engineer (FSE) will install the OIS Reports Module, but the customer must configure the ARIA Timeline (Vision RT cannot perform those tasks). Configuration of the ARIA Timeline should be completed prior to the Vision RT FSE setting up the OIS Reports Module.

The information below can be used to help you configure the ARIA timeline to accept AlignRT Treatment Reports and screenshots. The information and/or screenshots may differ from your system. Please reach out if you have questions or are unable to configure ARIA with the information below.

1. Log into the server that hosts the DICOM services for your ARIA instance
 - a. This may be on the application server or a separate dedicated server for all DICOM related services
2. Once you are logged onto the DICOM server locate the Varian DICOM Services Configuration tool
 - a. There may be a Desktop folder shortcut with the installed Varian tools for easier access

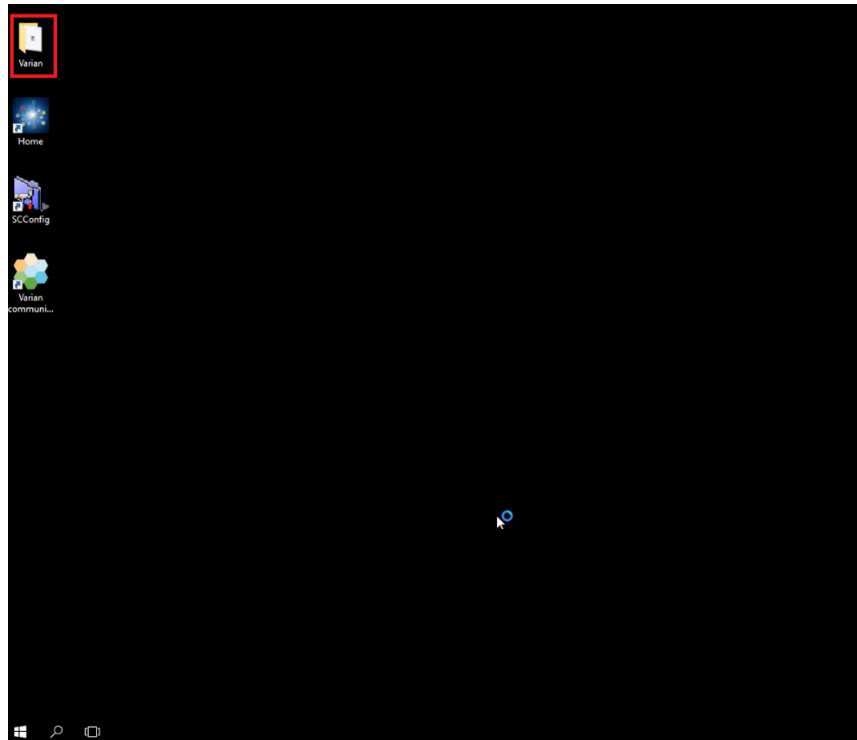


Figure 1 – Screenshot of Desktop with Varian tools shortcut folder

3. Open the **DICOM Services Configuration** tool application

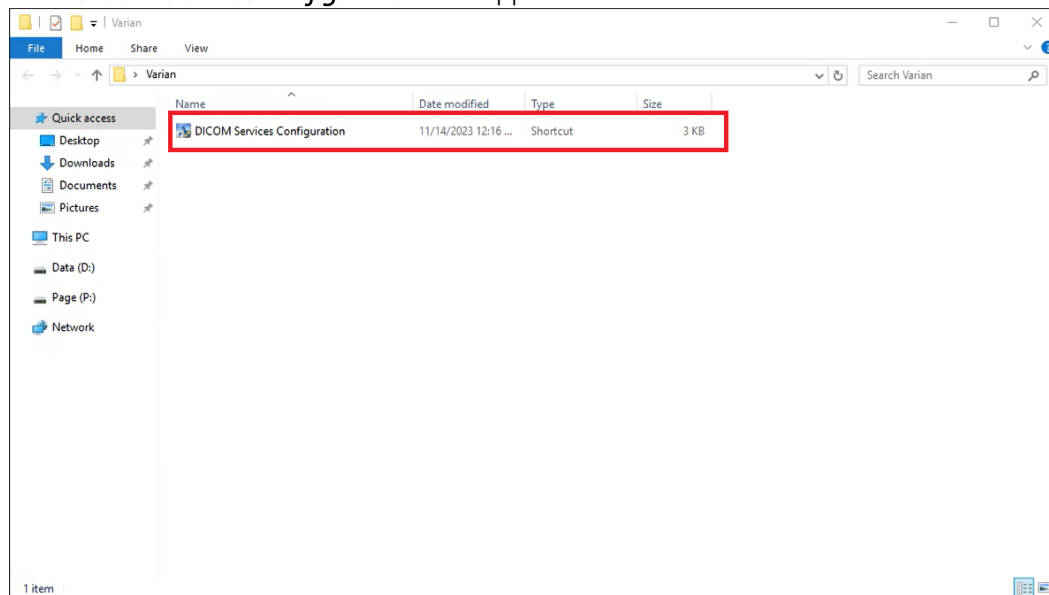


Figure 2 - DICOM Services Configuration application

4. When the application launches you will see the main application dialog with the current configured DICOM nodes for your ARIA instance. If you have previously configured an ARIA Timeline DICOM node it will be listed in the main body, otherwise; click the **Install New Service** icon in the upper left of the main dialog

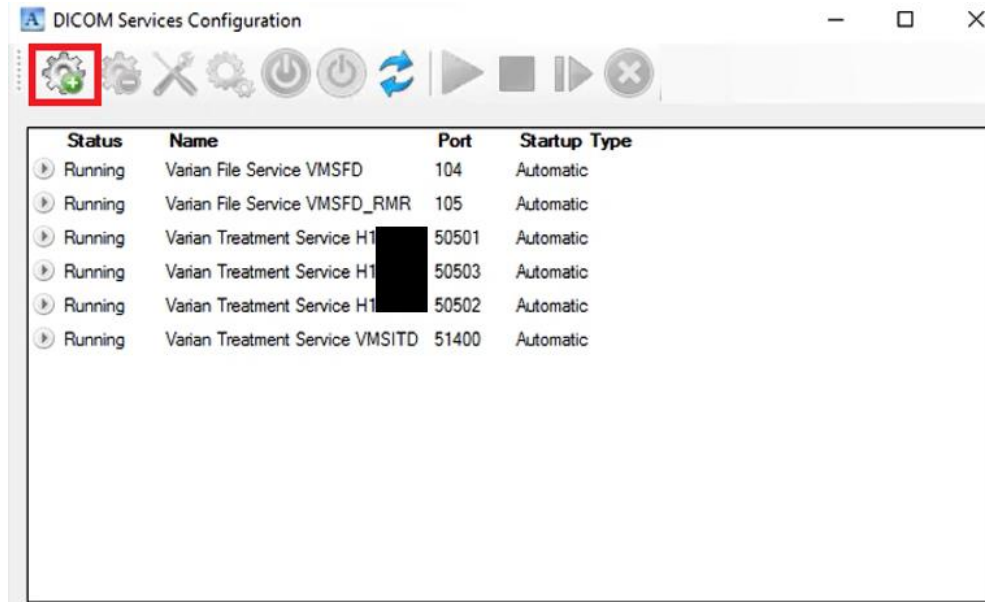


Figure 3 – Install New Service icon in the DICOM Services Configuration application

