Overview

The .decimal astroid Dosimetry App device is used for planning and analysis of proton radiation therapy treatments. The astroid Dosimetry App device is not an interactive end user application. Users of the system will write scripts or use a fully interactive software program that makes calls to the functions provided by the astroid Dosimetry App. The core functionality includes various CT image processing tools, structure and contour modification operators, proton dose calculations, proton aperture and range compensator device design algorithms, and many other radiotherapy specific calculation functions.

Access to the astroid Dosimetry App is provided by the thinknode™ framework using http json formatted requests. thinknode™ provides the 'backbone' used to send and receive requests, maintain users, realms and organizations, and provide data storage and management.

Note this product received 510(k) clearance as of May 15, 2015.

User Guide

The Dosimetry App user guide lists all avaliable api function calls, as well as gives examples of usage and explanation of the affects.

Getting Started Connecting to thinknode™ api and initial setup of the astroid Dosimetry App.

Function Categories Dose Calculation Functions (DCF), Design Task Functions (DTF), and Radiotherapy Support Functions (RSF) available through the thinknode™ api.

Data Types astroid Dosimetry App datatypes available through the thinknode™ api.

Proton Delivery System Details about coordinate systems and beam representations.

Calc Provider Examples thinknode™, DCF, DTF, and RSF example projects and usages.

Known Limitations Known application limitations, defects, or inconsistencies.

Commissioning Guide

The Dosimetry App Commissioning Guide outlines and walks users through the process of creating a machine model of a clinical proton therapy beamline.

Getting Started Setup and data collection.

Testing Responsibilities Here's what you have to test before clinical use can begin

Data Requirements Lists and describes the data needed for commissioning a proton beam model.

Example Data Here's an example machine model

Instructions For Use

The Dosimetry App Instructions For Use outlines the intended use and user requirements of using the Dosimetry App.

Overview Intended use and indications for use of the application.

User Profile Recommended user education and experience level.

Warning Warning of potential misuse.

Testing Responsibilities Testing responsibilities for ensuring correct setup and configuration of the astroid Dosimetry App.

Product Features High level features of the astroid Dosimetry App.

Reference Documentation

Hong et al A pencil beam algorithm for proton dose calculations

Slopsema Incorporation of the aperture thickness in proton pencil-beam dose calculations

IAEA-TRS-430 Commissioning and Quality Assurance of Computerized Planning Systems for Radiation Treatment of Cancer

IAEA-TECDOC-1583 Commissioning of Radiotherapy Treatment Planning Systems: Testing for Typical External Beam Treatment Techniques

Park Commissioning Commissioning a Proton Therapy Machine and TPS

About

The latest stable version is 1.0.0 which was approved for release on 10/Sep/2015.

Support

For questions, comments, or to schedule a training session, please contact our customer support team at: appsupport@dotdecimal.com

---

USR-009

.decimal, LLC. 121 Central Park Place Sanford, FL 32771. 1-800-255-1613