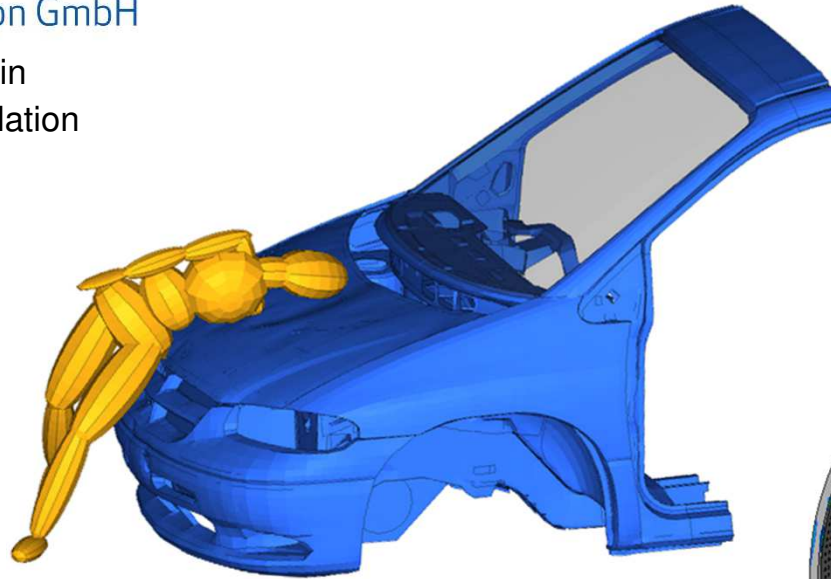


- Engineering office for services in FEA calculation and CAE simulation
- Focus on crash simulation and short-time dynamics for the protection of man and goods



Our services

- Simulations in product development
- Flexible customer orientation
- Development of innovative solutions
- Product optimization
- Technical consulting

Your benefits

- Efficient product development
- Saving in resources
- Saving in costs
- Saving in time
- Shorter time to market
- Safe products for the end user

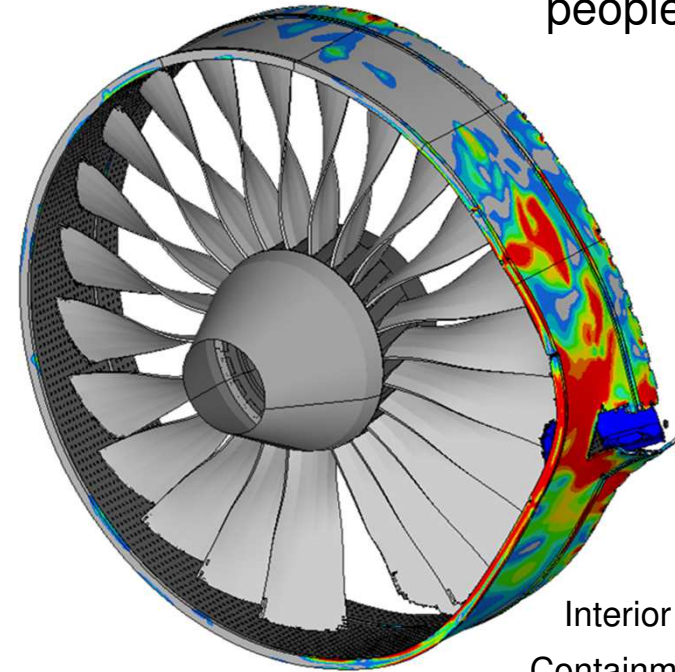
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FEA and CAE simulation for a targeted product development for the protection of people and goods



Crash
Automotive
Interior / Head Impact
Containment Simulation
Engines / Turbo Machinery
Validation and Matching of Tests
Machinery and Facility Engineering
Modelling of Material Characteristics
Statically Loaded Systems and Structures
Drop Tests for Consumer Goods / Packaging

Application range of our services

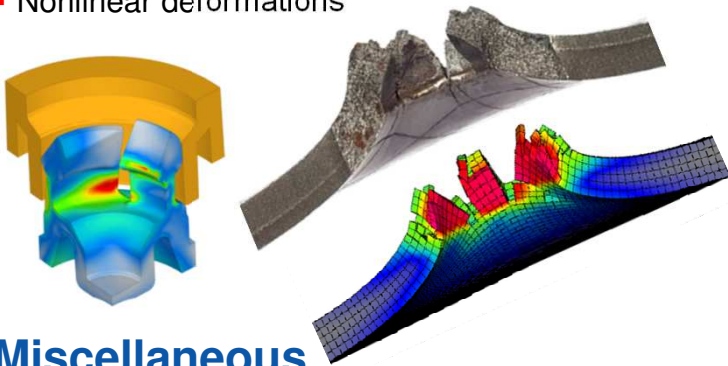
Simulation / FEA / CAE

Statics and Dynamics

- Conventional strength calculations
- Static structural mechanics
- Analysis of eigenfrequency, NVH

Crash and Short-Time Dynamics

- Highly dynamic processes / accidents
- Extreme nonlinearities
- Complex contact situations
- Nonlinear material behaviour
- Nonlinear deformations



Miscellaneous

- Consumer goods, packaging
- Machinery and plant engineering

Examples of services

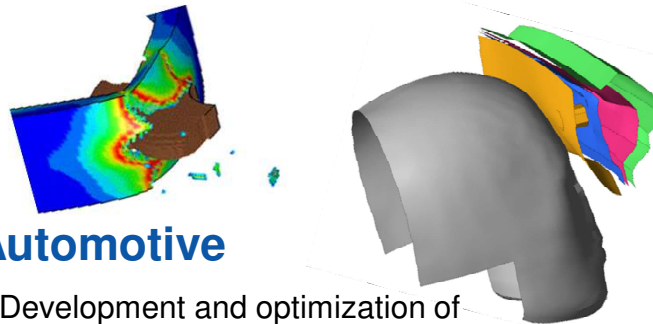
- Drop tests for products / components
- Stress tests
- Dimensioning of connections, sub-structures and component assemblies

Turbo Engines

- Rotors, propulsions, engines and any machinery containing rotating parts
- Emphasis on containment analysis

Examples of services

- Impeller burst and blade loss
- Axial and radial turbo engines
- Burst and spin tests, hub burst
- Failure of conrods and crankshafts
- Punctures of housings and oil pans



Automotive

- Development and optimization of sub-structures and components
- Occupant and VRU protection

Examples of services

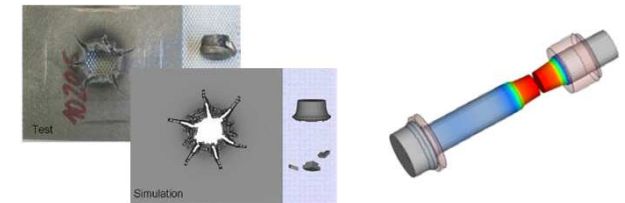
- Head impact according to FMVSS 201u (FMH) and UN R-21
- Whiplash and OOP testing
- Flex PLI / upper legform, adult / child headform acc. to Euro NCAP and UN R127
- Component development

Materials

- Application of diverse materials
- Detailed description of deformation behaviour, dependency of temperature and of strain rate, dynamic hardening, triaxiality and failure

Examples of services

- Modelling of material descriptions for crash and containment simulation
- Verification of material definition
- Recommendations for a load-compliant material selection
- Optimization of material application



Test Validation

- Test-based material description
- High predictive capability of simulation
- Targeted planning of trials

Examples of services

- Matching of test and simulation
- Optimization of the simulation models
- Testing support