Johnson GATE & EnginSoft Case Study

CADIQ enables an innovative product development cycle

CADIQ

If the model is the master, then downstream modifications must be reconciled with the product design model. When you integrate all phases of the product lifecycle, then the design model must be reusable. CADIQ, a vendor-neutral application, identifies model-based design (MBD) data quality issues that impact downstream reuse for tooling, simulation and data exchange.

CADIQ compares geometry, assembly structure, design features and product manufacturing information among related models to identify significant differences. These are summarized in statistical reports and visualized with interactive 3D graphics. When design problems are diagnosed on the manufacturing floor, CADIQ can effectively communicate them to engineering using 3D PDF.

Engineers responsible for long-term data archival and retention (LOTAR) use CADIQ to validate neutral file conversions of 3D CAD models. If needed, additional data can be added to the archive, enabling comprehensive validation of the retrieved model in a future CAD system.

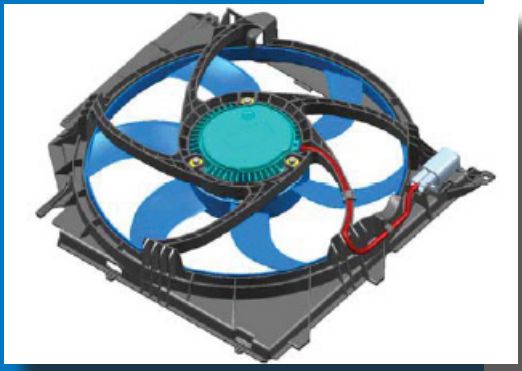
Quality in design

Johnson GATE is part of the Johnson Electric Group of Hong Kong, and is a world leader in the production of powertrain cooling modules for the automotive sector with 45 percent of the European market and 50 percent of the growing Chinese market. Its leadership in this market segment has been acquired over a number of years thanks to a strong orientation towards innovative technological products and sharp attention to an integrated product development process, in which CAE tools (particularly the ANSYS and CFX Family) are used during the preliminary design phases of the principal system components.

The range of cooling modules offered by Johnson GATE covers all current power requirements, from the lowest (50W) to the highest (1000W), using innovative electronic solutions such as stand-alone and integrated speed controllers for protection against jammed rotors.

As a global supplier, Johnson GATE has manufacturing centres in various countries around the world. The Johnson Electric Group makes a significant contribution with its electric motor production plants in China, while the technical centre of excellence for cooling modules, known as the Italian Auto Engineering and Production Centre, Asti, Italy, where design is supported by a philosophy of quality, from final concept to product development.

To reinforce its commitment to quality, Johnson GATE uses CADIQ to produce accurate CAD models.



CAD geometry of cooling fan assembly

"CADIQ is the only software currently on the market which offers a true multi-CAD, CAD-independent, multi-platform approach capable of integration with PDM solutions, based on internationally recognized standards in the automotive and other sectors, such as SASIG PDQ. For this reason it can be regarded as the de facto standard for certification of the quality of exchanged CAD mathematics."

- Dr. Marco Davino, Support Services Johnson GATE

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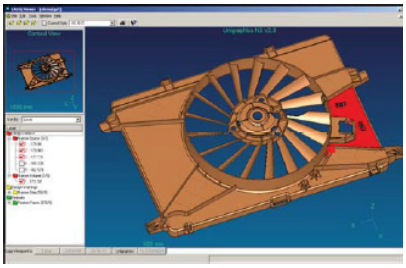
CADIQ

For more information visit:
www.cadiq.com



CADIQ analysis of cooling fan housing to assess high level geometry problems that may impact FE analysis

About ITI

ITI is the global leader providing reliable interoperability, validation and migration solutions for product data and related systems. Our customers recognize the value in having a trusted solution partner that provides more than just software. ITI solves complex product data interoperability problems so that the world's leading manufacturers can focus on making great products.
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The use of CADIQ in the design process

To reinforce its commitment to quality Johnson GATE uses CADIQ to produce accurate CAD models. The word 'quality' here should not be considered in a generic sense, but as a reference to the use of CAD models in the specific design chain of the business. A quality model is one which can be used immediately, can be shared with customers and suppliers, and does not create any problems or delays in applications further down the design chain, such as (for Johnson GATE) the thermo-mechanical CAE analyses carried out with ANSYS Workbench, the exchanges of data and the detailed design.

CADIQ was used from the outset to identify quality defects in 3D models generated with various CAD programs and to measure the impact on downstream applications. On the basis of this information, CADIQ was then configured according to the company's specific needs and those of its reference customers.

CADIQ is now used on CAD workstations to monitor the process of creating three-dimensional models, taking into account the specificities both of the software packages and of the design activities of the entire design chain. "The result is a reduction in problems and delays caused by poor quality in CAD models, and thus a reduction in customer response time and an increase in the flexibility of the design, which now enables Johnson GATE to operate on the basis of an innovative product development cycle, which could not be reproduced with traditional methods," says Paolo Cavallo, Structural Designer in the pre-development team of Powertrain Cooling, Johnson GATE.

Why EnginSoft and CADIQ

It has become increasingly evident over recent years, as tier one suppliers and their customers have developed closer working practices, that certain aspects of the design cycle have grown in importance. One example of this is the quality of CAD modelling. "It is important to understand that it is not merely a matter of improving the quality of CAD modelling for internal use, but of eliminating at source any possible problems with the sharing of the models with our customers. We constantly anticipate our customers' demands – it is the best way of satisfying them," says Dr Marco Davino, Head of Support Services at Johnson GATE. "We do not wait for the customer to ask us to certify the quality of the CAD modelling before tackling this issue within our organization, but implement the necessary procedures immediately.

"The choice of EnginSoft and CADIQ was guided by precise evaluations," continues Davino. "EnginSoft has supported us for some time, and has genuinely tried to understand our needs," he adds. "Because of this, it seemed the ideal partner for the integration of CADIQ into our product development process, and the results speak for themselves."

CADinterop

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