

# Analysis Design solutions



The generative capability of CATIA V5 Analysis solutions provides fast design and analysis iterations for any type of part and assembly. Moreover, as a result of the CATIA V5 knowledge-based architecture, it is easy to drive product optimisation based on analysis specifications and results. Unbeatable ease-of-use also makes these powerful tools available to both designers and specialists.

**Product highlights include:**

- **Fast design-analysis loops** –The common CAD-FEA environment of the CATIA V5 analysis solution set facilitates a wider number of mechanical behaviour and sizing assessments of parts and assemblies earlier in the product development process. The ability to drive consistent generative and associative specifications throughout the enterprise also enhances the breadth of its capability. As analysis specifications are an extension of part or assembly design specifications, the impact of design changes can be rapidly reassessed with automatic updates. This bridges the design to analysis gap introducing analysis early within the design cycle. This ensures faster time to market with more innovative and higher quality products

- **Knowledge-based optimisation** –

The analysis suite of products takes advantage of the native CATIA knowledge-based architecture. It is designed to achieve highly sophisticated levels of design optimisation by capturing and studying the knowledge associated with part design and analysis. The reuse of analysis features and application of knowledge-based rules and checks ensure compliance to company best practices.

- **Highly scalable solutions** –

These solutions address the needs of designers, engineering analysts and advanced analysts. They can be used on their own or in conjunction with the extensive range of applications available through CATIA's analysis partner solutions, which are all based on the CATIA V5 architecture. These partnerships extend the process coverage and address more specific needs such as multi-body dynamics, fatigue, acoustics, crash, CFD, non-linear, radiation and more

- **Industry-proven suite of**

solutions – Characterised by ease-of-use, coupled with a common user interface and fast computation time, these solutions provide a rapid return on investment. Process analysis is supported by robust, built-in finite element solvers and mesh generators, for balancing accuracy and speed. Additionally, users can review the characteristics of designs in a DMU environment to get a realistic idea of the mechanical behaviour. This provides an opportunity to improve and optimise the design early in the development cycle.

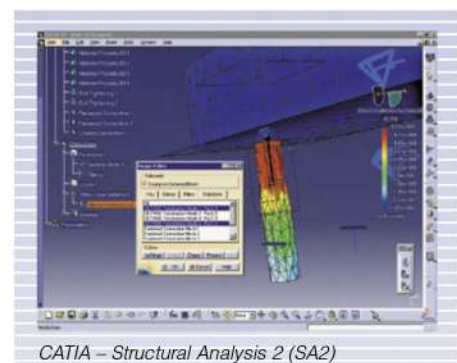
- **Products that are easy to understand and to use** –

The integrated and automated approach to solving and pre- and post-processing offers an intuitive interface for the needs of the designer, design engineer and analyst. The core application, CATIA – Generative Part Structural Analysis 2 (GPS), creates this user-friendly environment and acts as the foundation for all other analysis products. In addition, the CATIA V5 tools and environment that are common to all CATIA applications and partner solutions eliminate the problems of lost productivity associated with using multiple applications.

**CATIA – Structural Analysis 2 (SA2)**

Provides many of the necessary tools for advanced designers and specialists involved in structural analysis. The processes covered include stress, frequency, thermo-mechanical, buckling and contact analysis with multiple load, restraint and mass complex configurations. Analysis can be performed on single parts as well as on hybrid models mixing solid, shell and beam elements. Analysis can be performed on CATIA V4 models as well as models.

SA2 benefits from the common CAD-FEA environment and its ability to drive consistent generative and associative specifications. This allows for a wider number of mechanical behaviour and sizing assessments of parts and assemblies earlier in the product development process. Users can also take advantage of CATIA's wide partner solution portfolio, based on the CATIA V5 architecture for more industry specific analysis. (More information is available at: [www.caav5.com](http://www.caav5.com)).



CATIA – Structural Analysis 2 (SA2)