decimal3D User Guide

Overview

The primary purpose and intended use of this device is to improve the efficiency of designing patient specific radiation therapy beam-shaping block devices through the use of optical scanning technology. This device will serve as a direct replacement to the current processes for designing such radiotherapy devices in cases where a "clinical patient set up" is used (i.e. cases where the treatment field is determined by direct physician examination, not by internal imaging technology). One such common current process is for electron therapy clinical setups, which involves hand drawing of the patient-specific aperture shape onto a semi-transparent "template" block, using the treatment light field to verify accuracy against the treatment area that has been outlined directly on a patient by the treating physician. This now flattened and projected aperture shape can then be scanned and digitized allowing for computer controlled fabrication. This new decimal3D device will replace this process by providing a means to accurately scan and digitize the treatment area. After the surface scan is obtained, this device also provides a means for designing and ordering the required devices (e.g. digitization of the field for electron apertures), analogous to the current digitization process in the existing clinical workflow.

This product is not intended to replace CT imaging or other internal imaging modalities and should be used only in cases where a qualified Radiation Oncologist has made appropriate determination of the acceptability of a "clinical patient set up" approach, independent of any information provided by this application. In other words, the role of this product is to simply ensure efficient and accurate ordering of a patient-specific device from our company, in cases where a licensed Radiation Oncologist has predetermined that such a device and treatment approach is appropriate for the patient at hand. Thus this device's indications for use include patients with a variety of cancer and disease conditions, which will be treated under the direct supervision and guidance of a radiation oncologist that has prescribed a desired dose of radiation to be delivered to the patient.

Purpose

The purpose of this document is to provide guidance on the setup, access, and usage of the decimal3D App.

Getting Started

Proper use of this software is critical to safe and effective treatment of patients using devices generated by this application. Users are expected to read and understand this complete User Guide including the Instructions for Use, which outlines the general usage principles and limitations of the decimal3D App. Users must read and understand these instructions before operating the system for clinical use. Refer to each section below for complete details:

- **Instructions for Use**
  - Overview and Indications for Use
  - User Responsibilities
  - Warning
  - User Profile
  - Product Features
- Electron Block Walkthrough Tutorial
- Patient Setup Photo Tutorial

Precautions

It is the responsibility of those utilizing this application to ensure all that all usages of this product relating to patient treatments are performed by trained and qualified personnel only and that such personnel is aware that the quality of any generated treatment plans is highly dependent on the quality and correctness of the input data; therefore if any questions or uncertainties exist regarding the quality, units, or identification of input data arise, they must be investigated and resolved before the data are used.

Initial Setup

Your decimal3D App will arrive pre-installed and pre-calibrated on a 7th generation Apple iPad, which has been assembled with a Structure Sensor Mark II (by Occipital). So your decimal3D system will arrive in a ready-to-use state (please refer to the Instructions for Use herein for some additional set up instructions regarding iPad security). Also, please note that after the initial purchase, all hardware concerns, including damage or warranty repairs, should be directed to the appropriate hardware provider.

On first use of decimal3D users are also responsible for confirming the accuracy of machine data using .decimal's p.d App. This data will be used in decimal3D for determining the brand of your linear accelerator, the available electron applicator sizes, and tray location. Users should complete a site survey found at https://dotdecimal.com/site-survey/ if they do not have an account with .decimal and our staff will assist users in setting up machines via p.d.

Network Requirements

decimal3D uses decimal Direct via HTTPS to authenticate users, request machine data, and order patient hardware. This address and port must be open to passive communication with external addresses from the iPad that is running decimal3D. Note that all communication is initiated from decimal3D (i.e., there should be no need to forward ports to the iPad), however, you must ensure that the following address be allowed to communicate with the iPad running decimal3D in order for the application to function properly:

Server URL	direct.dotdecimal.com (64.128.252.104)
Port	443

[The](#)

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document provides further details about the network requirements, accounts, and data saved and transmitted by the application.

Application Features

The following descriptions are thorough guides providing complete information about each task within the decimal eRT application.

- [Standard Block Shapes](#)

Training

While .decimal3D has been designed to be simple and intuitive, live (web-based) training is included with your purchase of the decimal3D application. Please contact our customer service team to schedule a private training session at your convenience.

System Usage

Improper System Usage

When using decimal3D, as with any complex program, there is the potential for misuse. The decimal3D App should be used under the guidance of a physician by authorized users such as physicists, certified medical dosimetrists, radiation therapists, and other licensed clinical staff who have been trained by the .decimal staff or by the clinical staff.

decimal3D allows users to enter custom information (COMP_ID field) that will be engraved onto patient specific devices (e.g. blocks and bolus) to aid in proper identification and usage of our products. Please note however, that PHI and PII should never be entered into these fields, as your devices will be delivered via shipping services that cannot guarantee HIPAA-compliance of the packages throughout the entire shipping and delivery route.

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