

# HOOPS for CAE

*A Robust Platform for the Rapid Development of High-Performance Applications.*

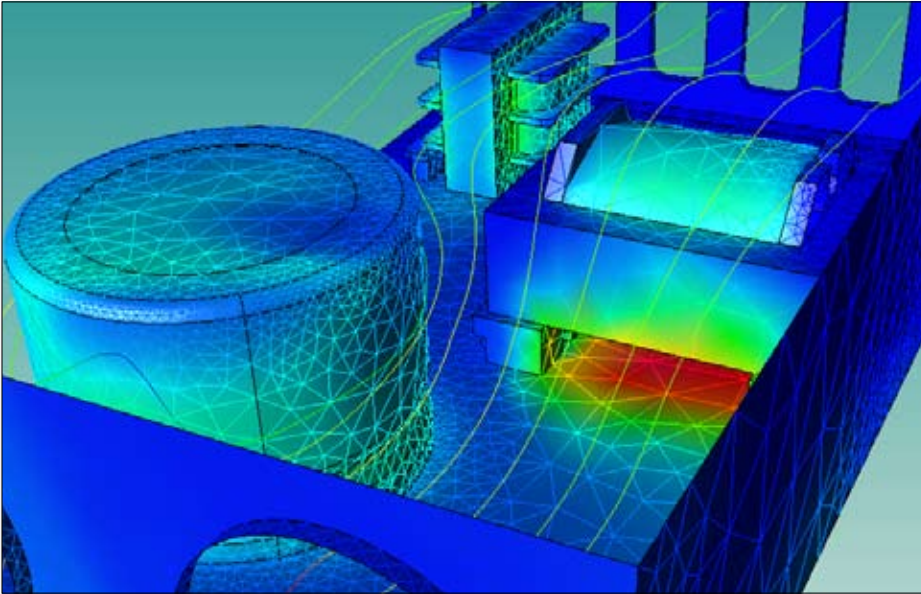


Image from Fluent.

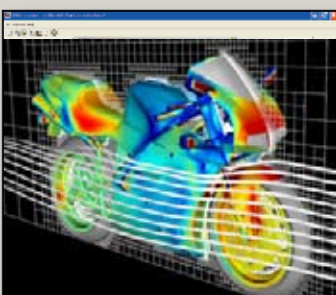
**H**OOPS is a 2D/3D development platform for creating or enhancing professional-grade applications. HOOPS' rich set of API's enable developers to work from a very high level – dramatically jumpstarting application development. Programming teams using HOOPS are able to produce more competitive applications, while reducing total R&D costs and accelerating project delivery.

## HOOPS WILL HELP YOU:

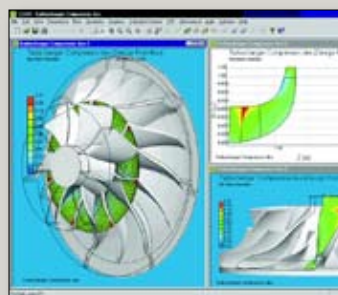
- **Develop High-Performance Applications**
- **Reduce R&D Costs**
- **Compress Time-to-Market**

HOOPS is the perfect platform for CAE applications such as:

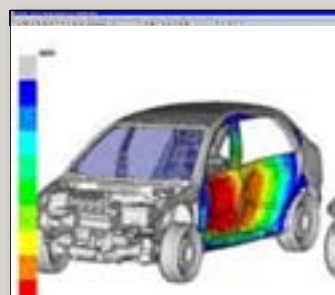
- **FEA**
- **CFD**
- **Simulation**
- **Engineering Analysis**
- **Multi-Physics**
- **Pre & Post Processing**
- **...And More**



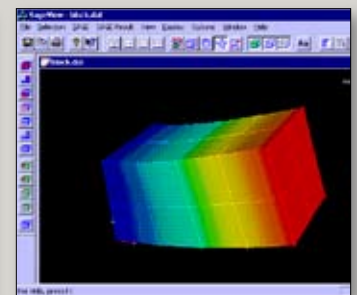
Screen shot from Fluent



Screen shot from Concepts NREC



Screen shot from ESI



Screen shot from PVM

## HOOPS CAE Customers

HOOPS is used in over 175 engineering applications worldwide. HOOPS-based CAE applications have been developed by companies such as Ansys/Fluent, MSC Software, EXA, Numeca, Coventor, ESRD, EMS&S, JRI Solutions, AMV and Engineering Dynamics, all of whom benefited from creating their software using the robust foundation of the HOOPS 2D/3D graphics platform.

