

DICOM Patient Import

In order to begin planning in the decimal ElectronRT App you must first have patient imaging captured and structure geometries defined. This information is brought in the ElectronRT App by importing DICOM CT and Structure Set files.

Note: DICOM patient import will be disabled until the organization configuration has been completed.

Default Import Directory

The default import directory can be set in the app settings by navigating to View → Settings. This directory will always be the default directory when importing a patient. Users can then further refine the import folder as needed starting from this default level.

Importing a New Patient

The ElectronRT application has two methods for importing new DICOM patients: 1) Manually browsing for local files and 2) setting up a DICOM receiver to accept and import DICOM patients. Refer to each options section below for details.

Local File Import

If you have a set of Ct Images and structures you can import them directly into a new patient through the “Import Patients” menu.

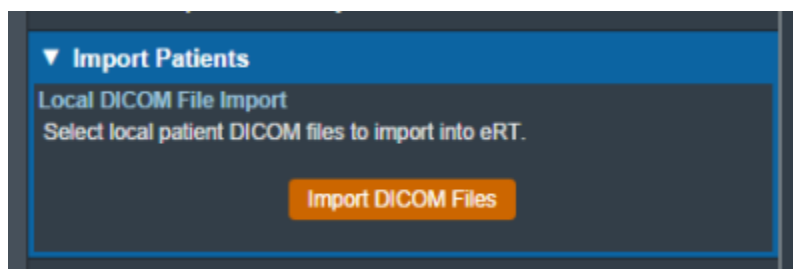


Fig. 1: Import in the Main App Page

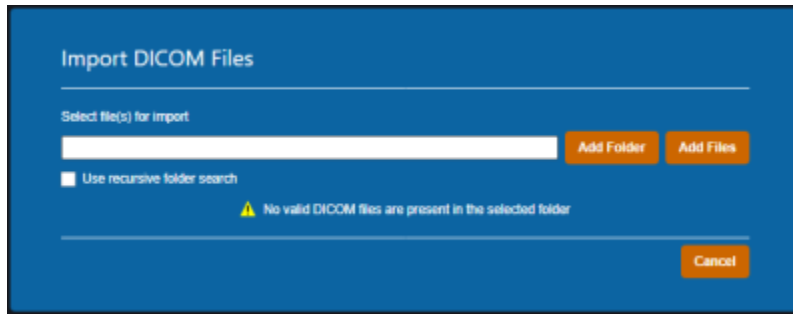


Fig. 2: Import Directory Input

The Import DICOM Files option allows you to either browse your computer or copy the path to the folder that contains the CT images and structures you wish to import. The following options are available for browsing for local files:

- **Add Folder:** Browse for an entire folder of DICOM files to import into a patient
 - Use recursive folder search: This option can be selected prior to adding a folder to recursively search and add all DICOM files within the selected folder and all sub-folders.
- **Add Files:** Browse for individual DICOM file(s) to import into a patient. Note: this option does not make use of the recursive folder search option.

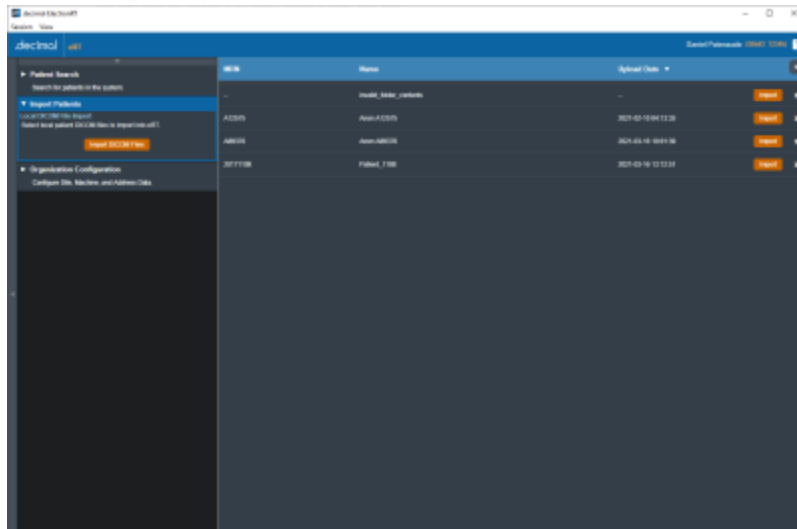
A list of selected DICOM files for import will be displayed and you can choose to add more files for the selected patient or remove any files as desired.

