

TURBOMACHINERY

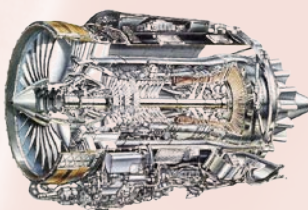
atech GmbH

engineering software technology

"atech has greatly improved the Turbine Engine Thermal Analysis system. They integrated multiple codes into single GUI with automated iteration that reduces time and cost for thermal analysis."

Lauren K. Petersen, 2004, Siemens Power Generation, West Palm Beach FTT Florida Turbine Technologies

Engineering software and service for fortune 500 companies.



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COMPANY PROFILE

atech provides software and service for engineering process integration and data management. Our engineering and IT services encompass customer-specific engineering solutions in interlaced or distributed working environments for fortune 500 companies.

We are engaged in different domains: Automotive, Power Generation, Aerospace, Industrial Application and Turbomachinery. Our solution package incorporates software solutions, the analysis of engineering processes, project specification, system selection, consultancy, purchase, adaption, implementation down to maintenance and field service.

We support and inspire our customers in partial and complete projects either at our locations or at the customers site. The comprehensive experience of our highly-educated employees combined with the flexibility of our specific company structure allows to create a high added value in terms of quality, cost and time.

TURBOMACHINERY EXPERTISE

Comprehensive experience in turbomachinery combined with a flexible company structure makes atech optimally positioned to provide excellent engineering services, solutions and quality software for turbomachinery development and design.

atech combines turbomachinery and CA expertise with other advanced tools to offer a full fluid and mechanical engineering service covering stress, thermal and dynamic issues. atech is specialized in all aspects of geometry design, analysis, simulation and parametric optimization for turbomachinery.

The services offers range from consulting to realization of partial and complete projects either atech locations or at the customers site. Our expertise is complemented by own software systems for automated component design that are licenced and used by some major turbomachinery OEM's.

SOLUTION SPECTRUM

CAD 3D parametric design of components
rules-based design, drafting, assembly modeling
re-engineering, smoothing, interpolation, stacking

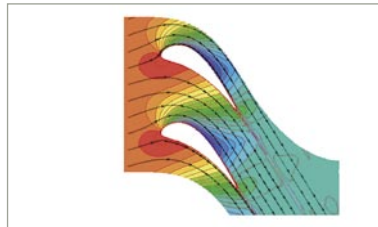
FEM, CFM structural and thermal analysis (steady state/transient)
aerodynamic analysis of blades and cooling systems
fatigue, durability, multistage blade properties analysis
mesh generation

Performance modal analysis, rotor dynamics calculations
compressor and turbine blade balancing
CG calculation, lean, pre-twist for aerodynamic forces

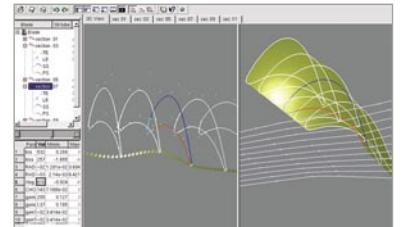
Instrumentation development of client specific engineering software
customization of design and analysis software
data fitting, legacy data treatment
CAD data exchange interfaces



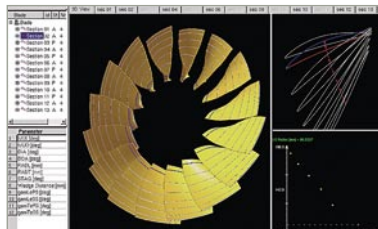
SAMPLE CASE STUDIES



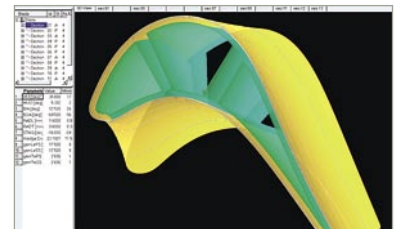
calculated iso mach number contours



blade analysis



pdesk® 3D blade analysis



3D HPT blade cooling geometry design



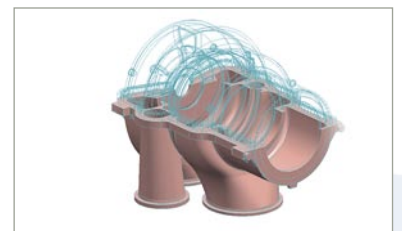
axial compressor blade



cooled turbine blade



customization: bladed disk rotor



freeform surface modelling:
compressor casing

TOOLS

CAD

Unigraphics NX2/3/4, CATIA V5, ProEngineer, SolidWorks, Think3, AutoCAD

CFD

FLUENT, StarCD, Numeca, MISES, Flowmaster II

FEM

Abaqus, ANSYS, Nastran, I-DEAS, Patran, Matlab, Optimisation systems

S/W Development

C++, Qt, Pearl, Tcl/Tk, Java, PCL, EJB, CORBA/DCOM, EDI, XML, Oracle