## Tech Soft 3D Services

To help HOOPS developers get maximum return from their investment in HOOPS, Tech Soft 3D offers dedicated support, consulting and training; as well as extensive documentation, tutorials and sample code. These services are designed to assist developers make optimal use of the rich HOOPS API's and further speed the development of high-performance applications. In addition to gaining access to all of the power contained within the HOOPS libraries, you're also partnering with Tech Soft's dedicated team of graphics professionals – leveraging our extensive experience helping companies deliver industrial-grade 2D/3D applications.

## HOOPS for CAE

By licensing HOOPS, you are building upon the market-proven HOOPS Foundation - a robust set of API's encapsulating all of the necessary graphics tools you'll need for the creation or enhancement of an advanced engineering application. In addition, you'll have immediate access to HOOPS' rich set of specialized technology that addresses the unique needs of CAE applications.

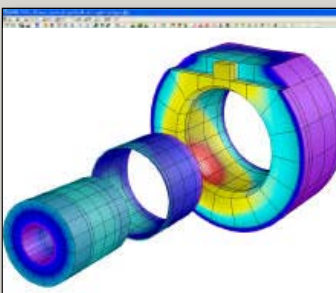
### HOOPS' Foundation Capabilities Include:

- Rich 2D & 3D integrated scene-graph creation and management
- Fast interactive on-screen viewing, manipulation and interaction
- Full support for optimal rendering on both OpenGL and Direct3D
- High quality text rendering and management
- Crisp print and plot output
- Support for all major 32 bit and 64 bit platforms, including Windows Vista
- Comprehensive & intelligent handling on over 80 popular graphics-cards
- Pre-integrated with all major UI systems
- Highly compressed streaming format for graphics communication
- Source-code level sample applications for desktop, web, Java and .NET
- Validated on over 100 graphics cards.

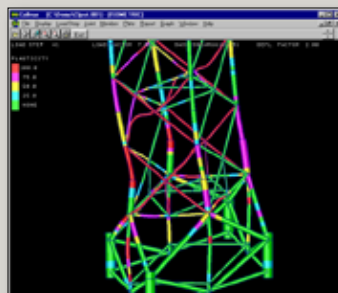
### HOOPS' Advanced Capabilities for CAE Include:

- Quad and triangle based color interpolation algorithms
- High performance rendering of color interpolated data
- Large model techniques specific to CAE
- Animation engine for simulations, color contour variations and deformations
- Complete annotation and redline capabilities for post process notation review
- Advanced cutting plane support including support for multi-plane section cuts
- Chart and graph generation capabilities
- High performance rendering of transparent geometry
- Multi-platform TCP/IP and HTTP analysis server for collaborative working and distributed parallel processing
- Support for stereo and immersive viewing
- Direct integration with the ACIS\*, Parasolid\* & Granite\* modeling kernels
- Integration with 3D InterOp\* translators to import all major MCAD formats
- Import of JT files via integration with the JT Toolkit\*
- Export of 3D PDF, DWF\*, and HSF for lightweight 3D results publishing
- Export of 2D PDF as well as numerous image formats for static results publishing
- Ability to export AVI files, for simulation sharing
- Integration with popular meshing component, MeshSim\*

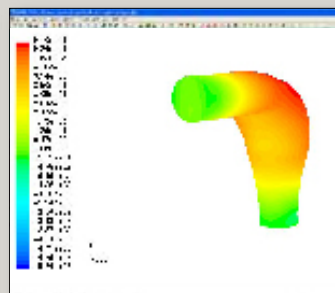
\* Requires additional 3rd party toolkits.



Screenshot from ESRD



Screenshot from Engineering Dynamics



Screen shot from Optimal Solutions

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