Refer to the [Processing Imports](#) section once files have been selected to import.

DICOM Receiver Imports

Users can install and configure the [ElectronRT DICOM Receiver](#) to receive and save patients for seamless importing into the ElectronRT application.

Users can then specify a DICOM Import Monitoring Directory within the [Site Configuration's DICOM Settings](#) block that corresponds to the `storage_location` field set for the ElectronRT DICOM Receiver. Once the receiver and monitoring directory have been setup and configured, and DICOM patients sent to the ElectronRT DICOM Receiver will automatically show up within the Import Patients display as shown in [figure 3](#).



The screenshot shows the ElectronRT DICOM Receiver interface. On the left, there is a sidebar with navigation options: 'Patient Search', 'Import Patients', and 'Organizational Configuration'. The 'Import Patients' section is active, displaying a list of received patients. The table has columns for 'ID#', 'Name', and 'Upload Date'. Each row includes an 'Import' button.

ID#	Name	Upload Date	Import
	import_test_patient		Import
A-0001	Alan A-0001	2021-03-10 10:44:12.38	Import
A-0002	Ann A-0002	2021-03-10 10:44:12.38	Import
20210310	Patrol, T 100	2021-03-10 12:12:18	Import

Fig. 3: DICOM Receiver Patients

Each patient received from the ElectronRT DICOM Receiver can be imported or removed from within the eRT Import Patient block.

Refer to the [Processing Imports](#) section once a patient has been selected to import.

Processing Imports

Then the import will process:

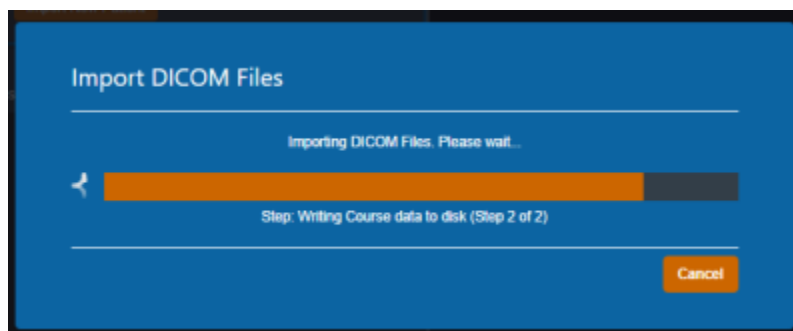


Fig. 4: Import Loading screen

If there are no Errors while importing you will be taken to a confirmation page for your import.

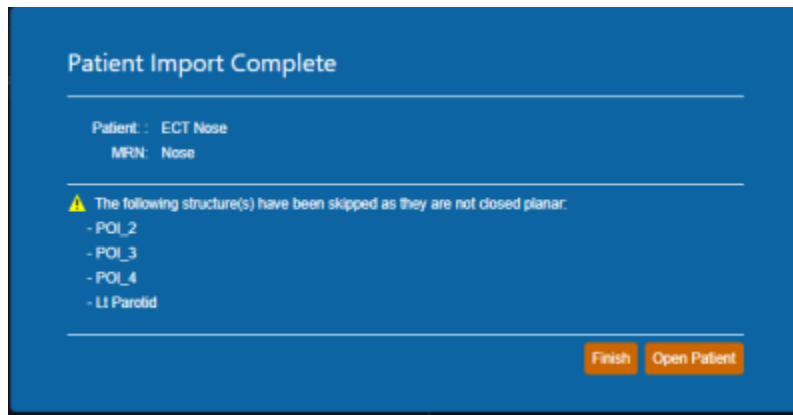


Fig. 5: Import Finalized

If there are errors please refer to the [Common Errors](#) section below.

