

## Systemflow Simulations

Systemflow Simulations, Inc. is a consulting, engineering services and technology firm. Using advanced computer modeling and visualization and other techniques, Systemflow helps clients maximize throughput, improve system flow, and reduce capital and operating expenses.

The company's headquarters office is in Indianapolis, Indiana, USA. Since 1993, Systemflow has completed a large number of design analysis, system flow improvement and process mapping projects in material handling and other diverse application areas.

### SERVICES

Systemflow offers simulation project engineering and management consulting to clients in various areas: material handling systems, manufacturing, transportation and distribution, and mining and mineral processing.

Systemflow assists clients with: facility/process design evaluation, facility visualization, capacity analysis, optimization, controls/system emulation, troubleshooting, capital project evaluation, and process re-engineering.

### SOFTWARE TOOLS

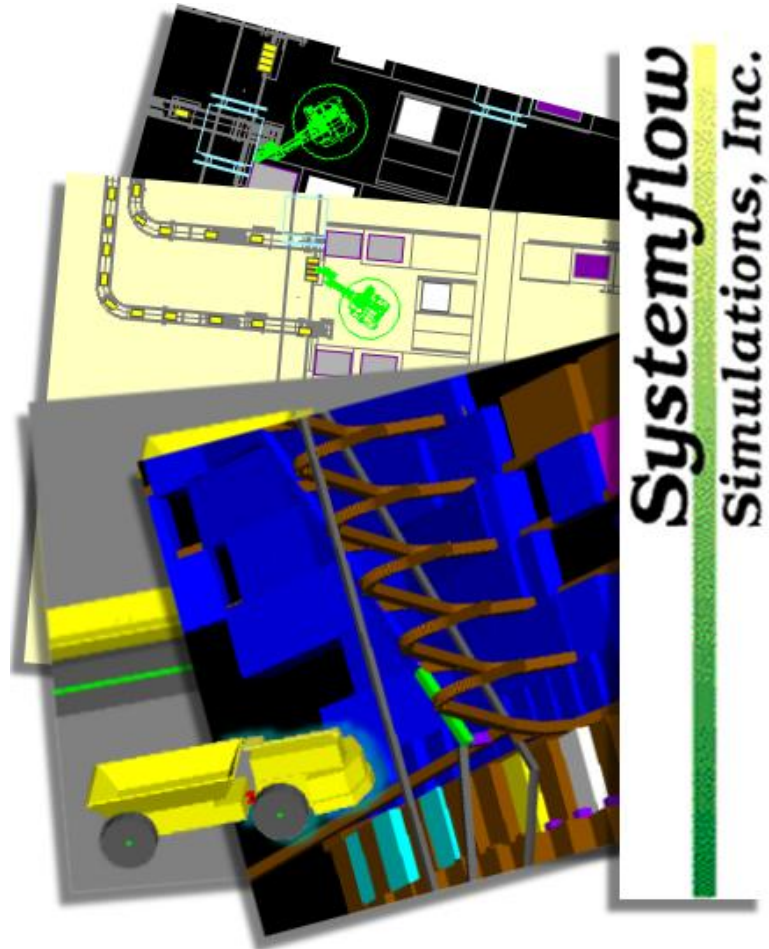
Systemflow maintains staff-wide expertise in AutoMod, SLX with Proof Animation, Extend, ProModel, and Systemflow 3D Simulator. Systemflow also uses other tools on an as-needed basis.

Systemflow possesses the knowledge, experience, and impartial view to help choose the most appropriate tool for the job at hand. Systemflow is also able to build customizable simulation tools.

### WHAT IS SIMULATION?

Simulation is the art and science of creating a computer model that mimics the operation of a real-world process or system over time. The model, built with the purpose of experimentation and evaluation, can be used to gain understanding of the system and predict its behavior under a variety of what-if scenarios.

Simulation has become an indispensable problem-solving methodology for the solution of real-world problems. It has been successfully used in areas such as design, planning, analysis, scheduling, and training.



### BENEFITS OF SIMULATION

Clients designing a new system, plant, or process, as well as clients proposing changes to an existing system can use simulation to:

- Visualize and evaluate the system's behavior before it is built or before proposed changes are made.
- Establish the system's statistical behavior under multiple "what-if" scenarios.
- Validate design prior to full-scale implementation.
- Explore and evaluate the implications of changes in plant layout, policies, operating procedures, or methods.
- Identify system bottlenecks.
- Demonstrate the effectiveness of new design approaches
- Sell ideas to management or customers
- Develop understanding about a system and how it operates

## MATERIAL HANDLING SYSTEM PROJECTS

Material handling system simulation is a primary focus at Systemflow Simulations, with over fifty such projects completed. We have simulated just about all types of equipment anyone might be familiar with, as well as new types of equipment not yet on the market.

From AS/RS to carousels to conveyors of all types, to guided and free-ranging vehicles, elevators, WMS logic, layerpickers, robots, manual rack systems...you name it. We've modeled to analyze and modeled to visualize, often both. We've delivered results and we've delivered completed models for others to use.

## GENERAL APPLICATION PROJECTS

Systemflow personnel have performed a wide variety of projects relating to the individual activities and/or flow of people and equipment. Selected project types Systemflow has worked on include:

- Hospital facility: inpatient and outpatient movements, physician schedules and movements, and staff and room resource constraints.
- Bus/subway station: street & pedestrian traffic.
- Physical task simulation: ergonomics simulation of a worker performing various heavy tasks.
- Robot simulation: various simulations of fixed and free-ranging robots to analyze interference, to demonstrate operation, and to assess congestion.

## MANUFACTURING PROJECTS

Systemflow personnel have performed many manufacturing system simulation studies for the automotive, process, food product, and manufacturing industries. Selected project types Systemflow has worked on include:

- Automotive paint shop: strip banks, baking subsystem, and entire shop.
- Building products: manufacturing and transportation facilities.
- Farm equipment assembly lines.
- Automotive component manufacturing and assembly lines: trim, chassis, and final build areas; engine blocks; seat delivery; body build-up area.
- Food products manufacturing.

## DISTRIBUTION AND TRANSPORTATION PROJECTS

Systemflow personnel have completed numerous studies of distribution and transportation facilities. Systems modeled include: picking, handling, palletizing, loading, shipment scheduling operations, air and rail shipping, baggage handling, trucking, and passenger vehicle transportation systems. Selected project types include:

- Distribution centers for: food products, meatpacking, consumer goods, shipping, and equipment manufacturing companies.
- High-volume parcel handling for shipping companies.
- Carton handling in many different industries.
- Baggage handling systems.
- Innovative material handling automation systems.

## MINING AND MINERAL PROCESSING PROJECTS

Projects in this area range from underground and surface mine operation, to crushing, milling, smelting, and refining operations, to stockpiling, shipping and general materials handling. Selected Systemflow project types in mining and mineral processing include:

- Open pit mine equipment comparison
- Long-Range development and production planning of underground mines.
- Production, equipment, personnel, and resource scheduling.
- Ore and waste handling: bulk conveyors, underground passes, hoisting, stockpiling, and trucking, crushing and mill plants operation.
- Smelter operation.

## PRODUCTS

Systemflow also has a software product development division specializing in technologies for advanced 3D visualization. If you have a visualization requirement not met by other software, ask us about these tools.

## CONTACT INFORMATION

If you have a need to assess and improve the performance of an existing or planned system, want to see how your organization can reduce capital and operating costs, or are considering outside help for your ongoing simulation efforts, consider Systemflow Simulations.

If you would like to contact us concerning simulation, or want to find out more about Systemflow Simulations, Inc., please follow one of the contact options given below.

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