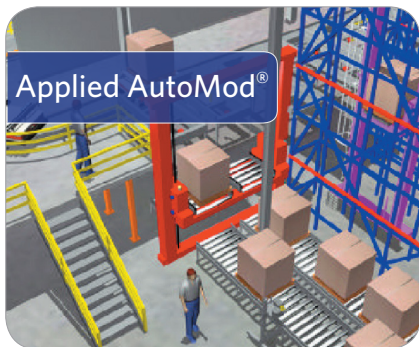# APPLIED AUTOMOD®

SIMULATION AND MODELING SOFTWARE

The only 3-D simulation tool that can model the largest and most complex manufacturing systems by combining the ease-of-use features of a simulator with all the power and flexibility of a simulation language.

Applied AutoMod®

Industries

> Aerospace
> Automotive
> Cargo and baggage handling
> Logistics
> Manufacturing
> Material handling and automation
> Parcel and letter handling
> Semiconductor manufacturing
> System integrators
> Warehousing and distribution

Features

> 3-D virtual reality animation graphics
> Material handling templates
> Detailed statistics and optimization
> Interactive modeling

Benefits

> Reduces design and development time
> Reduces risk of operation bottlenecks
> Models simple or complex systems
> Provides highest degree of modeling accuracy
> Enhances confidence in process design
> Reduces risk of costly design mistakes
> Supports capital equipment investment analysis
> Increases worker productivity

Challenges

For years, organizations have been using simulation packages to better understand how to optimize their equipment, personnel and resources. As a planning and decision support tool used to design or modify manufacturing facilities, simulation can validate system design and help reduce capital costs and operating expenses. Simulation packages also help perform operational analysis for continuous productivity improvements throughout the life of a facility. Unfortunately, not all simulation packages are created equal—many are two dimensional or slow to run, do not handle large models efficiently or lack the necessary detail for accurate analysis.

Solution Description

AutoMod is the leading graphical simulation software package for modeling, analyzing and emulating complex manufacturing and material handling systems. It simulates complex movement systems with 3-D animation, verifying that systems will work as planned, which reduces the risk of costly design mistakes. With over 30 years of industry experience built into its design—coupled with best-in-class accuracy—AutoMod is the most widely used simulation software by high tech and automation companies.

The advantage of AutoMod is the level of detail users can incorporate into their models to accurately reflect reality. When running a model, you can visualize a facility in action and view it from any angle. This level of detail enables you to spot bottlenecks in existing systems and anticipate problems that are still on the drawing board.

FLEXIBILITY. AutoMod meets the needs of both the casual, first-time user and the full-time simulation model builder. You can accurately simulate systems of any size or level of detail—from manual operations, work cells and fork trucks to airline ticket counters and semiconductor fabs.

ACCURATE STATISTICS. With AutoMod, you can automatically generate reports and graphs, providing information about all aspects of your system, such as equipment utilization and inventory levels. You can even view reports in tables or with built-in business graphics.

EMULATION. An AutoMod model can also be used as an emulator. The model can emulate motors, sensors and other equipment while communicating with system programmable logic controllers (PLCs). The PLC logic controls the model, so you can test and verify PLC coding. An AutoMod model can even emulate the characteristics of an entire system, including PLC logic, functionality and communication. The model communicates with high-level control software, enabling you to test and verify the control software itself.

EDIT AND SIMULATION WINDOWS

From the AutoMod edit environment, you can build your model and define model parameters. This example shows a path mover system with a fork lift and ASRS.
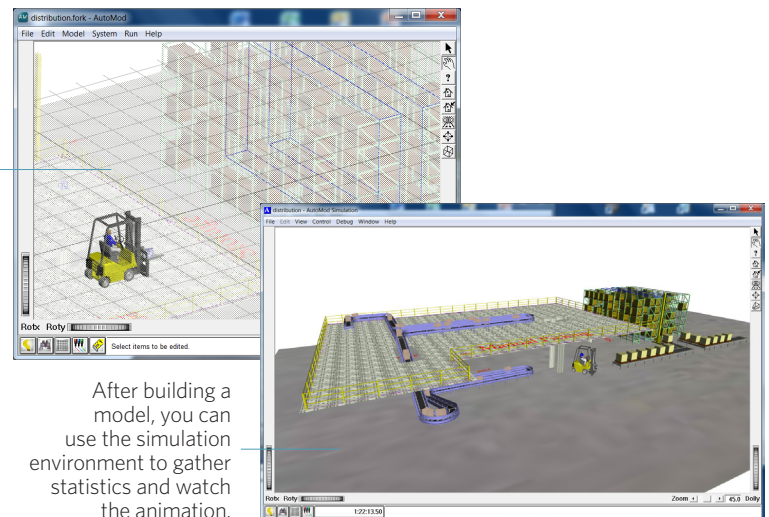
After building a model, you can use the simulation environment to gather statistics and watch the animation.

