With MECHANISM/Pro, you can easily convert an assembly created in PTC’s Pro/ASSEMBLY into a complete mechanical system design by adding joints, forces, and motion generators. Working from a menu of standard joint types, you connect parts with joints by selecting existing Pro/ENGINEER data and geometry.

Joints are fully associative to the Pro/ENGINEER geometry. When the geometry changes, the joints are automatically updated to reflect these changes.

MSC Software, Inc. — the company that established the field of mechanical system simulation with our widely-used MSC.ADAMS software — has developed an easy-to-use mechanism design and simulation tool for designers and engineers who work with Parametric Technology Corporation’s popular Pro/ENGINEER software.

MECHANISM/Pro is seamlessly integrated with Pro/ENGINEER, enabling you to perform vital design, simulation, and analysis tasks to assess your assembly’s kinematic motion characteristics. Without ever leaving the Pro/ENGINEER environment, you can:

- Verify and evaluate motion paths
- Locate lock-up positions
- Detect interferences
- Establish workspace envelopes
- Calculate joint reaction forces

One-button transfer to MSC.ADAMS enables you to run full dynamic simulations of your models — to account for clearances within joints, flexible parts, impacts, and forces that influence motion — without having to re-enter data.

For advanced visualization capabilities such as high-speed animation, collision detection, multiple light sources and plotting, you can obtain Mechanism/Pro with our optional MSC.ADAMS/PostProcessor.

MSC Software, Inc.  
2600 Enterprise Drive  
San Jose, CA 95134  
Telephone: 1-800-944-8447  
Fax: 408-985-6970  
E-mail: info@mscsoftware.com  
Website: www.mscsoftware.com

MSC ADAMS  
CAD-Embedded Product

MODELING

With MECHANISM/Pro, you can easily convert an assembly created in PTC’s Pro/ASSEMBLY into a complete mechanical system design by adding joints, forces, and motion generators. Working from a menu of standard joint types, you connect parts with joints by selecting existing Pro/ENGINEER data and geometry.

Joints are fully associative to the Pro/ENGINEER geometry. When the geometry changes, the joints are automatically updated to reflect these changes.

VISUALIZATION

You can use MECHANISM/Pro’s motion calculations to animate Pro/ENGINEER models. This can help you understand the 3D motion behavior of your designs, check for interferences, and establish workspace envelopes. You can also plot your simulation results in graphs, which are displayed in separate Pro/ENGINEER drawings.

For advanced visualization capabilities such as high-speed animation, collision detection, multiple light sources and plotting, you can obtain Mechanism/Pro with our optional MSC.ADAMS/PostProcessor.

SOLUTION

Model data — including mass properties (calculated by Pro/ENGINEER) of the various parts in the system, as well as joint, force, and motion definitions — are automatically transferred to MECHANISM/Pro’s kinematic solver for analysis. In a matter of seconds, MECHANISM/Pro formulates and solves a system of equations that defines the mechanical system (including equations of motion and force balance equations). The solver then automatically transfers motion data back to Pro/ENGINEER.

Joint reaction forces are calculated at each system position, reflecting external forces and inertial loads. These calculated and applied loads can be used as load cases for FEA.

MSC Software, Inc.  
2600 Enterprise Drive  
San Jose, CA 95134  
Telephone: 1-800-944-8447  
Fax: 408-985-6970  
E-mail: info@mscsoftware.com  
Website: www.mscsoftware.com

MSC ADAMS  
CAD-Embedded Product
CAM SYNTHESIS

With MECHANISM/Pro’s cam synthesis capabilities, you can automatically create 2D cam profiles (Pro/ENGINEER data curves) based on the motion of your mechanical system design. Cams supported include roller, grooved, worm, and conjugate. Cam profile characteristics such as pressure angle, velocity vectors, acceleration vectors, and radius of curvature can be visualized graphically and with xy plots.

You can create full-system assemblies for kinematic analysis in the Pro/ENGINEER environment using our embedded MECHANISM/Pro software, then transfer your designs to MSC.ADAMS for static and dynamic simulations. Full upward-compatibility means one-button file transfer with no need to re-enter data.