5. Select **DB Service** under Service Category in the Add New Service Wizard

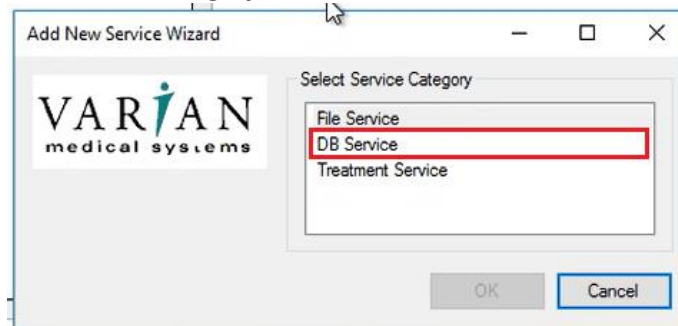


Figure 4 – DB Service selection

6. The Database Service Configuration Window will open. Attention should be given to configuring the following sections

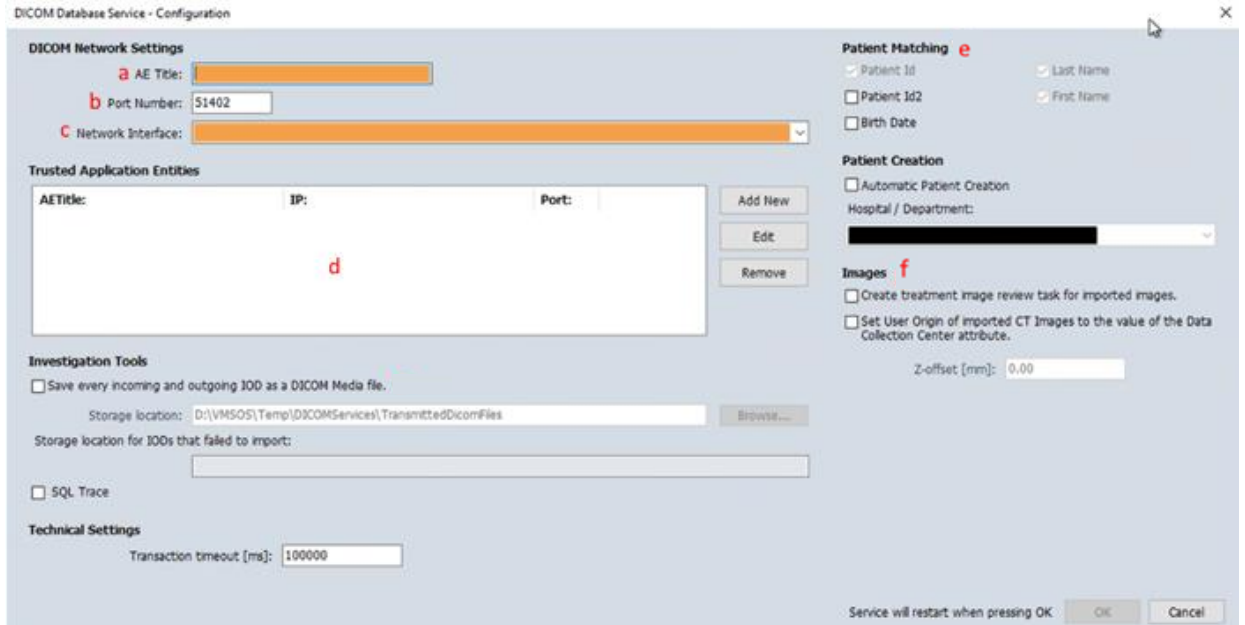


Figure 5 – DICOM DB Service Configuration Settings

- a. Fill in the **AE Title** (*Figure 5 - a*) for the new ARIA Timeline Service you are installing
 - ARIA Timeline AE Title to be used (i.e. pointed to) from the ARIA Timeline service on the Vision RT computer
- b. Assign the **Port Number** (*Figure 5 - b*) to be used for listening
 - Port Number to receive images coming from the ARIA Timeline Service on the Vision RT computer
 - Port may need to be opened on your network by your IT/firewall team
 - There will be bi-directional communication at this port so bidirectional firewall policies will be needed
- c. Select the **Network Interface** (*Figure 5 - c*) you will be using for this service
 - The Network Interface for the local ARIA instance that this service will listen on
 - This will often just be the network interface card
 - If there is a question based on your specific configuration, you may need to consult with your IT/network team or Varian installer
- d. Add the **Trusted Application Entities** (*Figure 5 - d*) that will be allowed to submit images to the ARIA Timeline service on the Vision RT computer by clicking the **Add New** button
 - Configure the following:

