Tutorials

Launching ElectronRT

In order to Launch the decimal ElectronRT app you must use the decimal Launcher to authenticate and open your desired application.

NOTE: You will need your .decimal Direct user Log in.

1. Download and install the decimal Launcher.
2. Log in with your .decimal credentials.
3. Find decimal ElectronRT and download/launch the application.

For further instructions please refer to the decimal Launcher User Guide.

2022/08/31 18:29

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 the sections below for details on each option.

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.

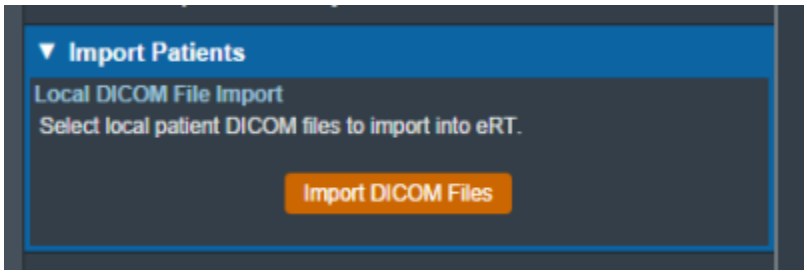

Fig. 1: Import in the Main App Page

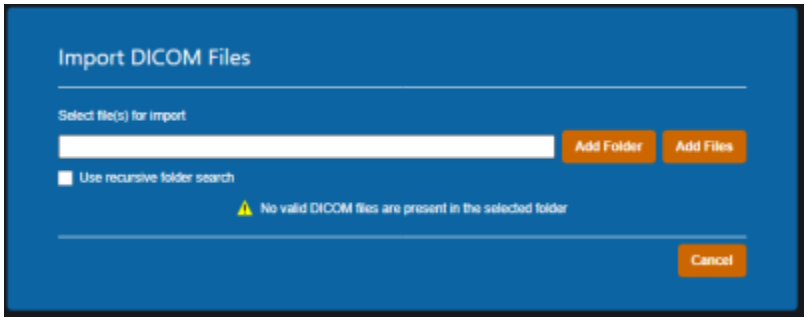

Fig. 2: Import Directory Input

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 reclusively 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, any DICOM patients sent to the ElectronRT DICOM Receiver will automatically show up within the Import Patients display as shown in

figure 3.

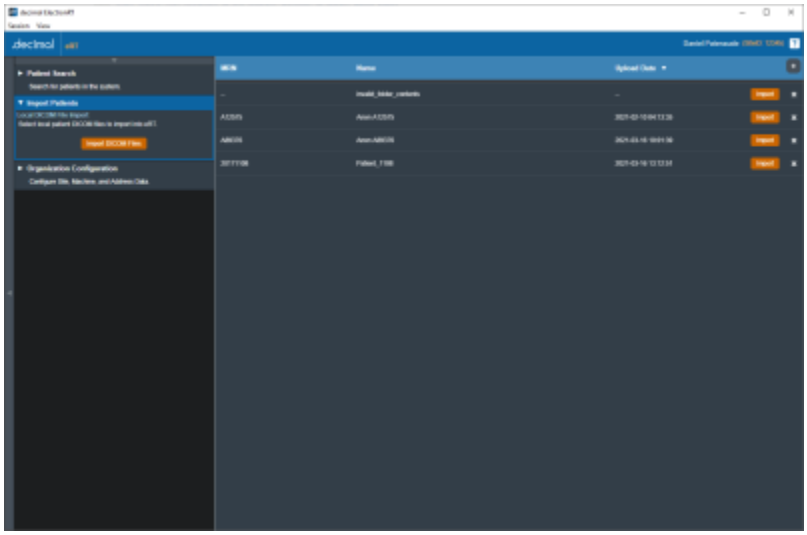

Fig. 3: DICOM Receiver Patients

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 for import.

Processing Imports

Clicking the Import button will start processing the selected files.

