decimal eRT Commissioning Guide

Overview

The decimal ElectronRT (decimal eRT) app is designed to allow users to accurately compute the delivered dose to a patient undergoing electron beam therapy. However, the accuracy of such calculations is highly dependent upon the proper initialization and maintenance of the system commissioning data. This document is intended to serve as a guide to aid users in performing these critical commissioning processes. Commissioning and acceptance should only be completed by a Qualified Medical Physicist (QMP) and any such QMP performing these processes should read this entire Commissioning Guide, the complete eRT Instructions For Use, and sign the appropriate acknowledgement of responsibility. Additionally, such QMP should be appropriately educated and licensed to perform such tasks as per their local laws and regulations.

Approach

For clinical users, .decimal staff will assist in the preparation of the eRT commissioning data files, using user provided measurement data files. Users must attest to the accuracy and completeness of any provided measurement data and .decimal recommends an independent 3rd party is used to review such data for accuracy. Clinical users will be provided a list of measurement data necessary to complete the eRT commissioning process, or alternatively, for users that already have a commissioned electron TPS, a list of data to export from their existing system. From this data, .decimal staff will create the eRT commissioning data files as described below.

Commissioning Data Structure

Two types of data are used by this application for commissioning purposes: 1) data entered manually into eRT through the software user interface and 2) pre-prepared data files imported into the software. Manually entered data is typically used for administrative level information, such as machine name & type, and machine geometric parameters, such as the physical SAD, rotation directions, and reference positions. Imported data files are typically used when measured data is involved, such as for CT (HU) to stopping power curves, percent depth dose data, beam in-plane profile data, and output factors for absolute dose calibration. For details on the CT Curves data files, please click here; for all other commissioning data files, continue reading below.

Structure of the Machine Data Files

Details to be added here