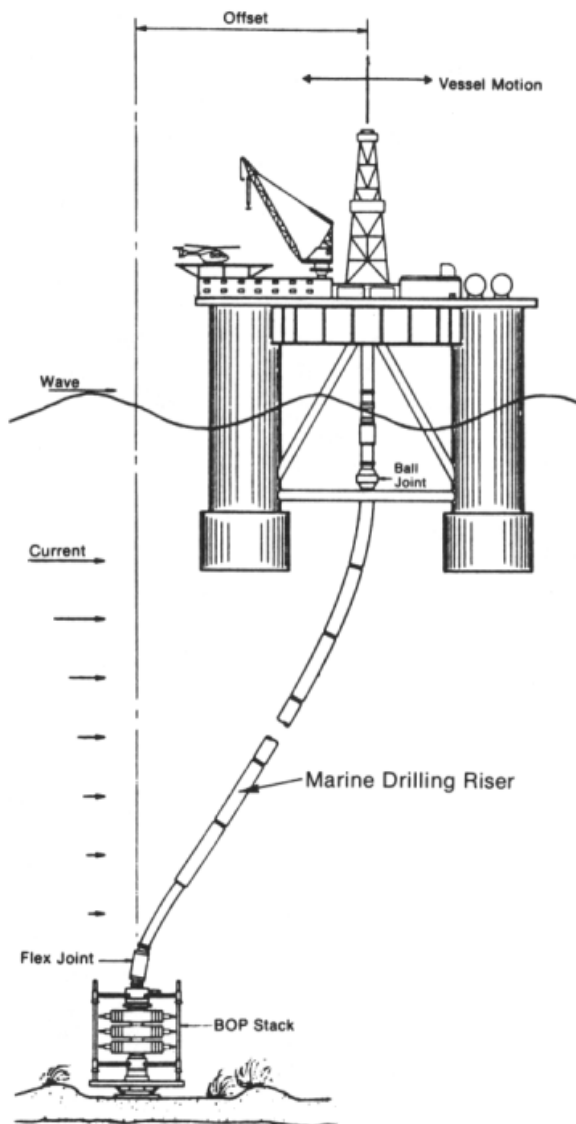


FEDEM Riser

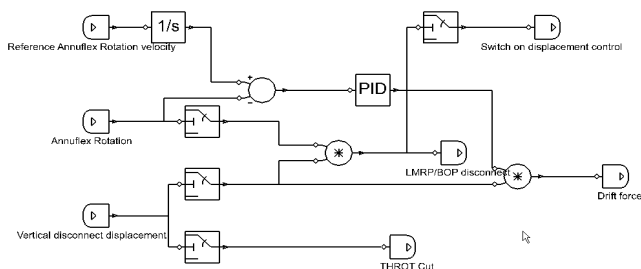
Virtual testing of Riser-Rig-Well systems- dynamics and full 3D FE modelling integrated.

FEDEM is specialised finite element software for solving nonlinear structural dynamic events of large assemblies.

FEDEM Riser is a set of features inside **FEDEM** that enables modelling and solving of slender structures like pipes, risers etc, submerged in water. Solver times spans from real-time to 5 x real-time dependent upon model complexity.



Marine Drilling Rig with Marine Drilling Riser



Built-in graphical control system

FEDEM Riser features:

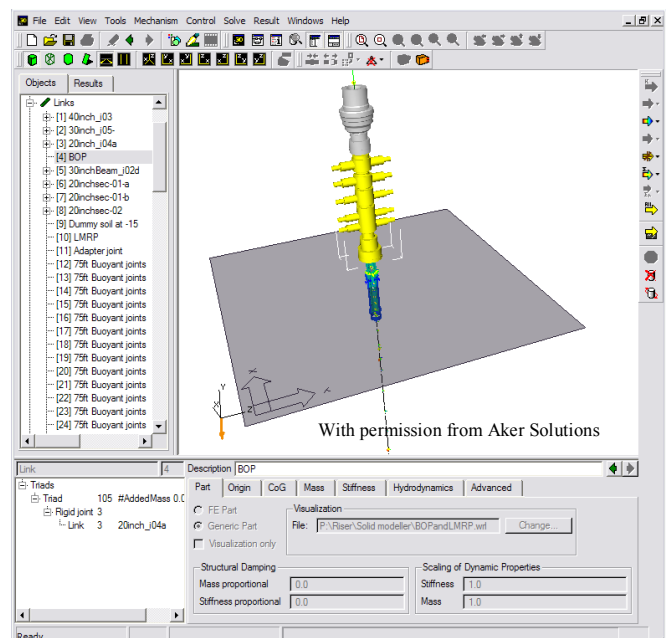
1. Sea state input, irregular (H_s , T_p and JONSWAP) or regular waves.
2. RAO (transfer function) for vessel motion.
3. Drag, buoyancy and added mass.
4. Parametric definition of riser

Standard FEDEM features:

1. Structure modelling:
 - a. FE parts as superelements (Static and Dynamic superelement reduction)
 - b. CAD parts as rigid or with user defined stiffness
 - c. Generic part as rigid or with user defined stiffness
2. Build-in Control system
3. Virtual strain gauges and strain coat
4. Powerful graph plotter
5. **FEDEMSolid**, a 3D modelling environment based on the SolidWorks.