Fig. 4: Import Loading screen

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

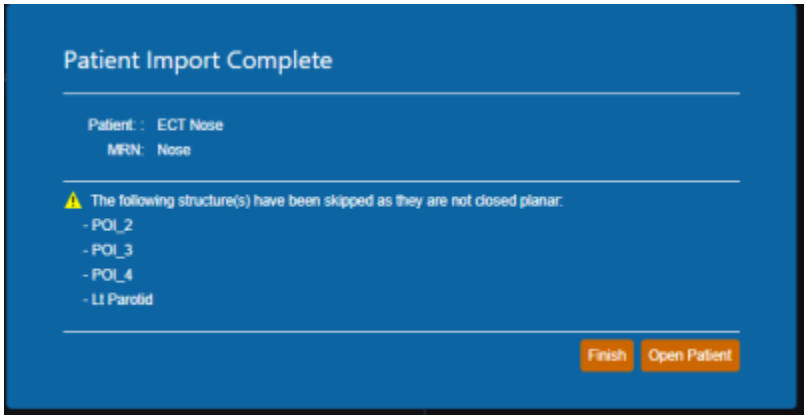

Fig. 5: Import Finalized

If there are errors, please refer to the Common Errors section below for further details.

Importing DICOM Plans

Users have the option to import DICOM Plan files in addition to CT images and structure sets. For now, only electron plans can be imported into the decimal ElectronRT app. When importing a new patient, the DICOM plan file must have the proper UIDs that reference the structure set in order for the plan to be successfully imported. An imported plan will appear under the course of the new patient and will be marked as imported.

Refer to the Imported Plans section for more information on imported plans.

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.

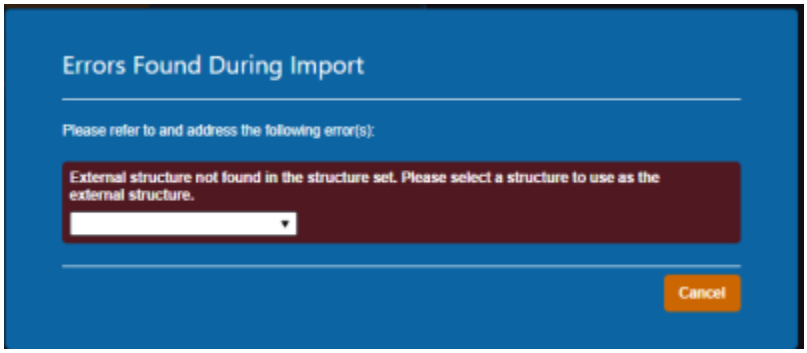

Fig. 6: Missing External Error

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”.

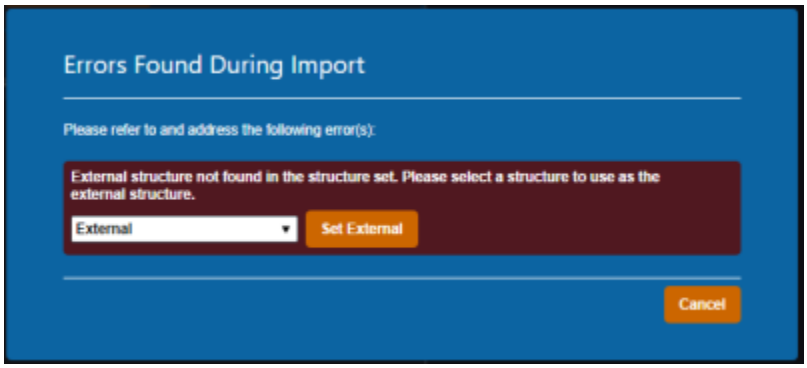

Fig. 7: Set External Dialog

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.