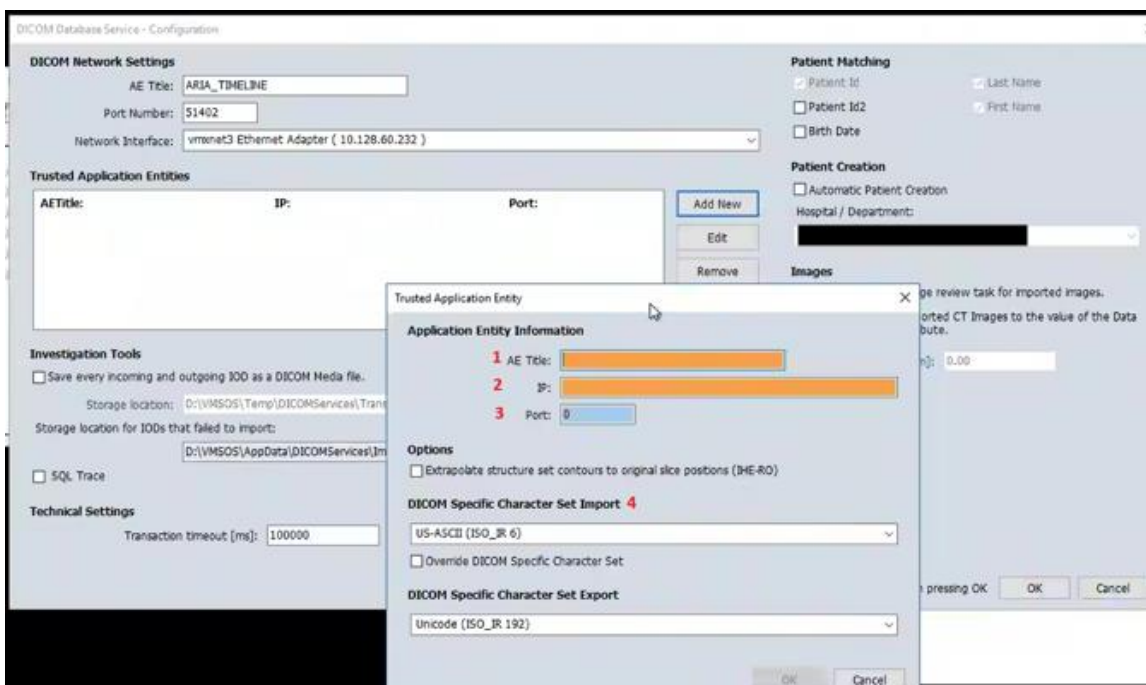


Figure 6 – Configuring Trusted Application Entities

- The **AE Title** (Figure 6 - 1) for the Aria Timeline service running on the Vision RT Computer (default for Vision RT OIS Reports Module - 'VRT-Reports'.
 - The **IP address** (Figure 6 – 2) for the Vision RT computer running the ARIA Timeline service
 - The **Port** (Figure 6 – 3) that will be used for communication. *Note that this must be different from any existing DB Services currently configured on the ARIA Instance – typical values for DICOM communication would be '104' or '105'.*
 - The **DICOM Specific Character Set Import** (Figure 6 – 4) used by the ARIA Timeline service on the Vision RT computer (typically Unicode but could be ASCII)
- e. The **Patient Matching** (Figure 5 – e) criteria to be used for associating images to the correct patients
 - It is recommended to leave at the default settings
 - f. **Images** (Figure 5 – f) – If you wish to receive an Image Review Task in ARIA for images coming over from AlignRT via the OIS Reports Module, you can configure this by checking the appropriate checkbox
7. When satisfied with your selections, click OK at the bottom of the window to install the DICOM Service and run it
 - a. If you want to add Windows specific configuration to the service that is now installed, you can change configuration settings from the same Varian tool or by selecting the service from the Windows Services window and configuring it from there

