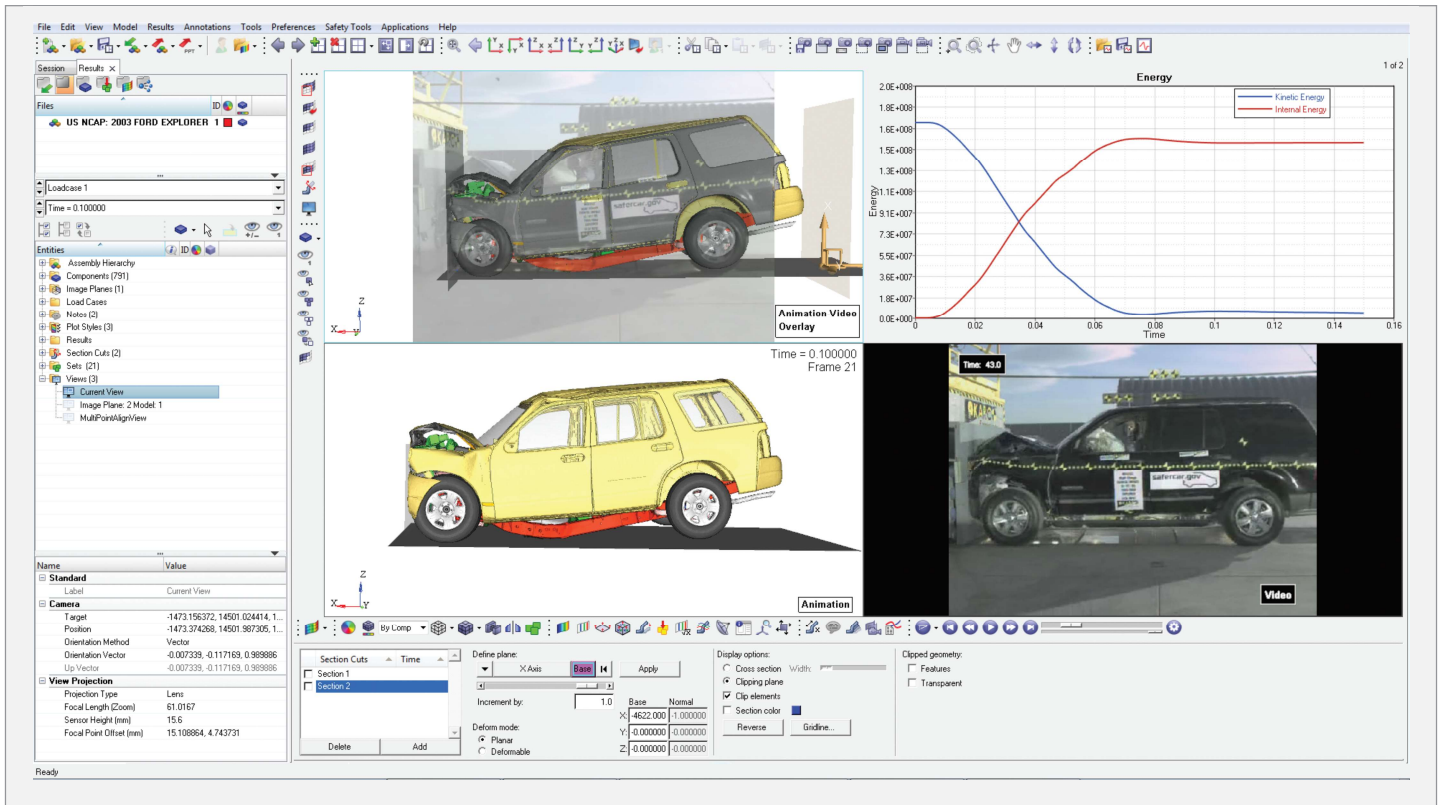# Altair HyperView™

CAE Results Visualization and Reporting

Altair HyperView is a complete post-processing and visualization environment for finite-element analysis (FEA), multi-body system simulation, digital video and engineering data. Amazingly fast 3D graphics, open architecture design and unparalleled functionality set a new standard for speed and integration of CAE results post-processing. Coupling these features with HyperView's advanced process automation tools dramatically improves visualization, correlation, and reporting results.

Product Highlights

- Complete visualization environment for FEA, CFD, and MBD simulation data
- Multi-page and multi-window post-processing
- Report templates for efficient evaluation of results across different simulations
- Comprehensive post-processing of composites results
- Supports most CAE solver formats
- Industry specific toolkits for NVH, Aero, Safety, CFD, and Manufacturing
- Results comparison and correlation with test data

Learn more:
altair.com/hyperview

Benefits

Improve Productivity
- 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.
- 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
- Synchronize and visualize FEA results, multi-body systems results, XY plotting, and video data.
- Overlay of multiple CAE models in one window.
- Overlay of video data on CAE models using advanced methods.
- Perform result mathematics to build user-defined results types such as failure indexes.
- Query model in-depth based on user-defined criteria.

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.
- One step report generation: Export HyperView session reports to HTML or Publish to PowerPoint, including text, images, AVIs, and H3Ds.

