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COVISE/SIMPACK interface allows optimized development of multi-body systems

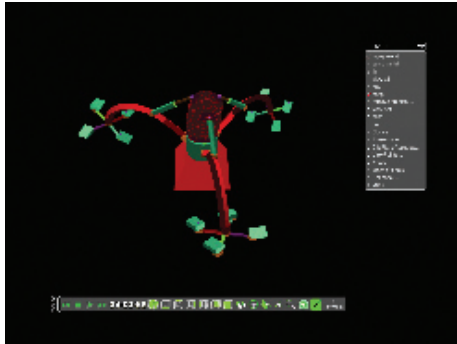


Fig. 1: VR-visualisation of a multi-body system with COVISE MBS

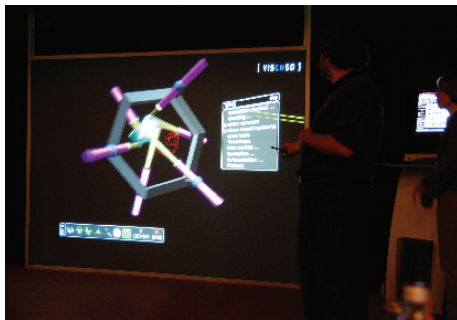


Fig. 2: Interaction with COVISE MBS in the VR-environment

Together with the Institute for Technical and Numerical Mechanics (ITM) of the Stuttgart University and INTEC, VISENSO now provides with COVISE MKS a solution which supports users in the automotive and supplying industry, in transport, aerospace industry, tool making, engineering and plant construction as well as in medical engineering in the improvement of the development of complex multi-body systems.

With the help of modern simulation and visualization technology the development of complex multi-body systems can be optimized today to a high degree: In Virtual Reality calculation and visualization results are connected to influence kinematics interactively via the combined visualization of geometry data and motion sequences.

From now on simulation results from SIMPACK, can be visualized directly in a virtual environment in real size and analyzed interactively by a COVISE interface without additional data preparation effort.

With the possibility for full size demonstration and direct interaction with complex 3D models in Virtual Reality, decisions can be made faster and safer and therefore valuable time and cost in the development process can be saved. Mistakes are detected early and thus misguided developments are avoided.

Via the extension of the visualization functionality of the COVISE VR renderer motion information out of the multi-body simulation can be connected directly with the visualization of the corresponding geometries. Different options are available for the animation's control. A coupling of the calculation with the visualization allows an interactive manipulation of the kinematics.

That means processes in the multi-body simulation are activated in the 3D visualization environment (for example the activation of a pendular).

Beside the Institute for Technical and Numerical Mechanics the Fraunhofer Institute for Integrity of Operation and System Reliability (LBF) in Darmstadt is among the first users of COVISE MKS. Here, concrete application scenarios are for example the areas of vehicle dynamics, drive engineering and machine dynamics.

Prof. Dr. Peter Eberhard, head of the ITM, who focuses on research in the field of the dynamic behaviour and influences of and on multi-body systems is convinced: "During research activities in the field of interactive dynamic simulation, the combination of volume and geometry visualization as well as Augmented Reality,

the application of multi-body simulation software like SIMPACK and visualization and VR software like COVISE, is indispensable to gain insight into complex spatial processes.

ABOUT VISENSO

VISENSO is one of the leading providers of visualization and Virtual Reality (VR) software and all-in-one solutions (hard- and software). Main item is the COVISE software. With its many functions and interfaces, COVISE provides the basis for an application of the VR technology over the entire process chain. The solution offers application possibilities starting from design, calculation, construction and prototype building across to production planning and tool fabrication to the point of marketing and sales. Based on the CAD model, the entire production development and manufacturing process can be simulated. Additionally there exists the possibility for the co-operative visualization of complex calculation results (for example in fluid and structural mechanics).

CAE data can be visualized and analyzed simultaneously and comprehensively in companies and over different locations. COVISE is the „Total Physical Interface“, that allows a joint visualization of all physical attributes of virtual products and therefore an optimized communication to all users.

With CYKLOOP and VIS2GO, VISENSO offers medium-sized companies VR complete solutions at an affordable price which are specific to their demands. Counted among VISENSO's clients are for example: Airbus, Audi, BMW, DaimlerChrysler, Dieffenbacher, DLR, Faurecia, Festo, EADS, Hyundai, IVM, Kärcher, Kussmaul, MTU, Norsk Hydro, Porsche, Rehau, Salomon, SCA, Siemens, Stihl, VA Tech, VW, Zeiss and ZKM as well as numerous well-known research facilities like the Fraunhofer IPA, IPT and LBF, ETH Zürich, KTH Stockholm, Leibniz Rechenzentrum and TU Munich and many more.