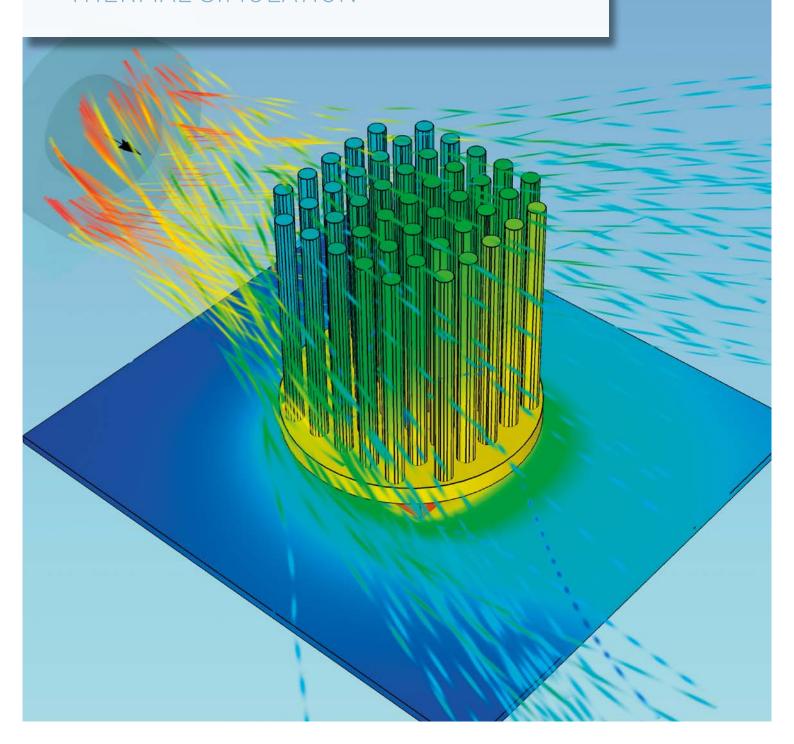


CFD SIMULATION THERMAL MANAGEMENT CONSULTING

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OUR SERVICES

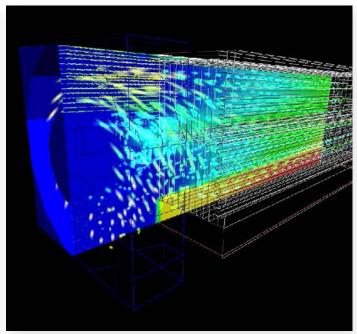
- Evaluation and elaboration of cooling concepts
- Analysis of existing simulation results
- Thermal and fluid dynamic simulations with 6SigmaET:
- From system to component level
- Distribution of air flow, air temperatures, pressures, temperatures of solids
- Fan operating points, pressure drops
- Optimisation of flow pattern and heat transfer, heat sinks, fans
- Failure mode and post mortem analysis
- Product upgrading and redesign

BENEFITS

- Rapid feasibility studies
- Early problem identification
- Cost-efficiency of simulation vs. product redesign
- Easy variant analysis
- Accelerated Time-to-Market and Design-to-Cost

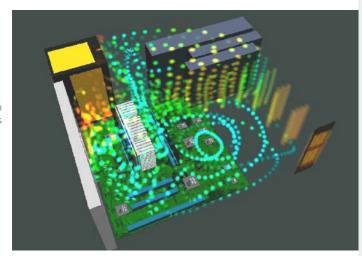
Please contact us as your development partner.

DEVELOPMENT STAGES SIMULATION

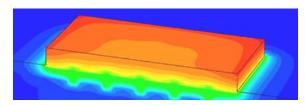


SIMULATION EXAMPLE PERSONAL COMPUTER

feasibility idea could this work? studies basic decision development stages draft first time right support details find cost-effective design optimization select fans and heatsinks sequence flow control prototype avoid »oversizing« mass production find efficient solution troubleshooting (e.a. new CPU) for thermal problems product-

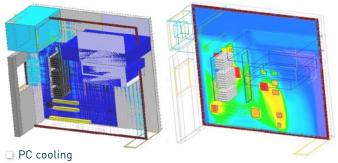


TIM GAP FILLER ELASTOMER COMPACT MODEL with structural THERMAL VIAS



Further information

www.dr-breier-consulting.de



- Flow distribution
- Optimisation strategies for CPU heat sinks, e.g. hood as air duct
- Identification of a vortex with rotating air at high temperature without significant heat source.
 Counteraction e.g entrance air deflection plate