

DSHplus

DSHPLUS TOP USE CASES

Altair Partner Alliance

Coupled Simulation Hydraulics-Mechanics-Control

Challenge

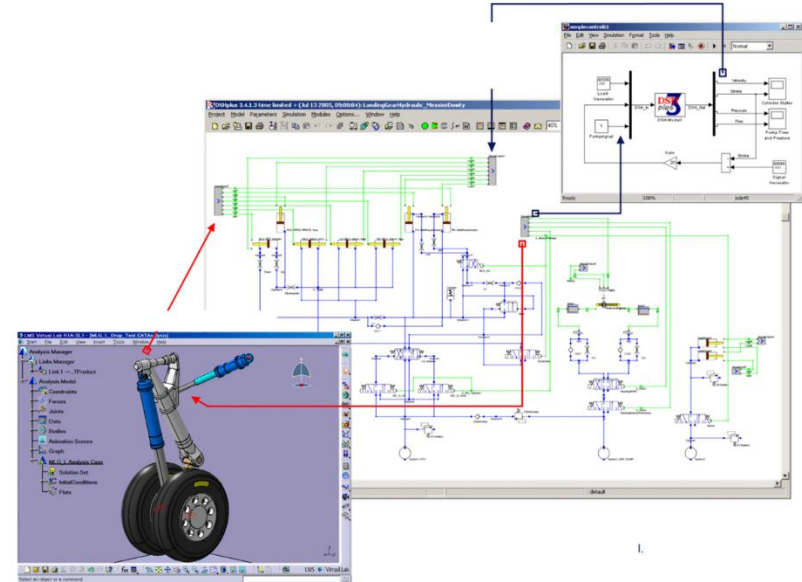
- Hydraulic actuator @ landing gear – Model set up

Solution

- The standardized DSHplus-STC and FMI interfaces make it possible to couple a DSHplus model with different target programs.

Result

- Realistic dynamic actuator forces
- Realistic actuator stiffness
- Realistic actuator acceleration time constants



Pressure Oscillation Analysis

Challenge

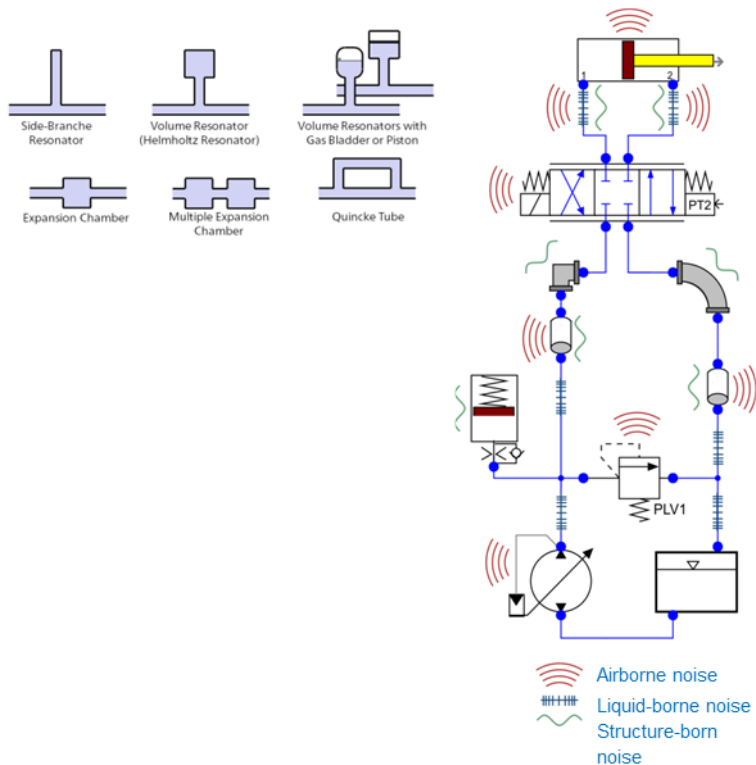
- Reduce pressure and flow ripples in fluid power systems
- Eliminate unwanted noise emissions

Solution

- Align the damper design onto the required resonant frequency
- Calculate the dynamic response of remaining network
- Determine the position of the damper with maximum pressure fluctuation

Result

- Rapid analysis of acoustic behavior of arbitrary pipe (and hose) networks
- Solve pressure oscillation problems



Optimization of Press Performance

Challenge

- What is the problem that your software helps solve?

Solution

- Simulation of main hydraulic system with regard to piping and control valves in DSHplus
- Implementation of sequencing control using the finite state machine based DSHplus-Director

Result

- Optimal control of valve actuation
- Prediction of press performance
- Best preparation of commissioning by pre-parameterized control



Quelle: SMS-Meer GmbH

Optimization of Bike Suspension

Challenge

- Design and optimization of a hydraulic mountain bike suspension

Solution

- Detailed DSHplus simulation model of the suspension
- Actuation with synthetic and real load cases using measured data
- Design of the damping characteristic

Result

- Damping fitted optimal to customer requirements
- Shortened development time by reduction of prototypes