Extendable User Interface
- Templex programming: Create custom-curve math functions, perform data analysis and curve statistics within annotations and labels, and parameterize any text file.
- 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.
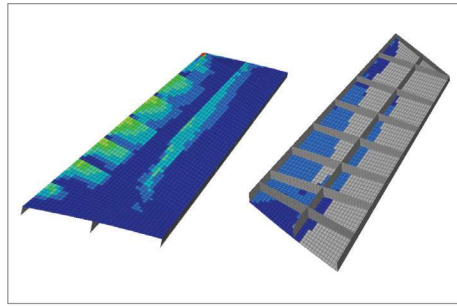
CAE Animation & Data Plotting
HyperView delivers a complete suite of interactive animation, data plotting and digital video functionality. Users can easily
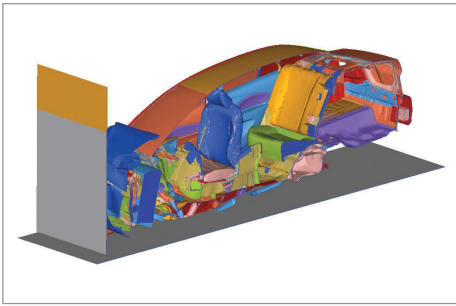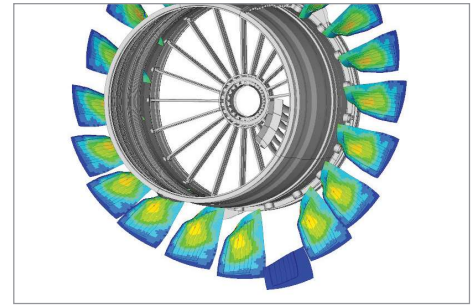
Cross section cuts for animations

Simultaneous top and bottom contour

Better results visualization with exploded view

synchronize, compare and visualize FEA results, multi-body systems results, XY plotting (simulation or test data) and digital video data simultaneously in the same environment.

Animations
• Contours (Scalar & Tensor)
• Vector plots
• Tensor plots
• Deformation plots
• CFD streamline plots
• Deformed animations
• Linear animations
• Modal animations
• Transient animations
• Multi-body dynamics animations
  including flex-bodies

To aid in results comparison and correlation HyperView provides user oriented image and video planes for combining test data with simulation results.

HyperView Also Supports:
• Exploded views
• Iso-surfaces
• Part and component tracing
• Interactive cut planes
• Graphic annotations
• User oriented image and video planes
• 3D stereoscopic view
• Freebody diagrams and resultant plots
• Symmetry

Report Generation
Generating a standard report is made easy with Altair HyperGraph™ by using the Publish PowerPoint capability along with the Report Templates functionality. The contents are synchronized between both applications, so that even individual changes in Altair HyperView can be updated automatically in the presentation. Users have detailed control of the formatting and the content that is exported. The utility supports all common file formats for graphics and video.

HyperView Player
HyperView Player, is a stand-alone 3-D viewer that provides a collaborative solution for enterprise-wide product data visualization. Users can export 3-D animation results in Altair's compact H3D format, which can be visualized and manipulated in HyperView Player. The player can be inserted as an object into a PowerPoint presentation or into a web page, thus making it the ideal solution for communicating analytical results effectively to the audience: analysts, testing engineers, tool and die makers, product design engineers, and product managers.

Solver Interfacing
HyperView supports many popular CAE solver formats through direct readers, providing a flexible and consistent high-performance post-processing environment for animating and plotting CAE simulation results. Additional solver formats can be supported through user-defined results translators that convert results into the Altair H3D compressed binary format.

HyperWorks also offers two translators, HvTrans and HgTrans, for working with any type of engineering data. HvTrans allows you to extract, translate, and compress CAE results while HgTrans enables you to convert, compress, and process data files using custom math expressions that can be built from the embedded math function library.
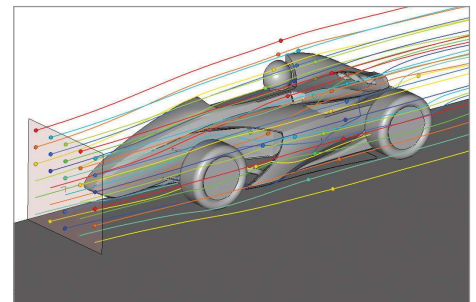
Solvers supported include:
• Altair Radioss™
• Altair OptiStruct™
• Altair MotionSolve™
• Abaqus
• Adams
• ADVC
• ANSYS
• DADS
• LLNL DYNA
• LS-DYNA
• MADYMO
• MARC
• MOLDFLOW
• Nastran
• NIKE3D
• PAM-CRASH
• SIMPACK
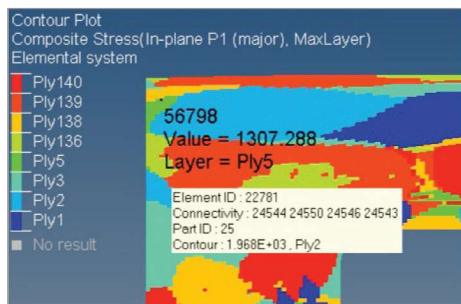
Rich composites specific functionalities
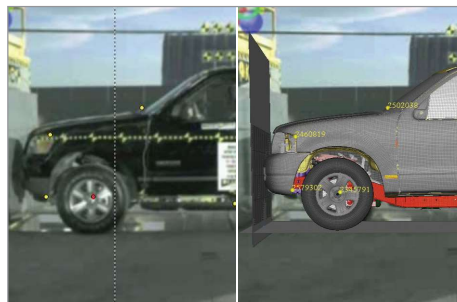
Video overlay with new multiple-point alignment method

Visualization of CFD results