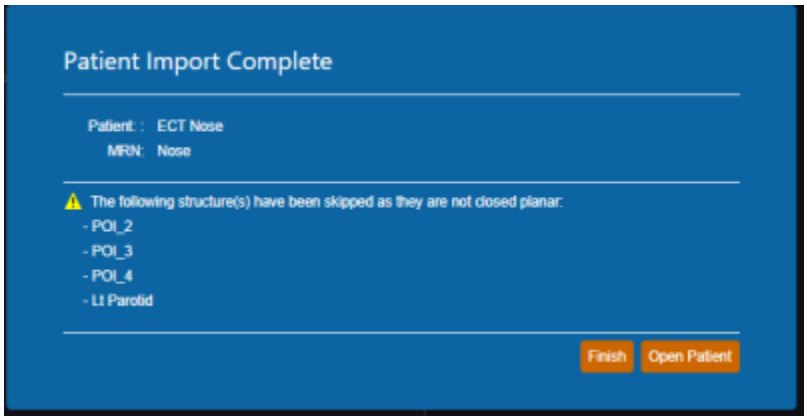

Fig. 8: Import Finalized

Importing an Existing Patient

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

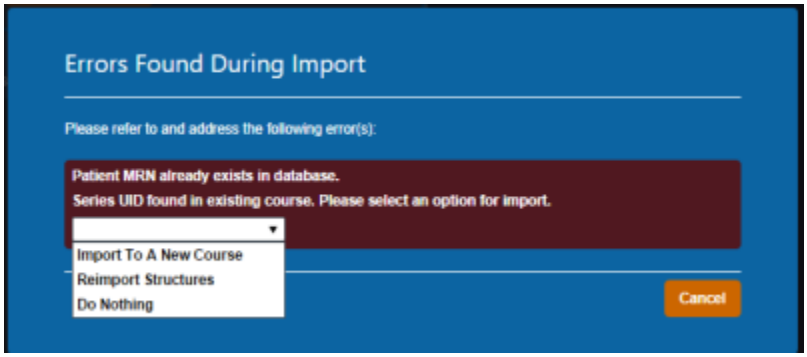

Fig. 9: Existing Patient Error

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).

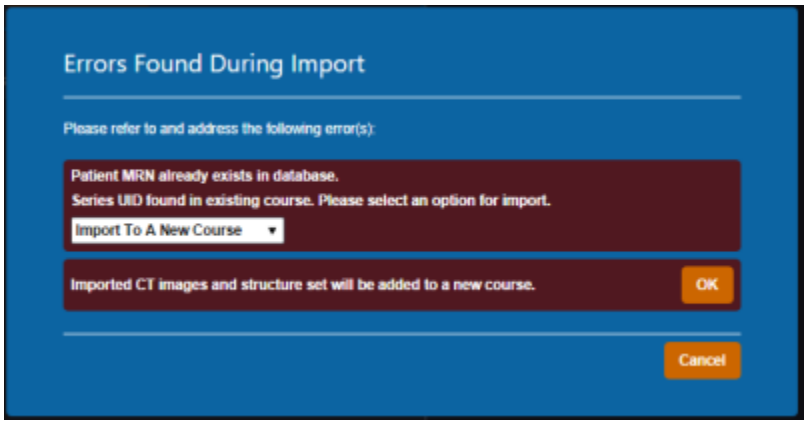

Fig. 10: Importing as a New Course

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.

