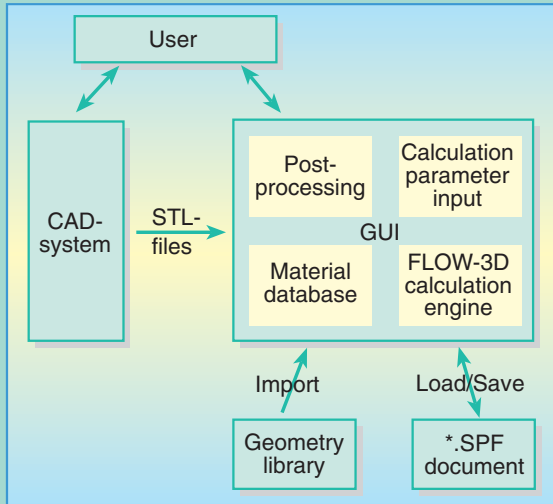


Conifer Cast

New fluid flow and solidification software for advanced simulation of casting processes.



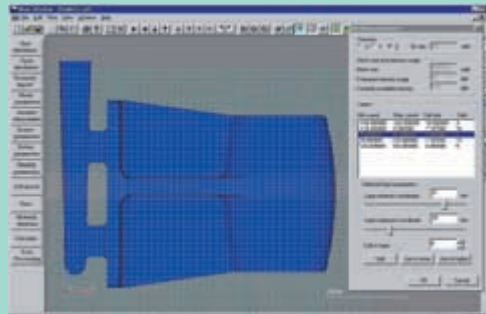
User experience: the simulation model can be built without using CAD-system at all. The necessary casting channels and risers can be added from the user library (even STLs can be modified inside the program).

Conifer Cast features include:

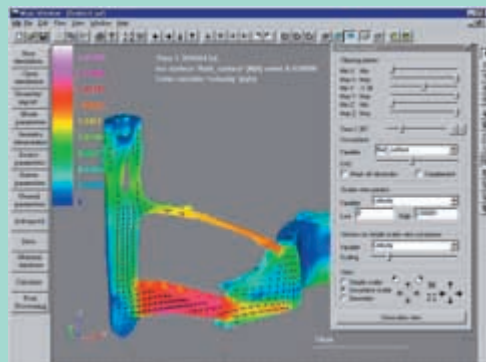
- Easy-to-use interface
- CAD-interface with STL-files
- Internal modeler to add casting system to CAD-model
- Riser-library (Foseco and GTP Schäfer risers)
- Integrated postprocessor including animation movies from fluid flow and solidification processes
- Gravity casting
- High and low pressure die casting
- Lost foam process
- Porous media
- Material data stored in database
- High quality solution using FLOW-3D calculation engine

Conifer Cast is based on FLOW-3D® fluid simulation software. It provides an easy and visual tool for simulating advanced casting processes such as high and low pressure casting. Ease of use and easy learning

lower the threshold to start using simulation as a standard foundry tool in casting system design. In the hands of an experienced user it allows the user to concentrate on the actual problem at hand – the casting system – while still allowing the user to look and manipulate deeper aspects of the numerical solution if so desired.



Setting up calculation mesh. The calculation domain can be divided with variable mesh accuracy, e.g. casting channels can be resolved with smaller elements.

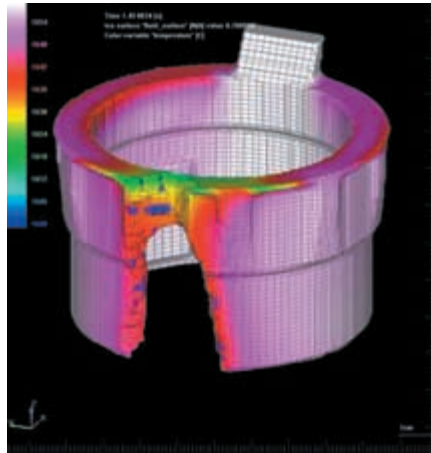


Postprocessing: the filling sequence can be shown with flow vectors. In addition, the adiabatic bubble model can be utilised.

New Conifer Cast simulation software enchains the best features of the FLOW-3D®

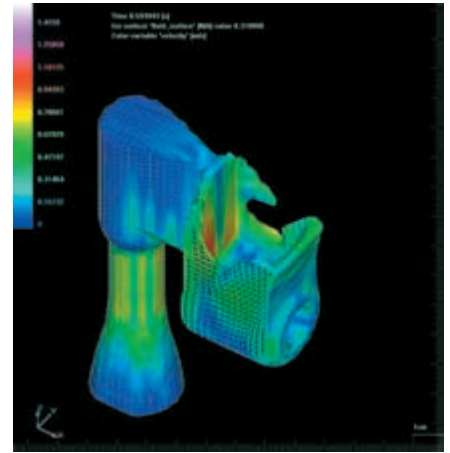
Conifer Cast acts as an interface between the user and FLOW-3D calculation engine eliminating the need for user to concentrate on internal issues of fluid flow simulation. Conifer Cast handles most of the routine tasks for the user allowing him to concentrate on the problem itself. Therefore, user can direct the simulation and use it for sophisticated calculations such as fluid flow with adiabatic conditions without being mathematical expert.

Visual parameters (like object positioning and mesh gridlines) are set visually and the result of a change can be seen immediately. Geometries are imported using STL-format which can be exported from practically all CAD-systems. Casting system can be designed at place using internal geometry library which contains typical channel profiles and large variety of risers (Foseco and GTP Schäfer). Library structure is flexible and own geometries can be added to the library. The Riser library enables user to build the simulation model without using CAD-programs at all.



Lost foam process.

Material data is stored in global material database so that user needs to specify each material his foundry uses only once. After material has been specified it can be referred just by selecting the material from list of material currently found in material database.



Filling simulation.

Postprocessing is done interactively so, that user can make changes to visualization parameters like color variables, cutting planes, iso-surface values, viewport values etc. and see the results with minimal delay. Furthermore, the animation movie files can be selected from desired planes and done with ease.

FLOW-3D is a general purpose CFD-software package capable of simulating a wide variety of fluid flow problems.

FLOW-3D uses control volume meshes enhanced with FAVOR-method and VOF-method for accurate modelling of free surfaces in the flow. FLOW-3D also contains wide collection of numerical methods and physical models much beyond the requirements of plain casting simulation.

Some additional application areas of FLOW-3D include:

- Ink jets
- Thixo casting
- Hydraulic systems
- Moving systems
- Non-newtonian fluids (plastics)
- Shallow water model
- Chemically reacting flows

More information about FLOW-3D can be obtained from web address www.flow3d.com



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