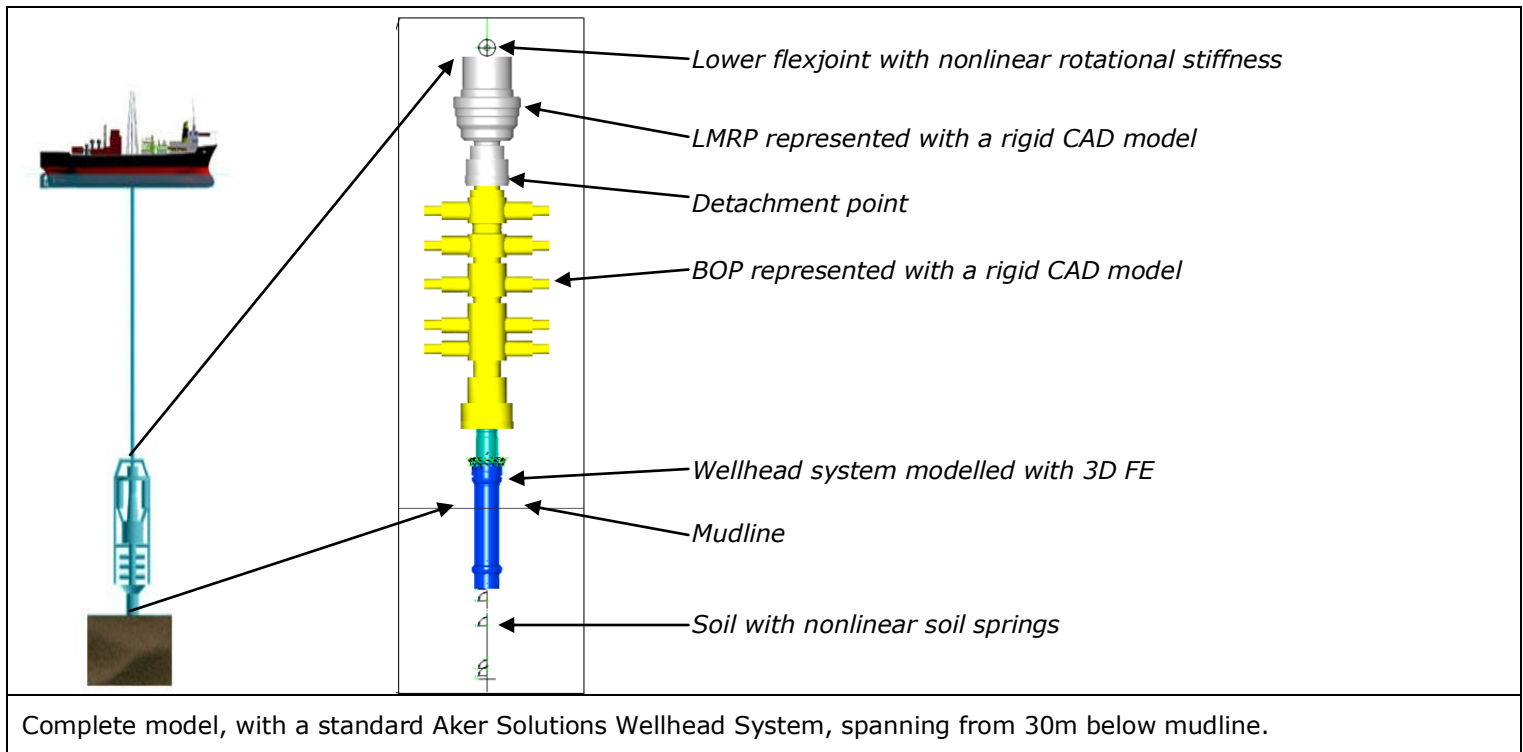
Result types:

1. Time histories of displacements, forces etc
2. Component free-free eigen modes
3. System Eigen modes.
4. Stress Summary (Max stress envelope) and Fatigue plots
5. Stress animations.