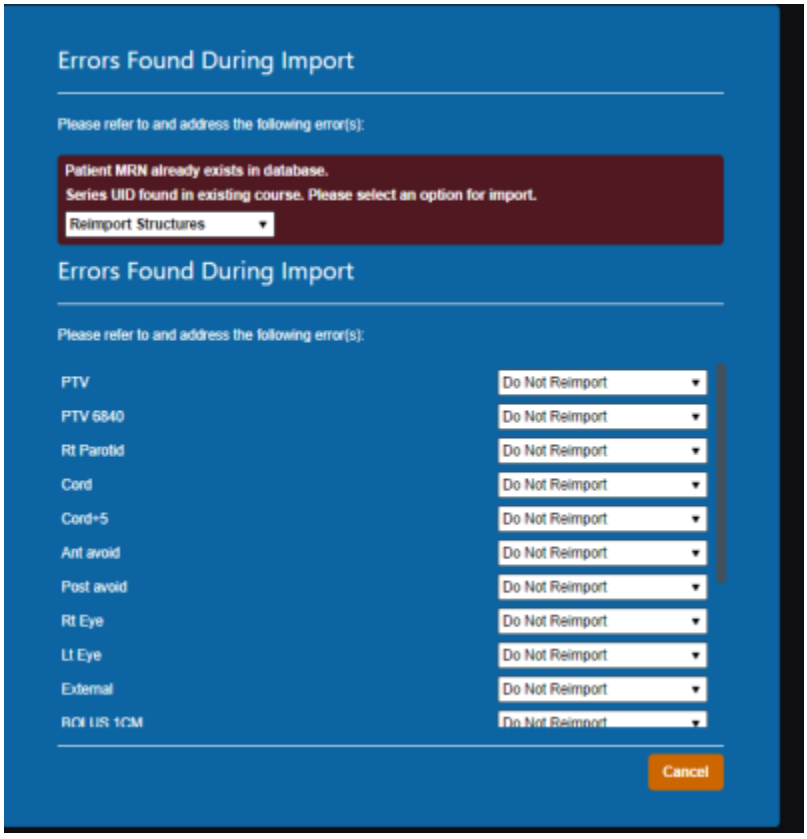

Fig. 12: Re-Importing Structure List

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

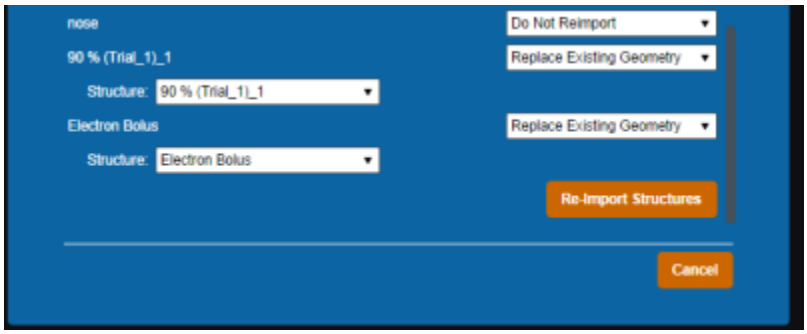

Fig. 13: Finalize Re-Import

Do Nothing

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

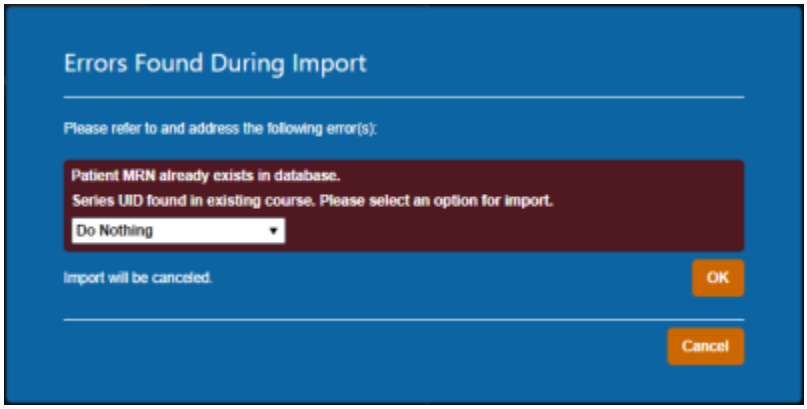

Fig. 14: Do Nothing
2020/06/02 13:32

Patient Courses

Once you have a Patient imported you will need to set up a Course for that patient before being able to create any treatment plans. A Course is used to define the patient's anatomy (e.g.: a single DICOM Structure Set and CT Image Set).

The Course Information settings decided here will be inherited by any plans in this Course and can be edited in the Course UI later to update all non-approved plans within the Course.

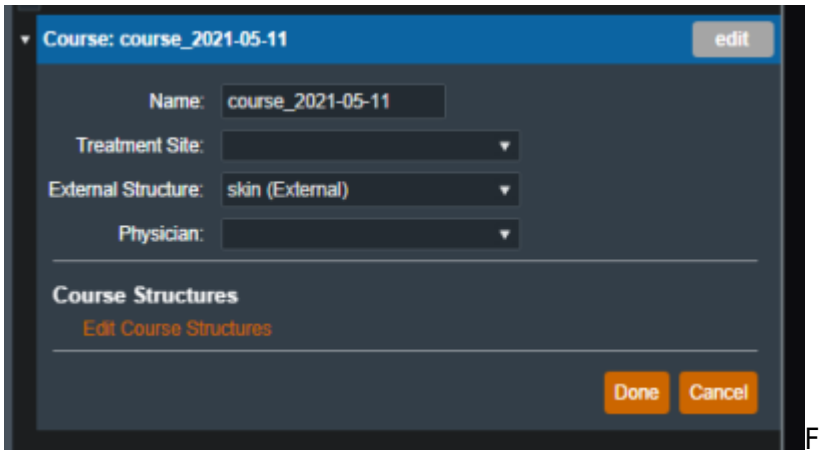

Fig. 15: Empty Course Block

Course

In the Course block you can set the following fields:

- **Name** : Initially this label is automatically generated but can be changed as desired.
- **Treatment** Site : This list is taken from your site settings, you are able to add or remove treatment sites from the Site Configurations block. For more information please refer to the Site Settings.
- **External Structure**: The external structure will be automatically determined based on DICOM structure types during import. You are also able to override the initial selection with any other structure in the structure list if desired.
- **Physician** : This list is taken from your site settings, you are able to add or remove physicians from

the Site Configurations block. For more information please refer to the Site Settings.

