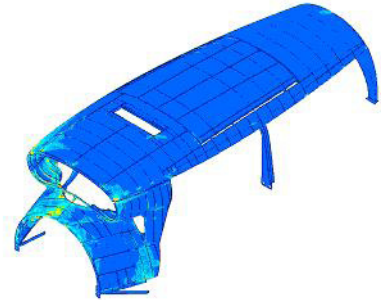
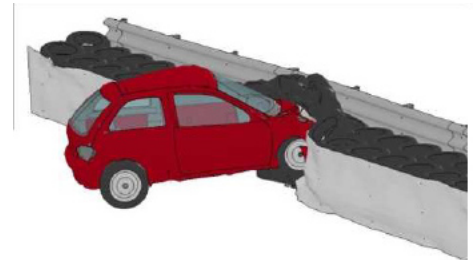


Structural Mechanics

- Linear and non-linear structures
 - 1D, 2D (plane strain, plane stress, axisymmetrical, multi-harmonic), 3D
 - Bars, beams, shells, volume
 - Assessments of assembled parts (bolted, riveted, welded)
 - Optimisation and lifing assessments
 - Super elements, coupling
- Non-linearities : geometry, material, load, boundary condition
- Material : elastic, composite, viscoelastic, viscoplastic, hyperelastic, isotropic, anisotropic, ...
- Static
- Vibration, stability with or without preload
- Dynamic with or without damping
 - Implicit
 - Explicit (crash, impact)
 - Modal : modal superposition, spectral response / harmonic response, transient response
 - SPH impact
 - Fan Blade Out dynamic assessments
- Optimisation, sensibility analysis
- Rotor dynamic assessments
- Mechanisms
- Thermal (heat transfer with boundary conditions)



Structural simulation of a test bed



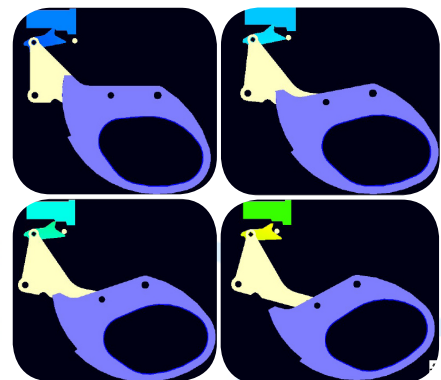
Crash simulation

Couplings

- Multi-physics analysis
 - Fluids / structures
 - Thermo mechanics
 - Poroelastic materials
- Weak and strong coupling
- Multi body analysis

Software's

ABAQUS, ANSYS, CATIA, NASTRAN, SAMCEF,
Oofelie, Metafor ...
CAST3M, Code_Aster ...
EuroPlexus, LS-Dyna or coupling of codes CFD/CSM



Mechanisms