eIMES 3D

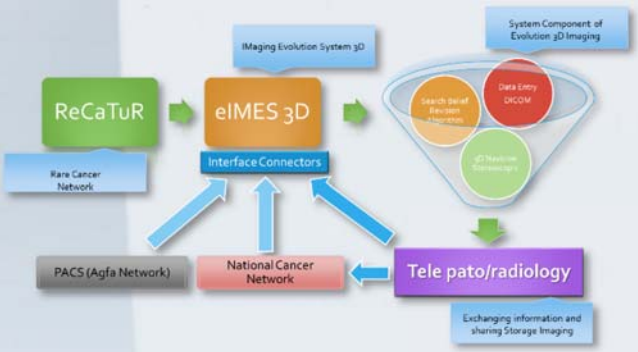
eIMES 3D - "IMaging Evolution System 3D", is a software that supports the oncology medical team by providing facilities for case studies analysis and diagnostic imaging. It has been developed by using the "Hub-Spoke" oncology model, within the Calabrian project ReCaTuR, a professional network that allows the management, organization and distribution of medical information.

The strength of eIMES 3D in facing rare and complex diseases states in allowing the interconnection and integration of data provided by different departments, external structures and research institutes.

eIMES 3D is a software system that allows to communicate with one or more networks. Through the use of a connection interface the system allows to interact with the network of rare cancers (ReCaTuR), the national network of cancer (National Cancer Network) and the local storage that contains 3D imaging data.

The system is based on an enterprise-type development model that allows to design an integrated software platform suited for medical and technical specialists of the Complex Operative Unit of Medical Oncology, for the management, analysis and visualization of imaging data in 3D stereoscopic environment. This platform is supported by innovative technologies in 3D stereoscopic domain, as it makes use of programming paradigms and patterns based on advanced development framework, thus ensuring scalability and modularity.

eIMES 3D allows: full control and management of the data by means of artificial intelligence algorithms; advanced stereoscopic 3D visualization by using the WebGL innovative technology; sharing medical data in DICOM format; distribution of 3D imaging data on different output devices (web, TV, mobile); query the system through a search of the various case studies, with objective parameters that are logically connected to a "neural network of knowledge".



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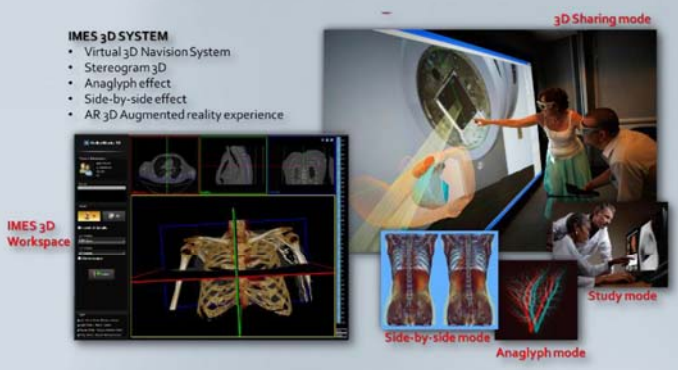

eIMES 3D is equipped with a series of modules that allows full control of the data research facilities by means of the inclusion of new data ("DICOM Data Entry"). The "3D Navision System" component provide advanced 3D visualization of imaging data.

The artificial intelligence algorithms ("Dashboard Control & Belief Revision Algorithm") support medical team in decisional process, tele consultation allows sharing data with external structures and departments ("Tele medicine").

eIMES 3D shows information in 3D stereoscopic mode (anaglyph and side-by-side) using an innovative technology called WebGL, that deploys 3D imaging data on different output devices (web, TV, mobile,). The technological infrastructure is based on a central server farm, that stores information useful for case study analysis. eIMES 3D can create one or more workspaces used by the medical team to share data and information into a geographical virtual space.

The software is proposed as a valuable technological support to the medical profession, without in any way reducing medical role and expertise in the approach and in the clinical case resolution. The computer system receives, stores, processes and transmits biomedical images through stereoscopic techniques; the high definition of the images allows remote diagnosis. The ability to build plug-in modules enables to easily implement new features in eIMES 3D, so that ensuring its further development and its sustainability.