Common Errors

Missing/Undefined External Structure

If the imported DICOM Structure Set does not have a structure flagged as *RT ROI Interpreted Type (3006,00A4) EXTERNAL* you will be directed to specify the external patient structure before the import resumes. The patient external structure must be set to the defining boundary of the patient's outer surface, and not a rind skin structure.

Note: You will be warned if the selected external structure is not the structure with the largest volume. This is to prevent incorrect structure selection. For example, when a 'External' and 'Skin' structure both exist, and the 'Skin' structure is a rind, if the user selects the 'Skin' structure, the warning will state the 'External' structure has a larger volume, since that's the correct representation of the patient structure needed for the ElectronRT App.

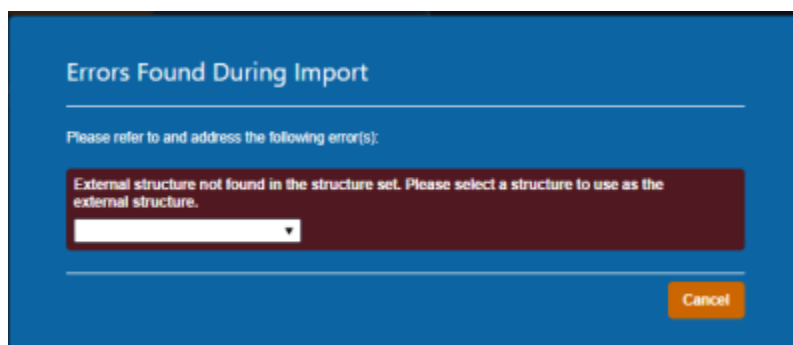


Fig. 6: Missing External Error

The drop down menu will have a list of the structures in the imported set. You will be able to select one as the external for this course then confirm your choice by pressing "Set External".

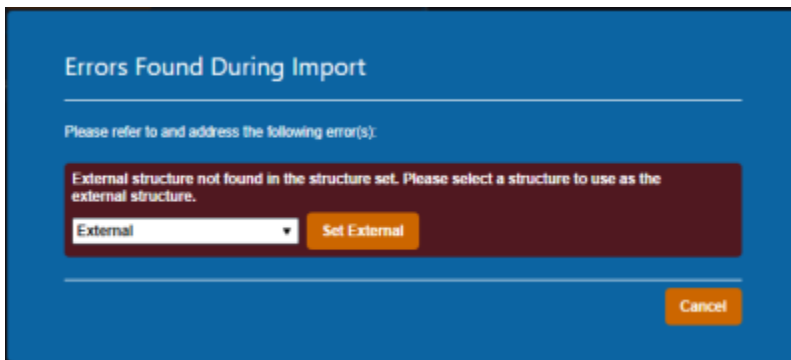


Fig. 7: Set External Dialog

Structures Skipped During Import

Structures can be skipped during Structure Set import if the structures meet the following criteria:

- Non closed planar (e.g.: points or structures where slices are not fully closed)

Structures that are skipped will be denoted at the end of the DICOM import as shown in [figure 8](#).

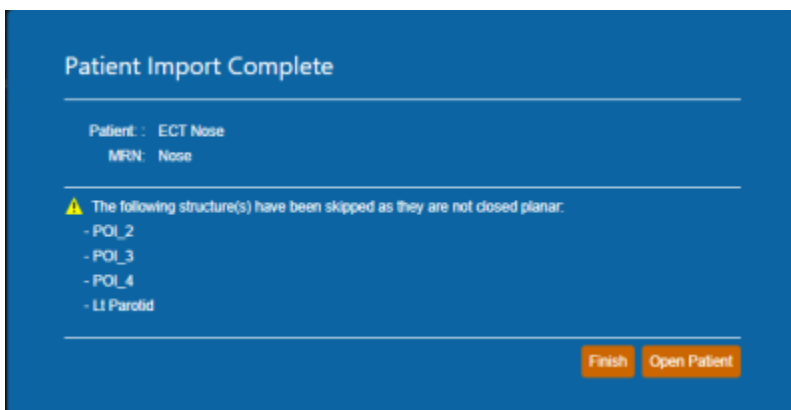


Fig. 8: Import Finalized

Importing an Existing Patient

If the files you have selected to import coincide with the MRN of a patient that already exists in the app you will receive this error.

