AgX Dynamics is a professional multi-purpose physics engine for simulators, engineering, large scale granular simulators and more.
NOVEL UNIFIED MULTIPHYSICS SIMULATION

The technologies of AgX Dynamics are derived from a discrete variational Lagrangian mechanics for constrained systems with dry frictional contacts. This gives robust time integration and valid solutions even for systems with loops and redundant constraints. The models have been generalized to deal with multiphysics representation of elasticity, hydraulics, fluids, electromechanics, and hydrodynamics. Our hybrid solver framework combines the full machine precision resolution of sparse blocked direct solvers with the raw performance of parallel iterative solvers and can handle stiff systems and scaling to millions of equations.

WORKING WITH ALGORYX

We offer a range of services with our software solutions. AgX Dynamics OEM licensing comes with highly responsive support and maintenance, which can also be customized for specific customer requirements. Our experienced engineers provide training and efficient services to give AgX integration a flying start in projects. We also offer services for modeling, toolchain integration, extensions and R&D.
AGX DYNAMICS - PROFESSIONAL SIMULATION SOFTWARE

Combines performance and accuracy for professional and industrial applications.

OFFSHORE
High performance dynamics simulations from Algoryx are an essential component in offshore simulators and a key element in the upcoming virtual prototyping area around the globe. Hydrodynamics, highly stable, accurate and fast multi-body dynamics with wire, cable and chain models, geometric overlap generation with dry frictional contacts and much more.

7 out of 9 leading training simulator suppliers choose AgX Dynamics before other alternatives.

“Thanks to the robust AgX Dynamics, our training simulators of cranes, drilling rigs, wheel loaders and excavators can run in real time with high precision, handling thousands of objects.”

/ Rami Morssy, Oryx Simulations

“Algoryx’s core solution, AgX Dynamics, delivers unprecedented simulation performance, quality and stability in our marine training simulators.”

/Erik Hovland, Kongsberg Maritime AS

HEAVY VEHICLE
AgX Dynamics contains modules for simulating heavy machines and vehicles, powertrains, hydraulic systems with ground interaction as well as the ground itself – all in the same simulation. Our solutions has successfully been used for simulating excavators, wheel loaders, cranes, fork lifts and even drilling equipment. With the AgX Dynamics technology accurate specifications for mass, torque, tension etc. can be used which allow you to focus on the scenario and leave the dynamics to us.

GRANULAR
When handling materials such as iron pellets, medicine pills, rocks or other bulk materials, simulations can be a powerful tool for optimizing and increasing understanding of the process. AgX Dynamics offers powerful solutions for simulating granular and bulk material. Parallel computing and optimized data structures allows for fast and scalable simulations with millions of particles even on conventional desktop computers.
ABOUT ALGORYX

Algoryx Simulation is a leading provider of software and services for visual and interactive physics based simulation. Our solutions are enabling for virtual training systems, and for simulation driven product and process development. Our success builds upon our teams passion for science, our excellency in design and engineering, and most importantly - our close customer relations.

Algoryx was established in 2007 as a spin-off from Umeå University in Sweden, and the UMIT Research Lab, which is a leading international center for research in computational science and engineering.