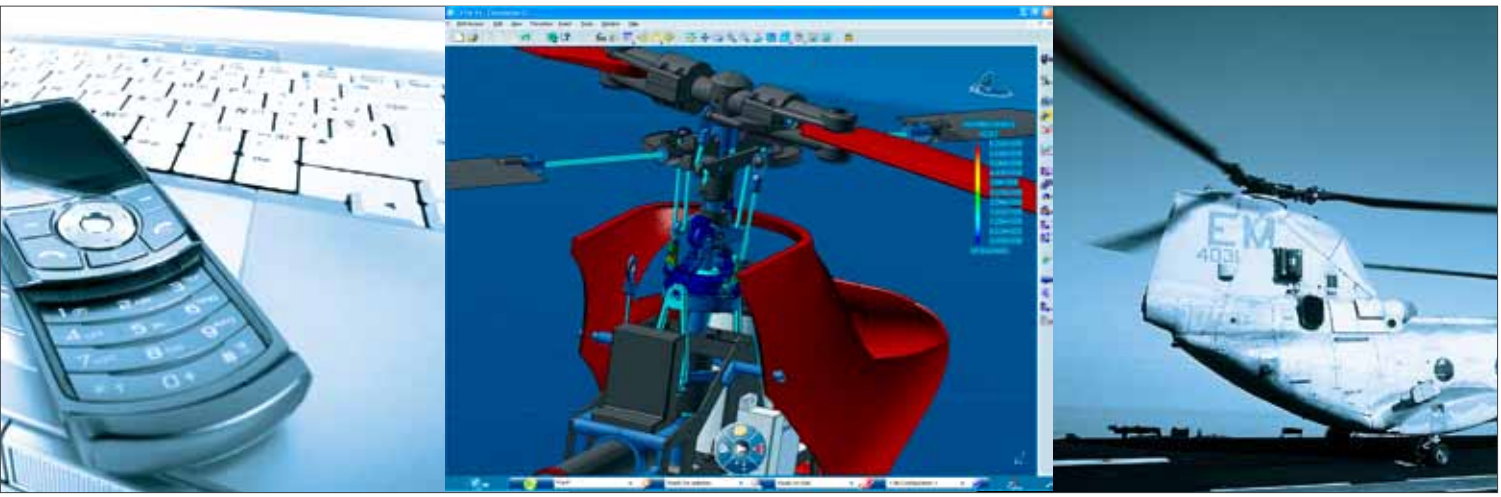
DASSAULT SYSTEMES

SIMULIA

CATIA V6 Advanced Structural Analysis (ASA)

Analyze mechanical response to complex loading conditions with advanced CAD-integrated analysis



CATIA V6 Advanced Structural Analysis

Make CAD-Integrated Advanced Meshing Work for You

Global competition requires the creation of better products faster and at lower costs without sacrificing quality. CAD-integrated advanced meshing provides benefits for analysts in terms of efficiency, reliability and lifecycle management. Meshes generated in a CAD-integrated environment are fully associative with the geometry—saving time, ensuring synchronization between mesh and geometry, and providing consistent management of valuable meshing IP.

Performing simulation earlier in the design phase with industry-proven, design-integrated analysis technology can provide significant time and cost savings.

About CATIA V6 Advanced FE Modeling

CATIA Advanced FE Modeling offers meshing capabilities for specialists who require high-quality meshes of complex wireframe, surface, and solid parts. Complex parts can be meshed automatically or using a number of manual meshing tools that provide a high degree of control over the meshing process. The solution supports creating finite element models with assembly joints and other fasteners, including spot seam and surface welds. It also provides tools to analyze mesh quality according to pre-defined and customizable criteria.

Features & Benefits

- Creation and simultaneous solving of multiple analysis cases for static, frequency, and buckling analysis. Promotes efficient modeling and solution for large-scale structures under a variety of different loading situations.
- Variable bearing loads, thermal loads, and the import of generalized variable loads from external applications enable analysts to accurately analyze the effects of complex loading conditions using both built-in and external tools.
- Results evaluation tools include contact pressure, reaction forces, and results envelopes, providing analysts the complete picture of how the model behaves under load.
- Composite properties specification and postprocessing enables analysis of models built with complex layered composite materials, designed either in the CATIA Composites Design (CPD) workbench or elsewhere.
- Forced response in the time and frequency domains enables analysts to study the transient response to loads that vary with time and the harmonic response to loads that change with frequency.

CATIA V6 ASA Highlights

Tools for analysts in a CAD-integrated environment

- Extends the capabilities of STA to include frequency, buckling, and linear dynamics analysis.
- Specialists and design engineers benefit from using a common user interface with a scalable set of analysis capabilities.

Integrated composites analysis

- Specification of the composite layup from the CATIA CPD workbench or from an imported XML file.
- Postprocessing results enable predictions of failure based on standard composite failure criteria and evaluation of worst-case throughout all layers.

Management of multiple load cases

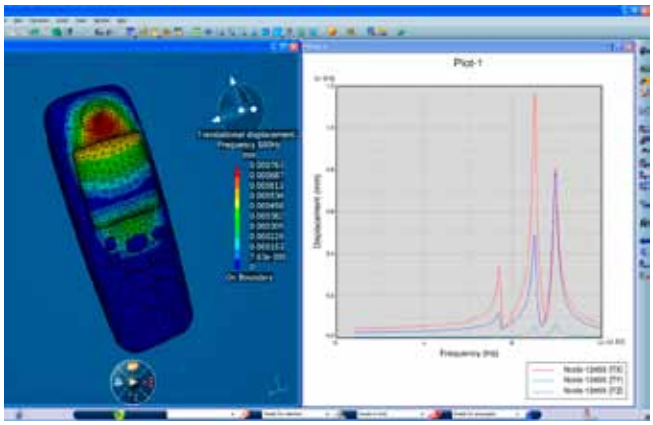
- Hundreds or thousands of linear load cases can be defined and solved efficiently.
- Load cases can be combined to enable study of additional loading scenarios.

Advanced and flexible loading options

- Ability to load data from external applications. Loads and spatial locations are specified in a spreadsheet and mapped to the CATIA model.
- Loads with complex distributions, such as bearing loads, can be defined.

Forced transient and harmonic response analysis

- Transient dynamic response is based on previously calculated natural frequencies together with loads and restraints under defined excitation.
- Harmonic response provides the structural response at "steady state," where the loading changes as the frequency changes.



The dynamic harmonic response of a phone subjects to the speaker vibration can be determined easily.