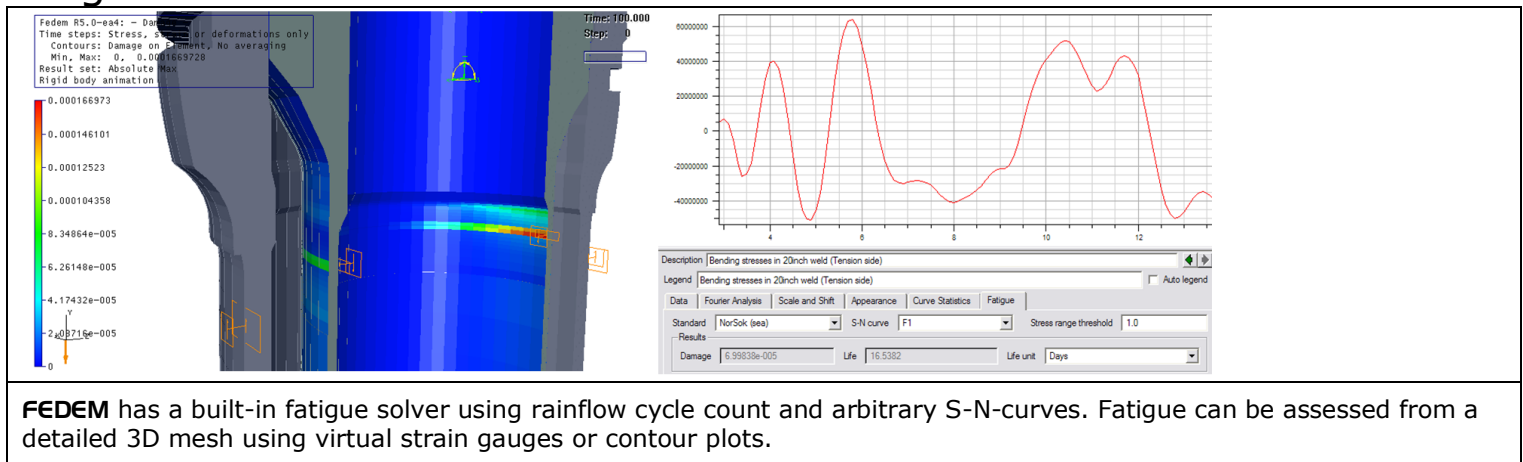


Graphical modelling environment

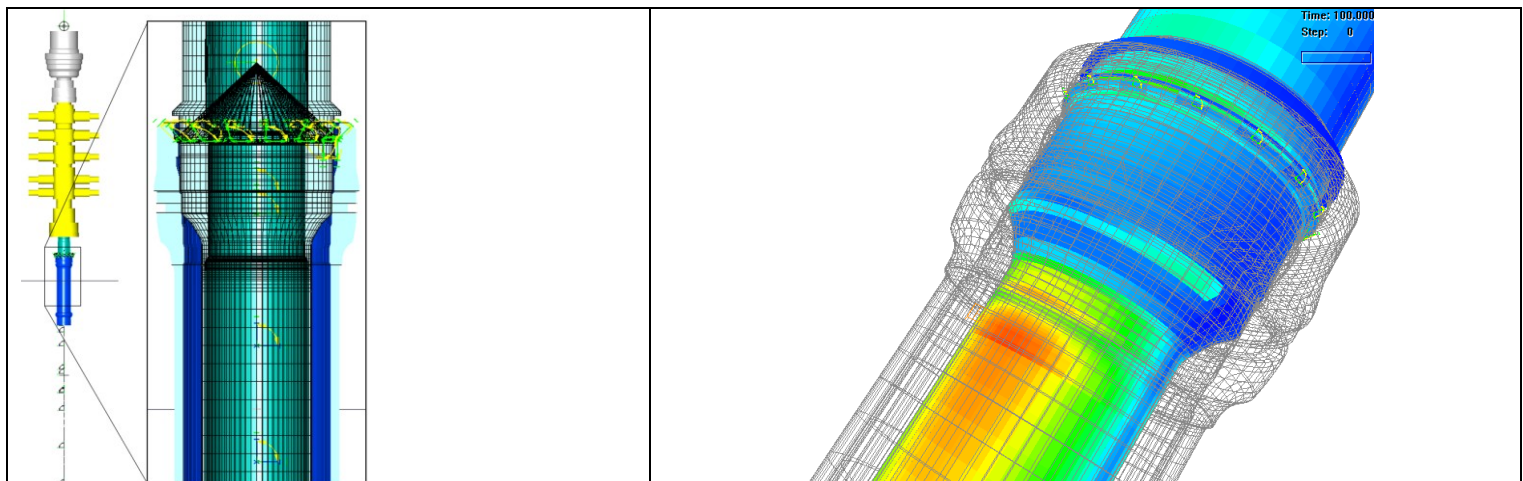
Subsea stack



Fatigue



Finite Element



FEDEM's core functionality is large motions and rotations of superelements connected to each other with nonlinear joints. A superelement consists of beams, shell and solid elements. This enables modelling of complex geometries like wellhead systems, connectors etc.