Digital Single Market

Factsheet / infographic22 August 2013

Researchers take biomedical modelling a step further

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The MSV (Multiscale Spatiotemporal Visualisation) project has defined an interactive visualisation paradigm for biomedical multiscale data and validated it on the large collections of exemplary problems. The researchers also developed a concrete implementation as an open-source extension to the Visualisation Toolkit (VTK), ready to be incorporated by virtually any biomedical modelling software project.

[1]

The MSV project (part of the 7th Framework Program) combined existing knowledge available in Europe, USA and New Zealand and thus achieved 6 important results:

- **Shared vision**. The consortium put together a “White Paper” on biomedical multiscale visualisation to capture the state of the art in multiscale visualisation within and outside the biomedical domain, to summarise the main MSV concepts, and to formalise it into a taxonomy for multiscale visualisation.
- **Exemplary problems**. The consortium collected a set of exemplary problems from different biomedical domains that the multiscale visualisation paradigm should solve effectively; these

examples were used to define the MSV challenges and priorities to be addressed in the implementation phase and also to test the concrete implementation.

- **Best practice**. A survey was undertaken on the different forms that multiscale data may take, the common problems that need to be addressed and the techniques that may be applied to deal with them. For the purposes of the MSV project, the report produced defines, on the basis of the shared vision, the essential characteristics that any biomedical multiscale visualisation application should have and the criteria that programmers should use to guide their development.
- **Collaborative tools**: The consortium reviewed the tools available for an efficient joint implementation of an open source project. This allowed the MSV partners to deploy a state of the art collaborative environment for the development phase. This activity was associated with the important decision on the licence model for the MSV library: to encourage widespread adoption by the community, a BSD-like licence has been associated with the MSV software releases.
- **MSVTK library**: A concrete software implementation, based on best practice, has been developed as an extension to the popular VTK visualisation library and has been made available to the worldwide research community.
- **Demonstrators**: Relying on the MSVTK basic components, applications have also been developed to showcase the potential of the MSV approach in different use case scenarios.

All MSV results are publicly available through its website [2] and the MSVTK portal [3].

Fore more info on the project, please see the attached factsheet.

Read full text [2]
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