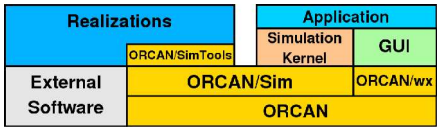
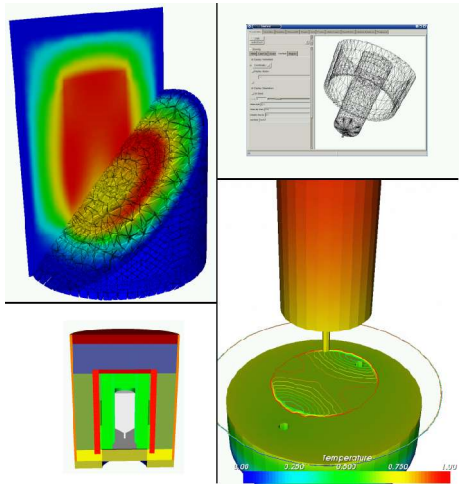
1. ORCAN Workshop

Erlangen, April 26 – 27, 2005





Fraunhofer Institut Integrierte Systeme und Bauelementetechnologie

ORCAN: an **O**pen **R**eflective **C**omponent **A**rchitecture

Three years ago, we started to work on a new project with the main goal to create a software for the calculation of global heat transfer in arbitrary 3D configurations, thereby adapting efficient algorithms from the field of computer graphics to the simulation of radiative heat transfer. To achieve this, an environment was needed to provide e.g. geometry handling, meshing, equation solvers, visualization tools etc. For each of these tasks there are typically several free or commercial solutions available, however, what we felt was missing, was something to glue it all together, especially to glue it together such that the components remain exchangeable. Instead of developing "yet another" monolithic simulation application, we then decided to develop ORCAN.

ORCAN is a set of portable C++ libraries, designed to build the basis for rapid incorporation of existing software packages into large-scale software projects. It consists basically of sets of interface specifications (e.g. ORCAN/Sim for 3D simulation tasks), and mechanisms to dynamically load specific realizations implementing at least parts of these interfaces.

ORCAN components are reflexive: This means, an application can query implementations for its intrinsic para-meters, giving the possibility of auto-matised generation of user interfaces. This possibility has been realized in ORCAN/wx based on the free and portable wxWidgets toolkit. The development of the ORCAN framework itself has reached a stable point now, and currently we are developing the actual simulation application based on it. ORCAN itself, and most component realizations, are freely available. We think that it offers the perspective to make collaborations between groups working on different fields related to numerical simulation easier.

Objectives of the workshop

First, of course, we would like to explain ORCAN, the related libraries, and already existing components to some detail. We then would like to demonstrate in a more practical part how to use it:

- Definition of new interfaces
- Implementation of components
- Creation of GUI elements
- Demonstration of example applications using ORCAN components

In a second part, we would like to discuss possible applications, new interfaces and realizations, and eventually possible cooperations among the participants of the workshop.

All participants are invited to present aspects of their work, that might relate to the topic, or to pose ideas/proposals in a short presentation. Please let us know !

Program

As we do not know at this point whether there will be contributions from participants, there is no fixed program yet.
We will start Tuesday, April 26, about 12^{30} with a small snack. Tuesday will be dedicated to our presentations of ORCAN, and we hope that in the evening we can continue to discuss applications of ORCAN in some pub in Erlangen.
We will then continue on Wednes at 9 a.m. and finish for lunch time.

Location

Fraunhofer-Institute IISB
91058 Erlangen
Schottkystr. 10
Seminarraum 2

Contact and registration

For registration and any questions, please contact Dr. Thomas Jung, IISB
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Organizers

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