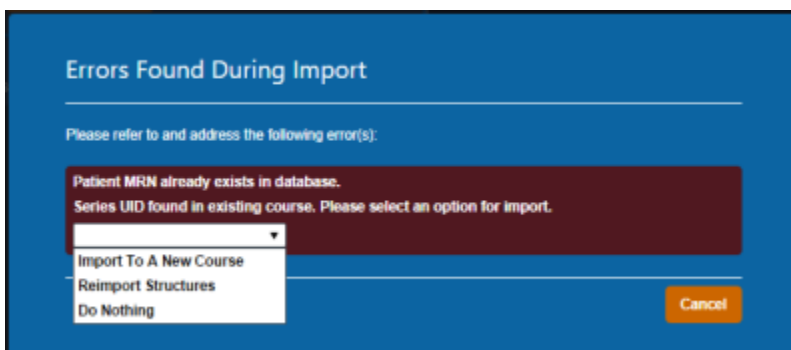


Fig. 9: Existing Patient Error

You have three options provided to resolve the error:

- **Import to a New Course**
- **Re-Import Structures**
- **Do Nothing**

Import to a New Course

Importing to a new course will simply complete the import with the app creating a new course for this patient using the new imported files (note this option will not affect any existing courses or plans for the patient).

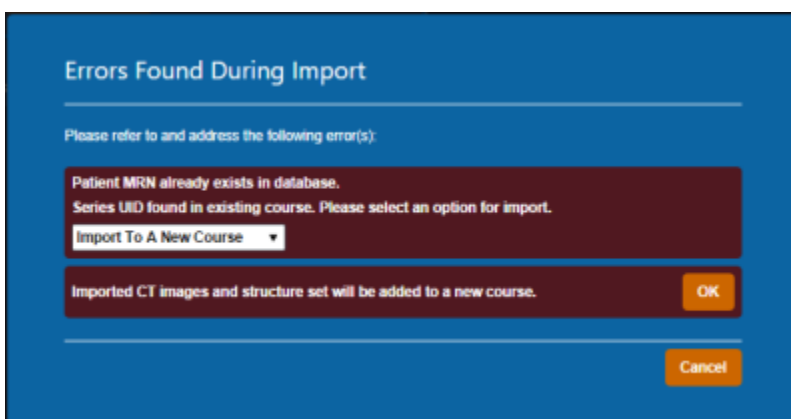


Fig. 10: Importing as a New Course

Re-import Structures

Re-Importing structures can be used if your goal is to update or add structures to an existing patient Course.

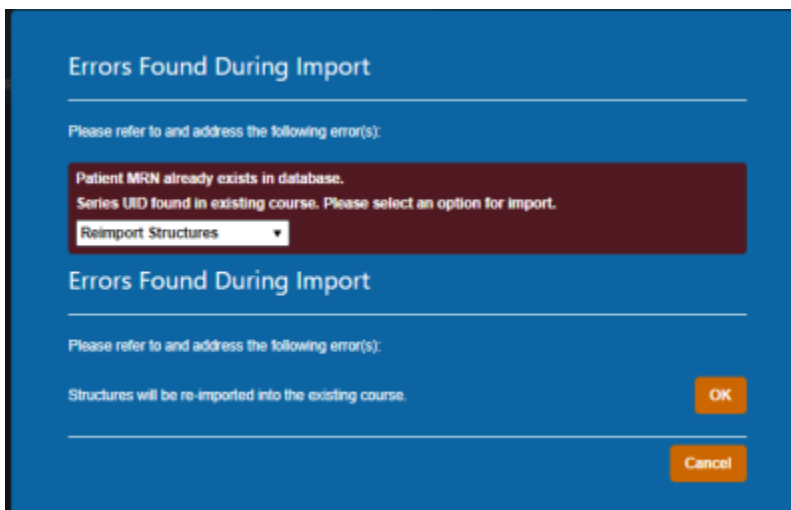


Fig. 11: Re-Import Structures

After selecting this option, you will be presented with a list of the structures in the import.

