Sodalite

Software defined application infrastructures management and engineering

USE CASE : In silico spinal trials for bone operations

What is the functionality of the Virtual Clinical Trials ?

The use case faces three distinct challenges; the simulation pipeline is comprised out of several components which are implemented via different programming languages and exploited on various execution paradigms.

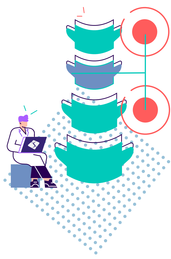
What is the actual problem to solve?

The problem for the use case is, that its simulation pipeline is comprised out of several components, implemented in different programming languages and based on different execution paradigms.

The integration of this simulation process chain and the inclusion of additional steps is an extremely tedious work and requires a platform expert once it comes to a change in the infrastructure the pipeline is deployed on.

SODALITE brings a solution

The clinical trials use-case greatly benefits from the SODALITE deployment model since it abstracts away all the system integration work, tuning efforts and deployment pitfalls from the application user and let the user focus on the essential work to be done with the simulation pipeline which is model development and improvement and by that improved medical device design and personalized medicine.



Empowering tech innovation

Research institutes focused on the development and analysis of biomechanical simulation and modelling methodologies will benefit from the advancements made by the SODALITE methodology especially in the are of unified treatment of data-processing and data-protection issues which are delicate to deal with for inexperienced users. Since we expect to overcome today's rather complicated and not standardized situation with respect to data protection and anonymization in academic computing centers the research institutes will be enabled to exploit SODALITES data protection components on cloud resources and by that greatly ease the ease of data exchange between academic sites and institutes participating in virtual clinical trials.

End user benefits & Society Wellness

By the possibility to more easily deploy and use complex simulation pipelines on cloud computing infrastructures in combination with HPC the effort for applying simulation methodologies in device design and development will be significantly lowered.

Since the combination of the two technologies provide every pipeline component with the needed resources and features like data protection out of the box.

The patients will benefit from an improved device design and personalized medicine in implant application and development which is expected to reduce device failure rates and by that to improve the quality of life after implantation surgery.

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