4. Configuration Options on Vision RT

The following configuration options can be decided based on how you plan to use the AlignRT information sent to the ARIA Timeline. If you decide at a later time, you would like to change how the OIS Reports Module is configured, contact Vision RT Support.

4.1 Configuration Options in the OIS Reports Module

These options are configurable during the installation of the OIS Reports Module. Please let the Vision RT representative installing the OIS Reports Module know your preferences.

1. **Where the AlignRT Treatment Report appears on the ARIA Timeline.** Where the report appears on the ARIA timeline is based on the AlignRT treatment session time. The treatment session is defined by the time the patient is opened in the AlignRT Treatment Screen to the time the patient is closed on the Treatment Screen. You can choose to display it in the ARIA Timeline at
 - a. The end of the treatment session (default)
 - b. The beginning of the treatment session
 - c. At a time period that is before, during, or after the treatment session. For example, you could choose to have it appear in the middle of the treatment session
2. **Include screenshots on the timeline.**
 - a. Display only the AlignRT Treatment Report on the ARIA Timeline
 - b. Display AlignRT Treatment Report and all AlignRT Treatment Report screenshots captured within the report

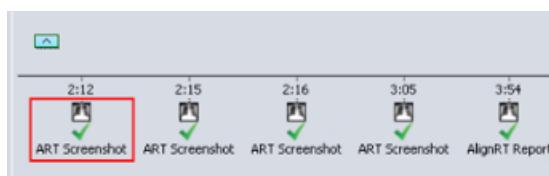


Figure 7 – Example of AlignRT Treatment Report and AlignRT Treatment Report screenshots on the ARIA Timeline

3. **Number of pages to export to ARIA Timeline**
 - a. Export all pages of AlignRT Treatment Report (default)
 - b. Export only first page of AlignRT Treatment Report
4. **Number of DICOM image pages per row.** For example, for a 12-page PDF report, if the setting is 3, the report would display as 4 rows with 3 pages in the image
 - a. 3 is the default setting
 - b. Can be set to 1 or higher (integer)
5. **Approval of AlignRT Treatment Report on ARIA Timeline**
 - a. Require approval
 - b. Do not require approval (default)

4.2 Configuration Considerations in AlignRT Treatment Report

You can configure the AlignRT Treatment Report at any time in your AlignRT software to include more or less information. Configuration of reports can be done by logging into AlignRT as a user with proper rights (ex. Physicist) then going to Settings / Reports / Report Configuration. Be mindful that the more information you include in your AlignRT Treatment Reports, the larger the image file will be on the ARIA Timeline.

If you wish to display any screenshots on the ARIA Timeline, you must ensure the AlignRT Treatment Report is configured to save those screenshots.

By default, AlignRT Treatment Reports capture the last image on the AlignRT Treatment screen when the user pauses monitoring and then exits the patient on AlignRT. It is recommended to always pause monitoring when treatment is complete but before the patient is moved out of the treatment position to ensure that final screenshot in the Treatment Report shows an accurate representation of the patient's

position during beam delivery. This setting (Final Screenshot) can be disabled in the Treatment Report Configuration in Settings/Reports in AlignRT. Please see the Instructions for Use for your AlignRT version for more information on configuring AlignRT Treatment Reports.

