Latest News

Land Rover Discovery

IAVSD Symposium in Milan

CONGRATULATIONS LAND ROVER

Our congratulations goes out to the Land Rover team for their work on the double award winning Discovery. A very impressive presentation, "Uses of SIMPACK on the All New Land Rover Discovery", may be downloaded from www.simpack.com under software, publications, User Meeting 2004.

PLOT SUBVARS AND FORMULAS IN THE NEW SIMPACK PLOT

Substitution Variables (SubVars) and Formulas can now be used to define filter parameters in the new plot module. The SubVars are part of the loaded sbr file and are listed in the result tree. They can be assigned to a filter parameter by simply dragging and dropping them from the result tree onto a filter parameter. In addition to SubVars, in place formulas can now be used when defining filter parameters. E.g. par(2) = sin(PI/2) * 4711 A formula must be well formed QSA script code that returns a double value. Formulas can contain substitution variables (e.g. sin(resf1.subvar._sv1 * 10)).
Please note that the leading „$" sign of the SubVar name must be omitted and that to properly reference the right SubVar from the right result file, the SubVar name must be prepended by the result file index, e.g. resf1.subvar._sv1!

NEW SIMPACK PLOT FEATURES ANNOTATIONS

Annotations have been added to the new plot module.
Annotations are text frames that can be placed and moved inside a diagram. They are very useful for marking specific areas of interest inside a diagram, such as the maximum of a curve, or the impact on a curve of a specific event.
Annotations can be either free, attached to a curve or attached to a specific coordinate. In the latter two cases a line or an arrow is drawn from the annotation to the selected coordinate or curve point.
Annotations can also contain „Live Text" e.g. for displaying current curve x- and y-values.

19. IAVSD SYMPOSIUM ‚DYNAMICS OF VEHICLES ON ROADS AND TRACKS'

The week long 19th IAVSD Symposium 'Dynamics of Vehicles on Roads and Tracks' in Milan (in the end of August 2005) gave a good insight into the ongoing developments in the field of system dynamics for railway as well as automotive vehicles. INTEC was present, not only just to keep up with the latest developments, but was one of the event sponsors and exhibitors.

RESULT ELEMENT

‚Result Elements' have been added to SIMPACK. This new element type enables the user to define custom result requests, e.g. grouping the contact forces of all tyres of a vehicle into a single element. Each result element can have an arbitrary number of output channels. Result Elements can be logically grouped in a tree structure as well as switched on or off. They can be defined in main models or substructures. User specific Result Element types can be created via SIMPACK User routines.
When performing the measurement run, the user can specify, if all standard SIMPACK measurements should be computed or if only measurements for the result elements should be generated. This can greatly reduce the amount of data generated during a measurement run.

TMEASY

The tyre model TMeasy is now available as a new SIMPACK module. TMeasy is an easy to use tyre model designed specifically for efficient standard driving dynamic simulations and for finding a vehicle's handling limits. It's easy to fit measured tyre characteristic data with the tyre model parameters due to their intuitive meaning. This tyre model therefore also allows the user to easily adapt the model property characteristics to their needs. Please contact INTEC if you would like to receive more detailed information on the new module TMeasy within SIMPACK.

MODAL STRESS/STRAIN CALCULATION WITHIN SIMPACK

The new version of LOADS Durability is able to read the input data of FEMFAT MAX in order to perform modal stress or strain calculations in SIMPACK. Currently, the user can define several virtual strain gauges on the structure. The results can be displayed in SIMPACK's new plot tool. The results obtained in SIMPACK have been compared with transient analyses in ANSYS and the results were consistent for static and dynamic loading. Of course, local effects within nodes can precisely be calculated with the modal stresses as implemented in SIMPACK. The advantage of the coupled finite element and multibody system analyses, when compared with a transient finite element analysis, is the calculation speed, which allows us to calculate stress and strain for long simulation periods whilst using finite element and multibody system models with any level of detail. (Figure 1 and 2)

GRAPHICAL REPRESENTATION OF FLEXIBLE BODIES

By default SIMPACK's model set-up and postprocessor can picture meshes of finite element models if their source is ANSYS, NASTRAN, IDEAS or PERMAS. With SIMPACK's new interface to ABAQUS the user can now also import ABAQUS input files to generate a graphical representation of flexible bodies. Based on the nodes and elements of the ABAQUS model FEMBS generates a CAD-representation of the mesh, which is to be integrated into the SIMPACK model as a graphic primitive. To obtain the CAD-wavefront file, select the ABAQUS input file in addition to the result files, which are obtained after the reduction and the modal analysis of the reduced ABAQUS model.

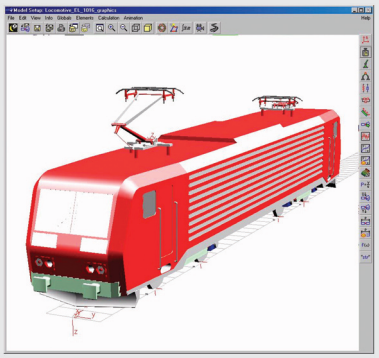

Figure 1: SIMPACK Model of a Locomotive

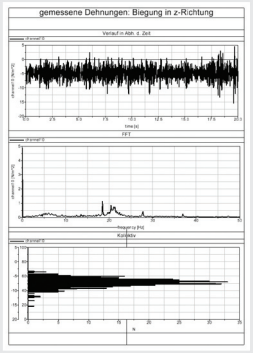

Figure 2: Time History of Strain of a Part, which is attached to the Bogie Frame