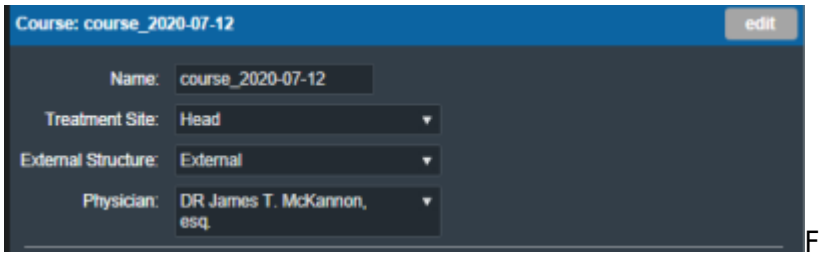

Fig. 16: Course Example

Course Structures

Certain tasks within eRT require structures to be set to a specific type, and their type is set based on the DICOM RT ROI Interpreted Type (3006,00A4) tag during initial patient import. The Course Structures user interface allows users to change the type of each structure within the patient course.

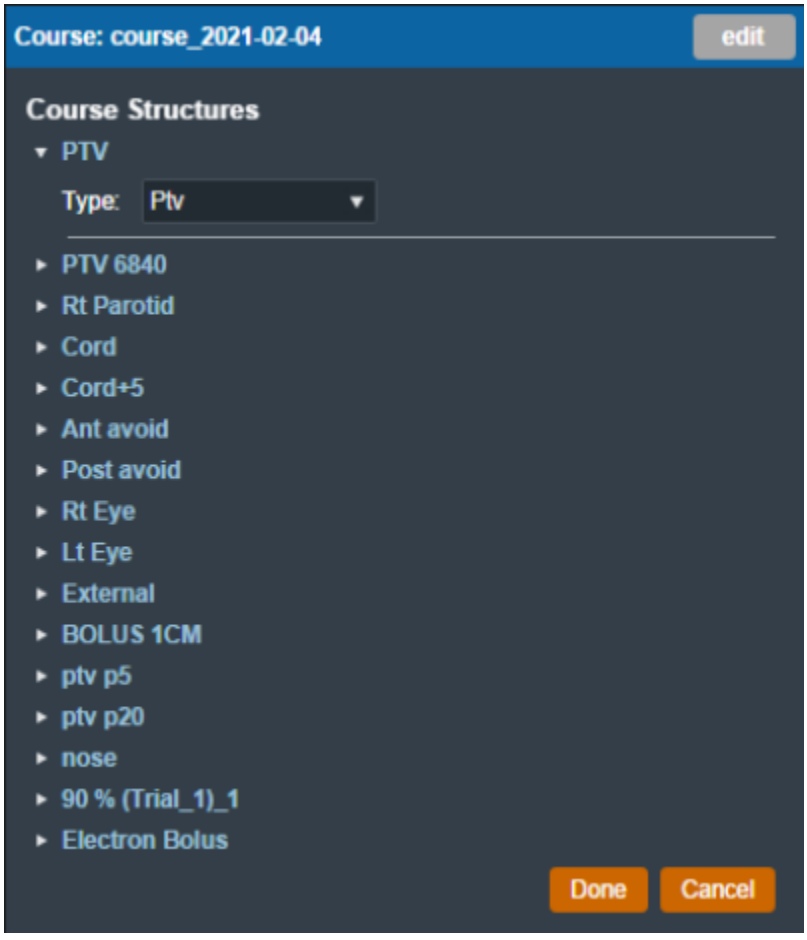

Fig. 17: Editing Course Structures

Note: The RT ROI Interpreted Type (3006,00A4) tag is optional in a DICOM RT Structure Set. As such, the structure type drop down may be empty if no structure type was specified in the imported DICOM files.

2021/07/29 18:28