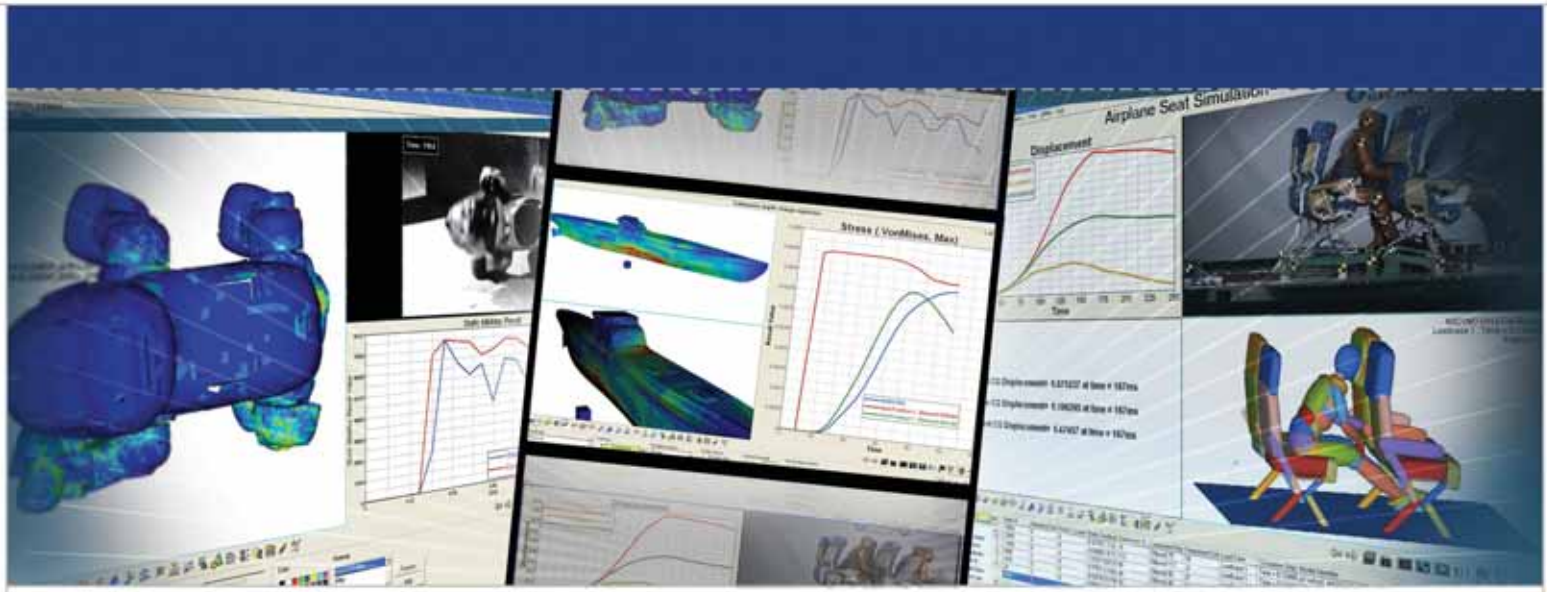
Altair® HyperWorks®

The Enterprise Solution for Product Innovation



Altair® HyperView®

Take Charge of Your CAE Post-Processing Data

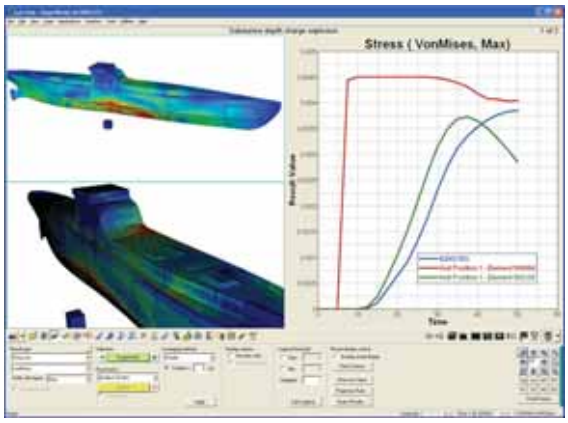
The demands of CAE post-processing are changing fast. Typical model size is increasing exponentially, while the growing number of iterations (and amount of data) needed to make smart decisions is overwhelming.

