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#### **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<sup>™</sup> api and initial setup of the astroid Dosimetry App.

**Proton Delivery System** Details about coordinate systems and beam representations.

Function Categories Dose Calculation Functions Calc Provider Examples thinknode™, DCF, DTF, (DCF), Design Task Functions (DTF), and Radiotherapy Support Functions (RSF) available through the thinknode<sup>™</sup> api.

and RSF example projects and usages.

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

**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

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Data Requirements Lists and describes the data Example Data Here's an example machine model needed for commissioning a proton beam 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 User Profile Recommended user education and the application. 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 Radiotherapy Treatment Planning Systems: Radiation Treatment of Cancer

IAEA-TECDOC-1583 Commissioning of Testing for Typical External Beam Treatment **Techniques** 

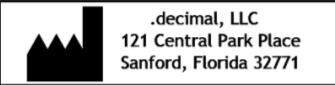
**Park Commissioning** Commissioning a Proton Therapy Machine and TPS

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### **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

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