For each you may select one of three options:

- **Do not Re-import:** Skips this structure for the re import.
- **Replace existing geometry:** Replaces the existing structure in the current Course with the imported one.
- **Import as new structure:** Imports the structure to the Course as a new structure while not affecting the existing one and allows the user to specify a new name for the new structure. If the structure does not exist currently it creates it as normal.

Errors Found During Import

Please refer to and address the following error(s):

Patient MRN already exists in database.
Series UID found in existing course. Please select an option for import.

Reimport Structures

Errors Found During Import

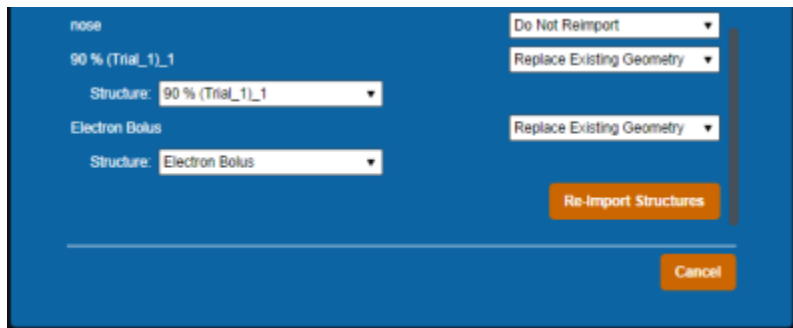
Please refer to and address the following error(s):

PTV	Do Not Reimport
PTV 6840	Do Not Reimport
Rt Parotid	Do Not Reimport
Cord	Do Not Reimport
Cord+5	Do Not Reimport
Ant avoid	Do Not Reimport
Post avoid	Do Not Reimport
Rt Eye	Do Not Reimport
Lt Eye	Do Not Reimport
External	Do Not Reimport
ROI US 1CM	Do Not Reimport

Cancel

Fig. 12: Re-Importing Structure List

Once you have made your decision for each structure you must select “Re-Import Structures” to finalize your changes.



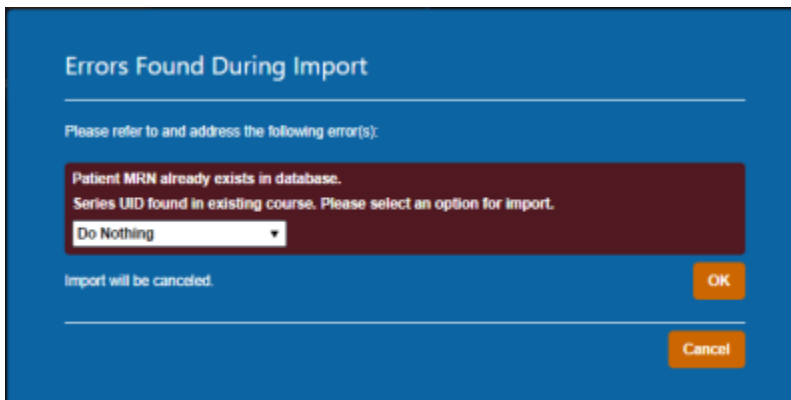
Structure	Action
nose	Do Not Reimport
90 % (Trial_1)_1	Replace Existing Geometry
Electron Bolus	Replace Existing Geometry

Buttons: Re-Import Structures, Cancel

Fig. 13: Finalize Re-Import

Do Nothing

This is the simplest action, selecting “Do Nothing” will cancel your import and return you to the main menu.



Errors Found During Import

Please refer to and address the following error(s):

- Patient MRN already exists in database.
- Series UID found in existing course. Please select an option for import.

Do Nothing

Import will be canceled.

Buttons: OK, Cancel

Fig. 14: Do Nothing

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Last update: **2021/07/29 18:24**

