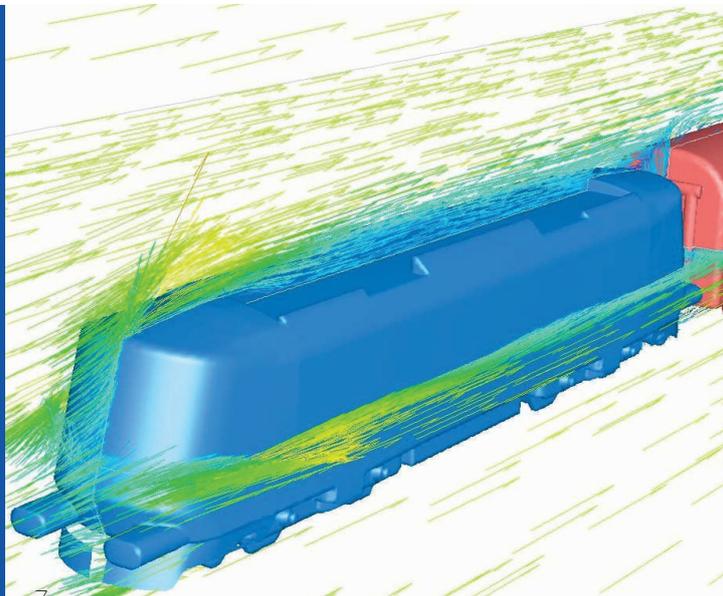


Applied Mechanics

Complex computational support of research and development - computer simulation, evaluation of experimental data, creation of computing applications.



Our Services

- Strength, strain and stress calculations in structures using the finite element method
- Simulation of short-duration events, crash calculations
- Calculations of vibrations and fatigue of machine structures, seismic calculations
- Simulation of dynamic behavior of the system of rigid and flexible bodies - multibody simulations
- Simulation calculations of fluid flow and heat transfer using the finite volume method
- Thermodynamic calculations
- Applied mechanics for technical tasks from a wide range of engineering practice, research and subsequent development of computational modules and methods according to specific customer requirements

Technical equipment

- SW and HW equipment in accordance with the requirements of the simulations solved
- ANSYS / Mechanical - solution of dynamic, nonlinear problems in the area of strength stress
- ANSYS / CFD / Fluent - Flow solutions and thermodynamic calculations
- SIMPACK, Alaska - Programs for multibody simulation
- FEMFAT - solving fatigue problems
- LSD-DYNA - solution of short-duration events and large plastic deformations
- MATLAB - a programming environment for creating own computational modules and performing calculations
- Set of computer modeling and meshing software (FEMAP, Gambit, ICEM, GridPro)

References

- ŠKODA TRANSPORTATION (CZ)
- Neoplan USA Corporation (USA)
- PBS Turbo (CZ)
- ŠKODA JS (CZ)
- ZVVZ (CZ)
- ÚJV Řež (CZ)
- Wikow Gear (CZ)
- Doosan Škoda Power (CZ)
- Bonatrans Bohumín (CZ)
- ČEZ (CZ)
- SUDOP Praha (CZ)
- CZ LOKO (CZ)



