GLOSSARY

Technical Terminology

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Verima is a product developed by **Witapp SRL**

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Glossary

Term	Definition
DICOM (*Digital Imaging and Communications in Medicine*)	DICOM is a standard that defines criteria for communication, display, storage, and printing of biomedical information such as radiological images. The DICOM standard is public in the sense that its definition is accessible to all. Its diffusion proves to be extremely beneficial because it provides a solid basis for information interchange between equipment from different manufacturers, servers and PCs, specifically for the biomedical field.
Hologram	Holograms are 3-dimensional replicas of an object or, more specifically, 3-D reproductions of the recorded image of a certain object. In addition to possessing 3 dimensions, holograms have the peculiarity of being stereoscopic images, that is, they appear different depending on the point of view from which they are viewed.
Segmentation	Segmentation is the partitioning process of an image into meaningful regions. It is used to obtain a more compact representation, to extract objects, or as a tool for image analysis, and allows digital images to be partitioned into sets of pixels. The purpose of segmentation is to simplify and/or change the representation of images into something that is more meaningful and easier to analyze. Segmentation is usually used to locate objects and edges (lines, curves, etc.). More specifically, segmentation is the process by which image pixels that have common characteristics are classified together, so that each pixel in a region is similar to others in the same region due to some property or characteristic (color, intensity, or texture). Adjacent regions are significantly different with respect to at least one of these characteristics. The result of a segmented image is a set of segments that, collectively, cover the entire image.
STL (Stereo Lithography interface format or *Standard Triangulation Language*)	An STL is a file format, binary or ASCII, created for CAD stereolithography softwares. It is used in rapid prototyping through CAD software. An .stl file represents a solid whose surface has been discretized into triangles. It consists of the X, Y and Z coordinates repeated for each of the three vertices of each triangle, with a vector to describe the orientation of the normal to the surface. On one hand the STL format has advantages, such as simplicity, since it is very easy to generate and process, while on the other hand it has approximate geometry and its data structure, which while simple, may have the repetition of the same vertex multiple times. STL format files can be viewed or corrected with open-source tools such as MeshLab or commercial tools.

	STL format is one of the main formats used in 3D printing.
Artificial Intelligence (AI)	Artificial Intelligence is the ability of machines to learn through experience, that is, through observation and imitation of the human mind capabilities. Machines store information useful in performing various tasks and then replicate it just as humans would. When talking about Artificial Intelligence (AI), it is being talked about in particular about Machine Learning (ML) and Deep Learning (DL). In ML, the algorithms learn from experience and are then able to perform specific tasks automatically. In DL, the learning mechanism exploits neural networks, that are structures inspired by the functioning of the neural connections in the human brain. Using DL models it is possible to automatically and accurately segment the DICOM files, identifying the various anatomical components and organs of interest.
Cloud	Cloud services consist of hosted infrastructure, platforms or software (pages are allocated on a web server and therefore reachable and visible to users on the network) at external providers and made available to users through the Internet. Using Cloud services means being able to enjoy your digital content synchronized with each other at all times.
Visor	A visor is an innovative wearable device that allows computer-generated 3D images to be superimposed on real-world objects by projecting a digital light field into the user's eyes.
Augmented Reality	Through Augmented Reality, virtual elements are inserted into the real environment around us. The superimposition of digital information on the real context recreates a hybrid environment between virtual and reality that can deliver enhanced experiences.
Mixed Reality	Mixed Reality aims to create an environment where real and virtual converge and the user can consider virtual objects as if they really existed in physical space. It is a technology that requires specific hardware i.e., a mixed reality viewer and allows holograms to be displayed in reality as if they were part of the surrounding space.