TECHNICAL DATA SHEET
VERIMA DESK

verima

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Introduction: Verima

Verima is a solution developed to facilitate clinical decision-making and simultaneously assist the physician's work and relationship with the patient.

Verima consists of four applications that are integrated with each other: **Verima Desk**, a web platform that enables generation and management of 3D cases from CT and MRI; **Verima Tool**, a standalone PC software that enables analysis and segmentation of the output file generated by diagnostic imaging; and **Verima Viewer**, an application for *Mixed Reality* viewer and camera-equipped mobile devices.

Verima's main purpose and goal is to assist in training healthcare professionals, to whom remains the ultimate responsibility for therapeutic choices made, by offering a three-dimensional representation of the data available from imaging, especially computed tomography (CT) examinations.

Verima is a class I medical device, registered under no. **1947525/R** in the Ministry of Health database.

Classification

1. Medical device Class	Classification in Class I: Given Annex IX of Directive 93/42/EEC concerning medical devices, in Section I point 1.4, which considers stand-alone software to be an active medical device, given, in Section III, the non-applicability of Rules 9 (point 3.1), 10 and 11 (point 3.2), and given Rule 12 (point 3.3), the Verima software falls into Class I.
2. Intended Purpose	Facilitated communication between physician and patient.
3. Target Context	Designed to be used in the healthcare field.
4. Actual use	The actual software use is characterized by providing the surgeon with a qualitatively better visualization of the region of interest, by providing the latter in the form of a hologram, that is, a realistic three-dimensional representation with depth perception and observable from different perspectives.
5. Context of use	Use as support in the consultation phase with the doctor/patient and in understanding the anatomy of the case under examination.
6. Possible health and/or safety effects	The main objective of the software is to support healthcare providers to whom remains the ultimate responsibility for the therapeutic choices made. Its main feature is to provide visualization of a realistic three-dimensional representation of the images coming from tomographic

	examinations, which are not modified or manipulated in any way, but segmented to reconstruct the holographic model, reporting what can already be visualized from the CT radiology report. The use of the hologram is mediated by the interpretation of the surgeon, that is, the product user.

Verima Desk

Verima Desk is configured as the web platform for managing and creating 3D clinical cases from DICOM and STL files. Cases of interest are uploaded to the portal, where they are processed and cataloged in a personal library. Users can manage their profile and access their cases directly from the web, wherever they are.

Access to Verima Desk is granted through credentials obtained by the user when registering for the service.

Product characteristics

- Import of 3D models in *STL* format, generated by segmentation of CT and MRI examinations or obtained from third-party software, and creation of associated clinical cases.
- Rapid reconstruction of the 3D model for the case of interest from the *STL* file.
- Uploading clinical case DICOM file to request its segmentation and subsequent generation of the corresponding 3D anatomical model.
- Realistic representation and visualization of the 3D model via web interface.
- Interaction with the 3D model through: displacement, rotation, and magnification.
- Sharing the 3D model of the clinical case with multiple users.
- Favorite cases management.

The needs it addresses

- Access to segmentation service operated by our staff experts.
- Management and cataloging of clinical cases associated with the healthcare professional.
- Intuitive understanding of the clinical case and interaction with it via 3D model visualization.
- Case sharing with colleagues/patients.

Architecture

Components used for development
- Javascript: reference programming language for web application development.

- CSS and SASS/SCSS: style sheets for defining the appearance of the web application.
- HTML5 for defining the structure of the pages that make up the web application.
- ReactJS framework and related libraries for developing the web application that implements the GUI, Graphic User Interface - User Interface.
- vtk.js library for displaying holograms.
- Axios library for ajax calls.
- Fflate library for file compression.

Supported browsers

Verima Desk supports all recent versions of modern browsers i.e. Edge, Firefox, Chrome, Safari. Verima Desk also works properly on older versions of the above-mentioned browsers as long as they support ES6 and WEBGL2. *
More details regarding the compatibility of your browser can be found at the following sites:

- https://caniuse.com/es6
- https://get.webgl.org/

Verima Desk has no specific requirements regarding operating systems as long as:

- installation and use of one of the supported browsers is possible;
- The operating system provides sufficient computational resources (modern CPU and at least 4GB of RAM).

Lack of computational resources or the use of a very old integrated graphics chipset could cause slowdowns in hologram display and manipulation.

User information

A user manual is included with the software to guide the user in installing and using the product.