As today's product development cycle time continues to shrink and CAE becomes more complex, CAE analysts need a complete, comprehensive visualization environment that is capable of working with simulation results from many solvers. It also must seamlessly manage many different types of engineering data.

Altair HyperView's post-processing environment has what it takes to take charge of CAE complexity. It works with large models, can overlay and compare multiple iterations, and can synchronize various types of engineering data. A streamlined user interface makes accessing all of HyperView's powerful capabilities fast and easy. Above all, HyperView can be customized and tailored to meet any analysis engineer's needs.

Altair® HyperView®

Altair HyperView is a complete post-processing and visualization environment for finite-element analysis (FEA), multi-body system simulation, video and engineering data. Amazingly fast 3D graphics, open architecture design and unparalleled functionality set a new standard for speed and detailed post-processing of CAE results. HyperView enables engineers to visualize data interactively, as well as capture, standardize and automate post-processing activities. HyperView also saves 3D animation results in Altair's compact H3D format. This enables users to visualize and share CAE results within a 3D web environment and Microsoft PowerPoint, using Altair HyperView Player®.



BENEFITS

Reduce the time and costs associated with engineering analysis with HyperView's high-performance, intuitive graphical interface.

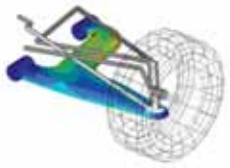
Improve Productivity With:

- Industry-leading 3D graphics manipulation and animation speed.
- Direct readers for popular CAE solvers and the ability to create user-defined results translators.
- Powerful XY-plotting and 3D-plotting functionality available in Altair HyperGraph and HyperGraph3D.
- Ability to customize the interface and create specialized tools to fit individual engineering environments and needs.
- Direct link to Altair HyperView Player for web communication and collaboration.

Gain Design Insight With:

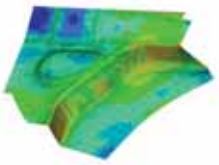
- Synchronized and visualized FEA results, multi-body systems results, XY plotting and video data.
- Overlay of multiple CAE models in one window.
- Visualization of various animation types, including adaptive meshes and multi-body dynamic models with flex-bodies.
- In-depth model interrogation based on user-defined criteria.

FEA



MBD with Flexbody

MBD



Adaptive Mesh

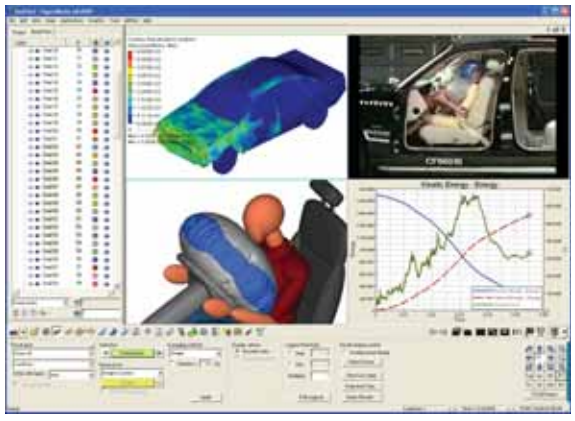
ADVANTAGES

Automation and Report Creation

- *Automated session building*: Automate the generation and presentation of standard plots and tables, as well as quickly compare results and correlation studies using the "Report: Overlay" option.
- *Plot macros*: Use plot macros to capture and replay often-used mathematical curves.
- *Publishing session export*: Export HyperView session reports to HTML or PowerPoint XML, including text, images, AVIs and H3Ds.

Extendable User Interface

- *Templex programming*: Create custom-curve math functions, as well as perform data analysis and curve statistics with annotations and labels within a plot window. Templex can also be used as a utility to parameterize any text file.
- *User authored math functions*: Users can build custom math functions or register existing C or FORTRAN routines within the GUI.
- *Custom pull-down menus*: Develop user-defined menus to provide easy access to reports, plot macros and custom wizards.
- *Tcl programming layer*: Automate procedures through a programmable Tcl/Tk command layer.
- *Custom import and export templates*: Define custom import and export templates for reading and writing XY plotting data.



