

DELMIA
SOLUTIONS

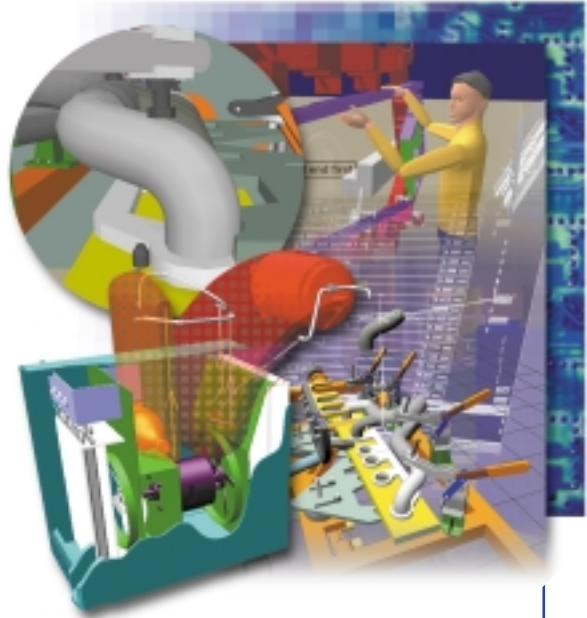
Design For Assembly

ENVISION/ASSEMBLY™ is a powerful 3D simulation tool to visualize and validate process design for assembly and disassembly. Using ENVISION® or IGRIP® with the ASSEMBLY option, engineers can study and optimize multiple assembly/disassembly process scenarios early in the design stage. By linking product and process design, improvements are implemented up front, in the design stage, reducing product launch time and cost.

As a Design For Assembly tool (DFA), ENVISION/ASSEMBLY facilitates development of multilevel assemblies, sequences, part paths and process documentation. Design and manufacturing engineers analyze various scenarios to determine the best assembly process and disassembly/reassembly of the product for maintenance. Then, the simulations are recorded and used for shop floor instructions, maintenance instructions and training. Tremendous cost savings are realized from early troubleshooting, DFA and fewer product and process design changes during product launch.

Detect collisions

A sophisticated interference checking enables a user-specified acceptable part proximity. Part collisions and clearances are detected and displayed in real time and highlighted in a hierarchy tree window. If parts collide, an interference curve is automatically generated and the data can be sent to design. If collision or interference notification is undesirable for mating parts, a "negative clearance" function allows users to specify a desired part penetration.



Rapidly generate assembly sequences and capture part motion

ENVISION/ASSEMBLY's simple graphical programming interface allows the user to specify instructions in the Gantt chart for each part without having to memorize special language syntax, and enables task synchronization between assemblies, tools, robots and human models. Once defined, the sequence is coupled to the model. As changes are made, the model is automatically updated.

ENVISION/ASSEMBLY's part motion trajectory generation technology allows the user to simply place a part in a desired location, and the position is automatically "captured." Both simple and complex part motions are reproduced in the simulation exactly as defined in the original motion.

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Automatically generate collision-free paths

ENVISION/ASSEMBLY easily defines a collision-free path for those difficult to remove/insert parts. A function is provided to automatically generate part paths that avoid collisions with the remainder of the data in the model.

Inspect internal parts and clearances

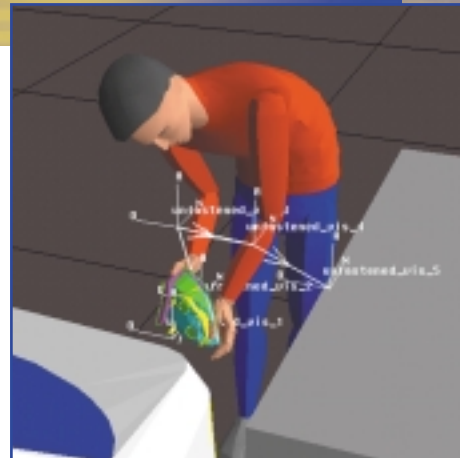
Using dynamic cross sectioning, a flat plane can be moved through 3D space and cut through an assembled part to allow inspection of internal details. ENVISION/ASSEMBLY also automatically generates a "swept volume" (the 3D shape of a part trajectory) to visualize clearances. The generated swept volume is created as a part, allowing it to be measured, exported to CAD and used in a collision clearance evaluation.

Simulate cables and wire harnesses

Soft, flexible, tubular-shaped items may be incorporated into your assembly simulation with ENVISION/ASSEMBLY's cabling option. These objects change shape in real time to reflect the geometric constraints imposed upon them.

Large scale visualization, Virtual Reality Environment and Collaboration

Visualize large data sets with multiple levels of detail. Optional Virtual Reality drivers provide immersive fly-thru capabilities for ultimate visualization. The Virtual Collaborative Engineering (VCE) option enables multiple users at remote locations to interact with the same model.



Seamless Integration

ENVISION/ASSEMBLY is part of DELMIA's Enterprise-wide Digital Manufacturing Solution. Used in conjunction with IGRIP, Virtual NC, QUEST, or ENVISION/ERGO, assembly sequences are easily combined with robots and other automated mechanisms within the same physics-based environment. Also, all workcells are easily linked to resource and process planning models and process flow analysis products to provide one seamless Digital Manufacturing solution.

Maintenance, Training and Shop Floor Instructions

All DELMIA simulations can be easily recorded for playback throughout the entire organization for training and maintenance applications. Using DELMIA's Digital Manufacturing ReView, a low-cost simulation player, anyone throughout your organization can easily play back recording files without needing the original authoring software or advanced training.

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PROCESS PLANNING