



QSD
cetim

The design-to-cost software solution
to optimize your composite parts



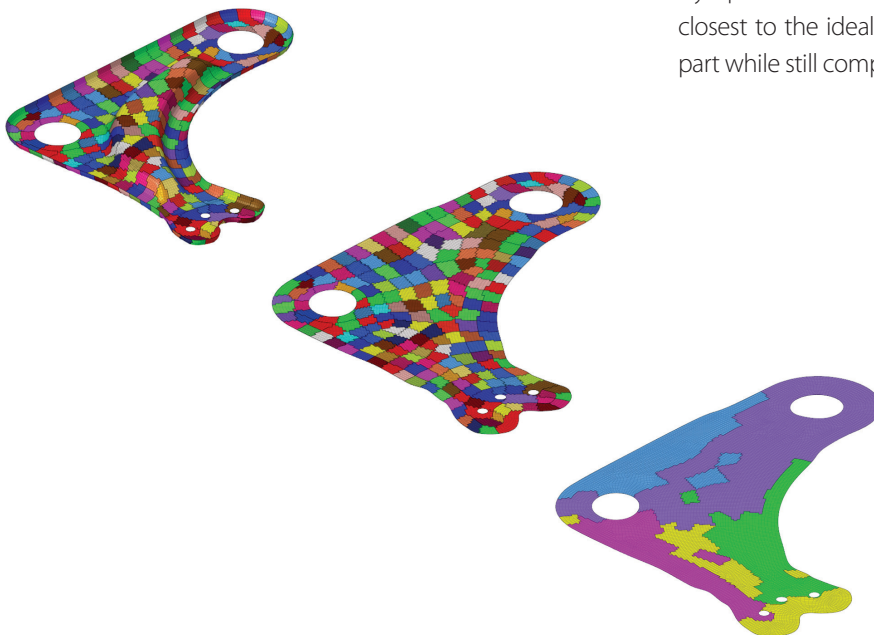


INDUSTRIAL REQUIREMENTS

- › Quickly design light and low cost parts that meet the requirements in terms of structural performance
- › Cetim QSD® is the result of several years of research performed in collaboration with ONERA and ALTAIR

FIELDS OF APPLICATION

- › Cetim QSD® is perfectly integrated into Altair's HyperWorks® environment and allows you, depending on the manufacturing process, to identify the ideal material orientations and thicknesses for your composite material parts in a simple manner
- › By making it possible to quickly develop light and low cost parts that meet the imposed structural requirements, Cetim QSD® is addressing major industrial challenges, particularly in the aeronautic, automotive, sports and leisure and special machinery sectors



MAIN FUNCTIONS

- › This software solution is intended for designers of composite material and multi-material parts. It allows you to identify the best way to use each of your materials. It is based on a multi-step optimisation method developed by ONERA and named "stiffness matching"
- › The first two steps allow you to determine easily, as early as the preliminary design phase, the possible performance of the structure depending on the materials used and their area of use
- › The third step consists of taking the manufacturing process into account to identify the feasible optimum composite lay up which will ensure a level of performance that is the closest to the ideal level of structural performance of your part while still complying with predefined cost objectives

Cetim, your expert partner, assists you throughout the cycle of your project:

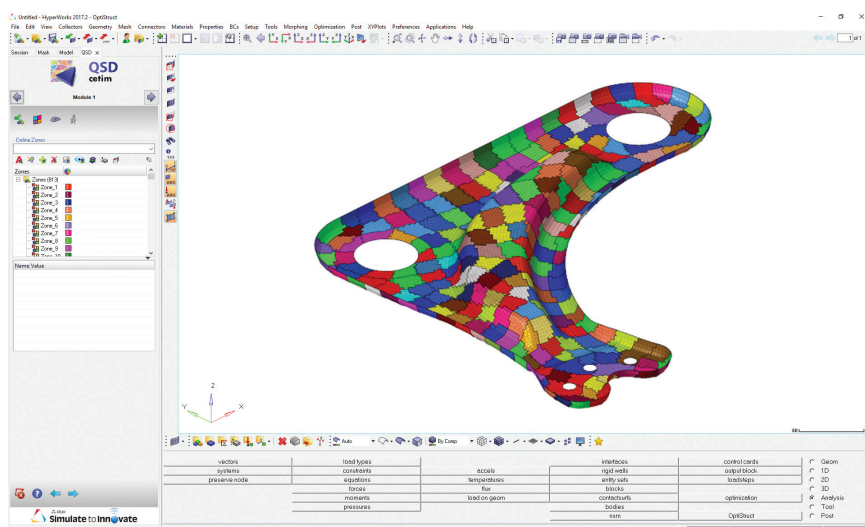
- › Engineering, design
- › Tests, simulation
- › Recommendations, expert analysis, training

UNPRECEDENTED CHARACTERISTICS

- › Based on an innovative methodology for composite materials optimisation: "Stiffness matching"
- › Reduced CPU time
- › Easy identification of the maximum performance for your application
- › Integration of the forming manufacturing process by means of Drape Estimator®
- › An algorithm which identifies the optimum lay up (thickness/orientation) and integrates the design/manufacturing compromise

WHY CHOOSE Cetim QSD®

- › Assistance with material selection, fast identification of the ideal fibre orientation and thicknesses for your parts based on the manufacturing process
- › Reduced material scraps and optimised costs thanks to an integrated simulation of the forming process
- › User-friendly interface developed with Altair into the reference environment for composite material optimisation (HyperMesh® + OptiStruct®)
- › Suitable for all composite processes allowing tailored lay-up (fibre placement, hand lay-up, QSP®, etc.) for thermoset and thermoplastic resins
- › The result of 5 years of collaborative research by Cetim and Onera (French aerospace research centre)



Going for the future

As the leading French player in the fields of mechanical engineering innovation and R&D, Cetim has built up a wide network of partners. Its engineers and technicians operate in more than 30 countries each year.

R&D function is carried out either within specific sectors or cutting across sector boundaries, and within either a national or an international context. It embraces a range of complementary aspects, including prospective studies in conjunction with international scientific communities, R&D concerning all areas of mechanical engineering, industry-specific studies and projects, and the large-scale federative technological projects.

Cetim provides a comprehensive array of services to the mechanical engineering industry from consulting to testing and from engineering to training in new skills.

Cetim is a member of the Carnot institutes network and a founding member of the French Alliance for the Industry of the Future.

Find the solution that best fits your business on <http://www.cetim.fr/en/Software>

Present in the areas of design and simulation for several decades, Cetim has forged recognized expertise to meet the needs of each industrialist. Cetim offers you a range of "software solutions" trades in line with the market.

Get more information on Cetim QSD
and ask for a free demo:
+33 (0)3 44 67 36 82 or sqr@cetim.fr



Cetim is labeled Carnot institute, member of the Réseau CTI and of the Alliance Industrie du Futur

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