Research and Testing Institute Plzeň

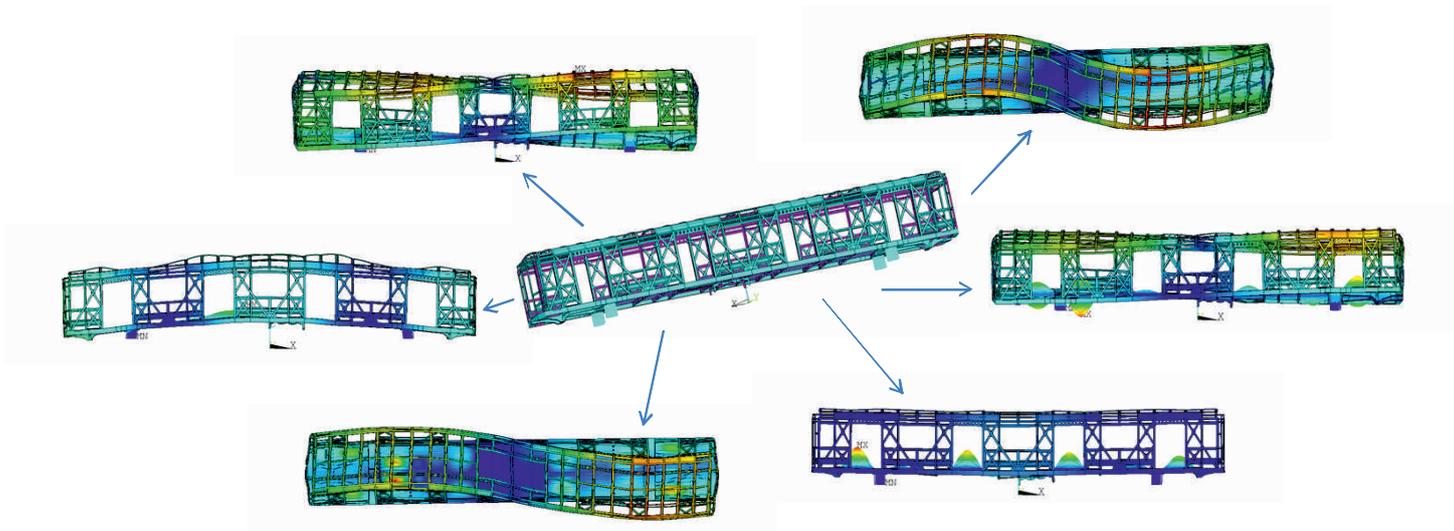
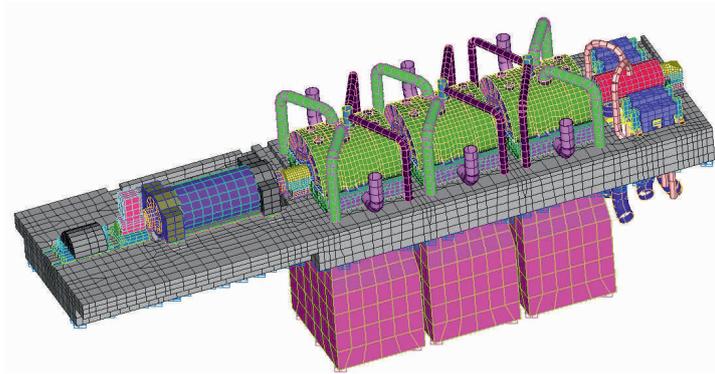
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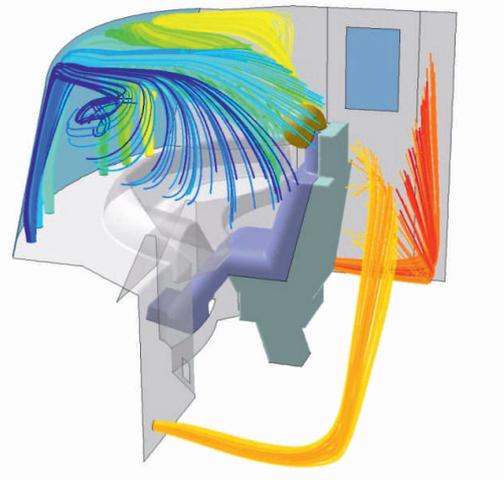
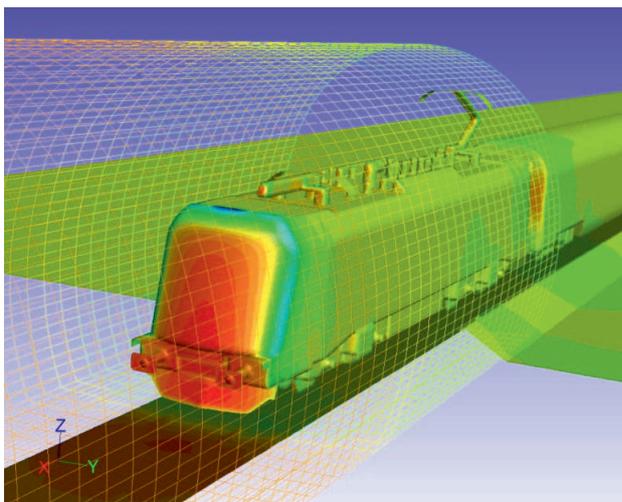
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Applied mechanics

- Analysis of potential risks of operation
- Study of the influence of thermal fields
- Calculation of bearings behaviour
- Evaluation of residual life of components
- Modal analysis of the metro wagon
- Evaluation of bonded joints
- Crash simulations
- Bogie calculations



Fluid mechanics



- Analysis of pressure impact on the moving vehicle and its surroundings
- External and internal aerodynamics during the passing of trains
- Calculations of the pressure distribution during the passage through a tunnel
- Study of thermal comfort in the vehicle interior