

L-51 cooperation potential within area of software engineering

Aim

This note provides short description of a potential for cooperation between division L-51 and other CUT institutes or external academic and industrial partners.

Cooperation scope

We are able to provide **industrial strength solutions** in terms of expertise, services and network infrastructure in the broad scope of applications of information technology in civil engineering.

In particular:

- We are able to participate or consult development of scientific middleware, especially in the stack of tools based on C/C++/Python/Matlab/TclTk.
- We are able to advise on selection of advanced numerical libraries (C/C++/Python/Matlab/TclTk) and help in incorporation of them as a part of client tools stack.
- We are able to help in transforming academic projects into spin-offs within the scope of software engineering: handling software repositories, software projects building, continuous integration, agile development. Keywords: Subversion, Git, Jenkins, ReviewBoard, CMake, Track, Redmine.
- We are able to help research teams to embrace OpenScience (Science 2.0) tools and practices. We can consult or develop solutions for organizing, exploring and sharing experimental and simulation data, enhance research reproducibility and credibility.
- We are able to provide consultancy or develop customised solutions for the tasks of management or visualization of scientific data. Keywords: HDF5, JSON, XML, ParaView, VTK, Matplotlib, OpenGL.
- We are able to provide help in preservation or transformation of legacy scientific applications (also in Fortran77).
- We are able to provide help in application of neural network based techniques for data processing.
- We are able to consult or develop solutions for the tasks in the area of very high level numerical methods. In particular this concerns: geometric modelling, mesh generation, data approximation, nonlinear partial differential equations, finite element method procedures.

Contact

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