BROAD SOLVER SUPPORT

HyperView supports many popular CAE solver formats through direct readers, providing a flexible and consistent high-performance post-processing environment. Additional solver formats can be supported through user-defined results translators, that convert results into the Altair H3D-compressed binary format. This functionality further increases the value proposition of HyperView by broadening its ability to support other commercial and proprietary solver formats.

Solvers Supported Include:

- OptiStruct
- MotionSolve
- ABAQUS
- LS-DYNA
- NASTRAN
- ANSYS
- PAMCRASH
- Adams
- MADYMO
- DADS
- SIMPACK
- RADIOSS
- MOLDFLOW
- MARC
- NIKE3D
- LLNL DYNA
- Others

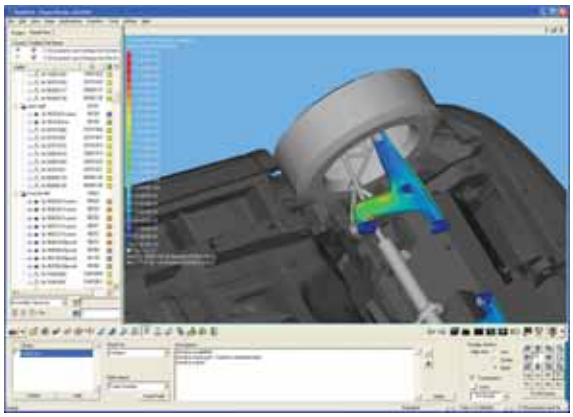
CAE ANIMATION

HyperView's animation client provides a complete suite of interactive post-processing features that dramatically improve results visualization. HyperView supports:

- Multi-body dynamics animations with flex-bodies
- Complex animations and complex stress calculations
- Stress tensors
- Deformed animations
- Linear animations
- Modal animations
- Transient animations

HyperView also supports an advanced toolset for model query and result comparisons for single and overlaid models. HyperView's powerful animation features include:

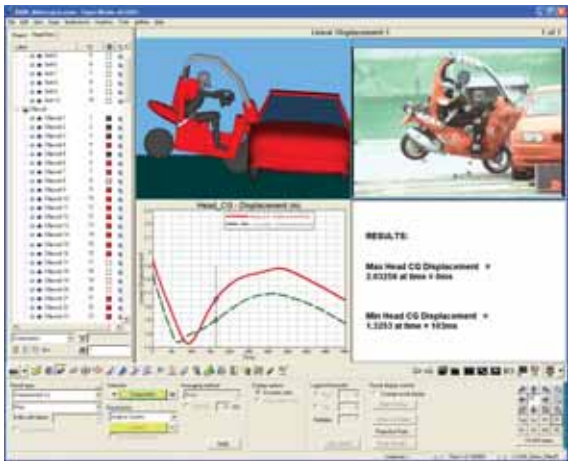
- Exploded views
- Iso-surfaces
- Tensor plots
- Vector plots
- Dynamic measures applied directly to the model
- Part and component tracing
- Interactive cut planes
- Tracking (part and coordinate systems)
- Graphic annotations



VIDEO ANIMATION

The video client in HyperView introduces the unique capability to read digital video files and synchronize them to CAE animations and XY-plot information for enhanced simulation post-processing and correlation. The video client directly reads and writes most standard movie file formats, including AVI, BMP, JPEG, PNG and TIFF.

Users can perform pixel-to-pixel measures directly on the video, overlay multiple video files, and add header and footer labels as well as annotations. Video frames can also be displayed using a staggered-time delay.



XY PLOTTING AND 3D PLOTTING

HyperView's plotting client is a powerful data analysis and plotting tool with interfaces to a wide array of data file formats. Engineers can build, edit and manipulate 2D curves and 3D plots (such as waterfall, surface and 3D line plots). A simple point-and-click environment provides easy access to curve expressions, axis labels, legends, plot headers and footers. In addition, plots can be annotated with advanced notes using Templex, a built-in text and numeric processor. A sophisticated math engine is capable of processing even the most complex mathematical expressions.

REPORT GENERATION

The publishing session export feature allows users to output reports to HTML or a PowerPoint XML of the active HyperView session. Users can specify which pages are to be written out, as well as specify the format for each window exported.

- Report export — HTML, PowerPoint
- Animation export — AVI, H3D
- Image export — BMP, JPEG, PNG, TIFF
- Summary data export — Multi-column, customizable formatting

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