APPLIED MATERIALS®

APPLIED AUTOMOD®

## SIMULATION AND MODELING SOFTWARE

300%
Improvement

Percent capacity throughput improvement achieved by one customer who used AutoMod to study the impact of a multiyear expansion to increase their operations. The customer extended the life of their existing facility, delaying the need for investment in a new distribution center.
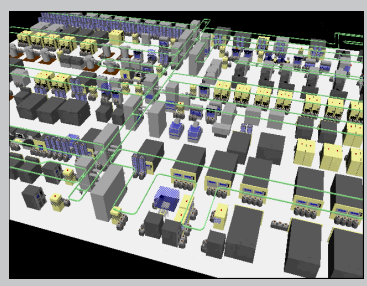
AutoMod provides the user with expert-based material handling templates that have been developed through real-world experience in industrial automation.

AutoMod 3-D animations help enhance the understanding of complex systems.
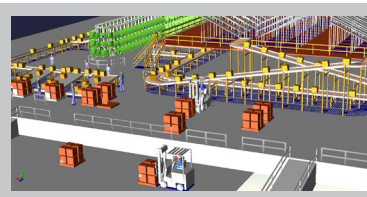
AutoMod simulates both manual, continuous-flow and automated material handling systems with an unsurpassed level of accuracy.

Customer Results

AutoMod improves profitability by optimizing equipment, personnel and resources. Demonstrated results reported by customers include:

> Greater equipment utilization
> Improved decision logic
> Resolved bottlenecks
> Improved system integration
> Improved throughput and material flow
> Reduced equipment requirements

Package Contents

AutoMod Basic includes a CAD-like build environment that you use to define the logic and the physical layout of your facility. It also includes a graphical environment in which you observe and analyze running models. With AutoMod Basic you can also choose two movement system modules or extensions (each of which you can also purchase separately):

MATERIAL HANDLING MODULES. AutoMod material handling modules include:

> Conveyors. Supports all conveyor types and components, including individual sections and transfers, stations, motors and photoeyes. Includes graphical templates for hundreds of makes and models.
> Path Mover Systems. Supports material handling systems in which vehicles or people move along a guide path, carrying loads from pickup locations to delivery locations.
> Power & Free. Similar to conveyors, but typically with overhead carriers, or trolleys, moving on chains. Alternatively, may consist of floor-level towlines.
> AS/RS. Supports automated storage and retrieval systems consisting of storage racks where storage/retrieval machines pick up and retrieve material.
> Bridge Cranes. Supports sets of rails on which cranes move over pickup and delivery areas.

EXTENSIONS. A variety of extensions to AutoMod are available for animations, presentations, analysis and communications:

> Kinematics. Enables you to simulate robots and other equipment containing moving parts and to integrate them into an AutoMod model.
> AutoStat. Performs enhanced statistical analysis. With AutoStat™, you can design experiments, perform runs, consolidate results and review data in tables or import it into spreadsheets.
> AutoView. Creates fast, smooth and professional animations of AutoMod models. AutoView™ enables you to zoom in and walk through a model, pan from one view to the next and move back and forth in time and space.
> Model Communications Module. Transfers information between models and control systems, among multiple models, and from models to other applications. With this capability, you can test control system design prior to implementation.
> Runtime License. Enables you to perform what-if scenarios on pre-built models. You can change parameters, run models and view results. The addition of AutoStat to a Runtime license provides enhanced statistical analysis capability in run-time mode.

SERVICES, TRAINING AND SUPPORT

> User training
> One year of maintenance and support

APPLIED GLOBAL SERVICES

APPLIED MATERIALS®