4.3 AlignRT Treatment Report Export Configuration Considerations

In AlignRT, you can choose to manually or automatically export AlignRT Treatment Reports. If automatic report export is set up in AlignRT, all AlignRT Treatment Reports will be exported automatically. If you wish to only have some AlignRT Treatment Reports sent to the OIS (ex. only specific types of treatments), then you must manually export the report from AlignRT.

You may wish to disable automatic report export in AlignRT when OIS Reports Module is first installed to allow you to export a phantom patient treatment report first and see how it appears on the ARIA Timeline.

Automatic report export can be set up and enabled/disabled with your Regional Field Service Engineer.

5. Viewing the Report on the ARIA Timeline

AlignRT Treatment Reports and report screenshots (if configured) can be viewed on the ARIA OIS Timeline for any patient treated with AlignRT. Patients treated with AlignRT in Auto-Authorize will not display any AlignRT information in the OIS.

AlignRT Treatment Reports are matched to a patient's ARIA Timeline based on the Patient ID and the treatment session time from the AlignRT Treatment Report. After a treatment session where AlignRT was used for monitoring and if the reports are set up to automatically export, the AlignRT Treatment Report and report screenshots (if configured) will be displayed on the ARIA Timeline. If they do not appear, try refreshing the ARIA Timeline.

Within ARIA, both Offline Review and RT Summary will display the AlignRT Treatment Reports on the ARIA Timeline. When viewing in Offline Review, the timeline is viewed as the elapsed time whereas RT Summary shows the time and date stamps on the timeline.

The AlignRT Treatment Report will be displayed in the ARIA Timeline as a DICOM RT image. Click on the report or screenshot in the timeline to view the image.

