sesamenet
SUPERCOMPUTING EXPERTISE FOR
SMALL & MEDIUM ENTERPRISE NETWORK

Use of Virtual 3D anatomic models in health sector

HPC-Competence Center

Galician Supercomputing Center is a public HPC Center; bringing HPC, High bandwith comunications, storage, and advanced services to the Galician research community, Galician university academic system, the Spanish National Research Council and industry, particularly SMEs. It aims to contribute to the advancement of science and technology, through research and application of HPC and other information technology resources for the benefit of society as a whole.

CESGA

Enterprise

DQBITO is a Spanish SME with two employees dedicated to introduce technical and engineering resources to solve problems in the health sector and designing detailed 3D anatomical models. These 3D models are used in many health specialties, built based on all the data gathered in medical tests, helping the professionals to make decisions and explore different solutions in complex surgery. It also designs and builds prosthesis for people and elements to meet clinical and surgical special needs.

How HPC makes the difference

The challenge in designing virtual models of human body parts is to get as close as possible to reality, considering the high amount of data and variables to take into account, due to the geometric complexity of the elements involved. The closer you get to reality, the higher your possibilities to success. If you can get a detailed model for each patient, you can develop the best solution for each one. In dental implantology get the most detailed model of a patient anatomy is a key to success, because of the high loads involved in it. To get the highest detail level and load simulation, HPC infrastructure is a must, so the enterprise relies on CESGA´s infrastructure and expertise, to achieve it.

DQBITO Biomedical engineering founder member Iago González claimed that CESGA´s HPC infrastructure and expertise was so helpful to achieve the best treatment and regain health and well being for its customers.

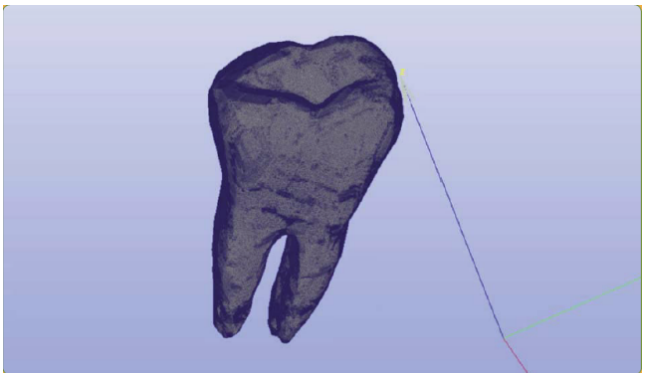

Fig: Tooth virtual 3D model for implantological surgery