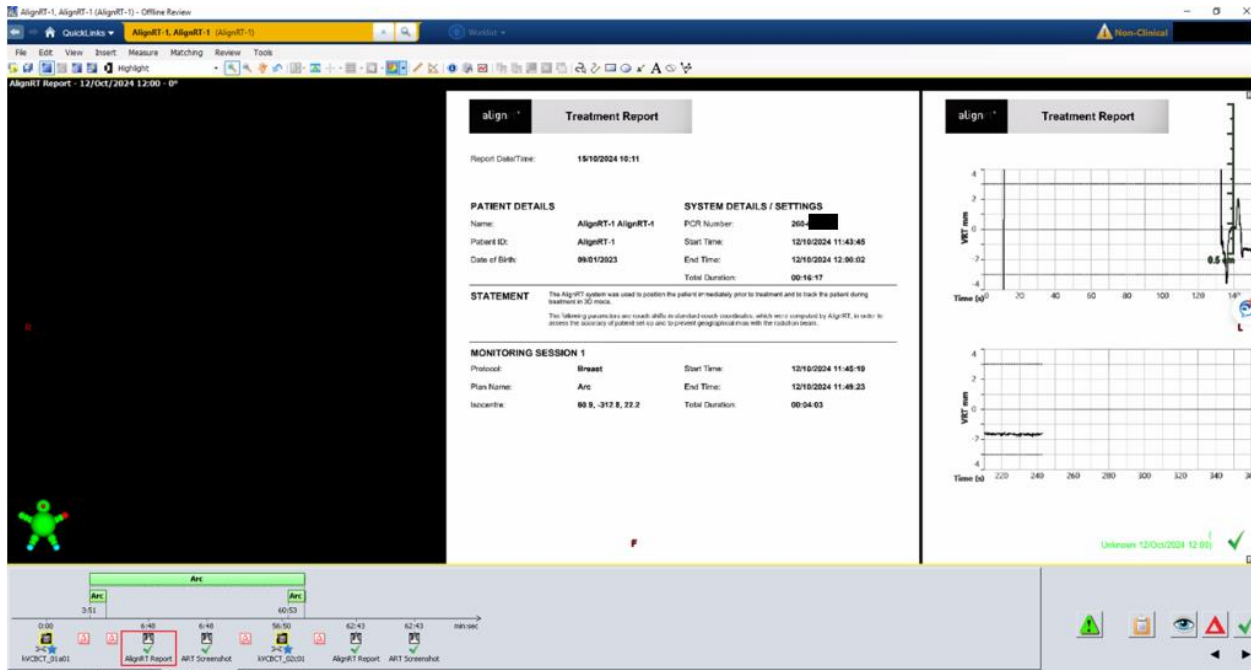


Figure 8 – Viewing AlignRT Treatment Report from Offline Review

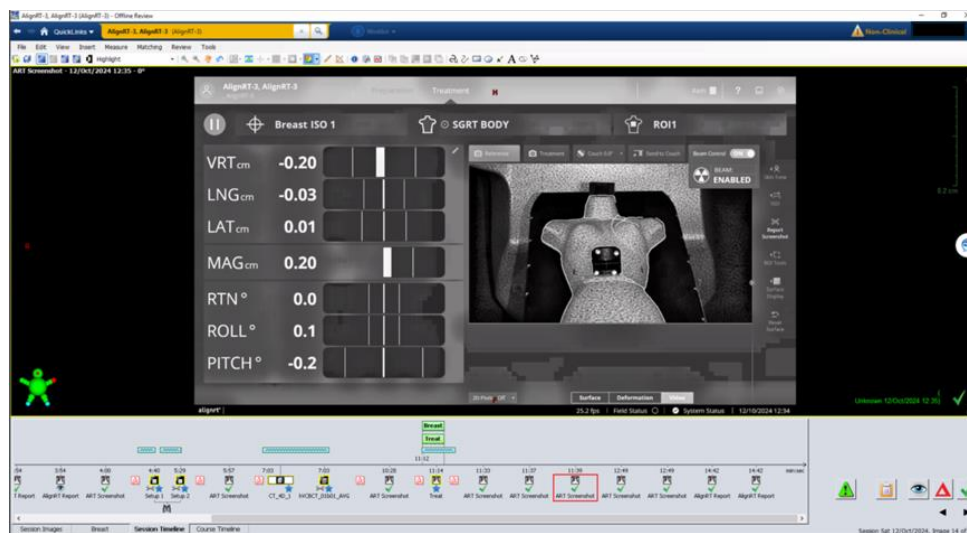


Figure 9 – Viewing AlignRT Treatment Report screenshot from Offline Review

If approval of the AlignRT Treatment Report is required, you can do this the same way you would approve other items in the ARIA Timeline.

Between a non-AlignRT acquisition and an AlignRT screenshot or report, the timeline will display a blue triangle. AlignRT screenshots and reports do not contain any DICOM tags for couch position. These icons do not necessarily mean a couch shift was performed.

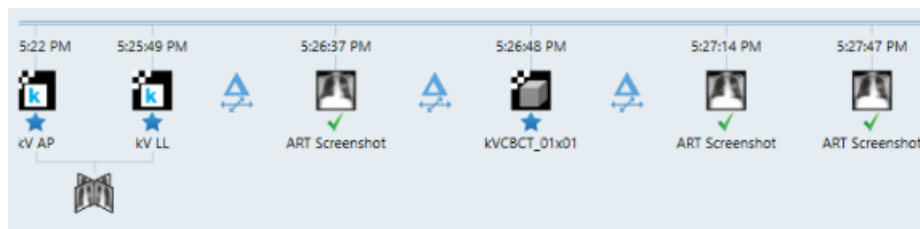


Figure 10 – Blue triangles on the ARIA timeline between non-AlignRT acquisitions and AlignRT screenshots or reports

6. Storage Space

The DICOM RT Image file size will depend on the size of the AlignRT Treatment Report. A single-page Treatment Report will convert to ~0.2MB RT Image whereas a twelve-page Treatment Report will convert to ~ 2MB RT Image. Additionally, if AlignRT Treatment Report Screenshots are configured to be stored on the ARIA Timeline, each screenshot converts to ~200KB.