



# ALTAIR FOR AGRICULTURE & CONSTRUCTION

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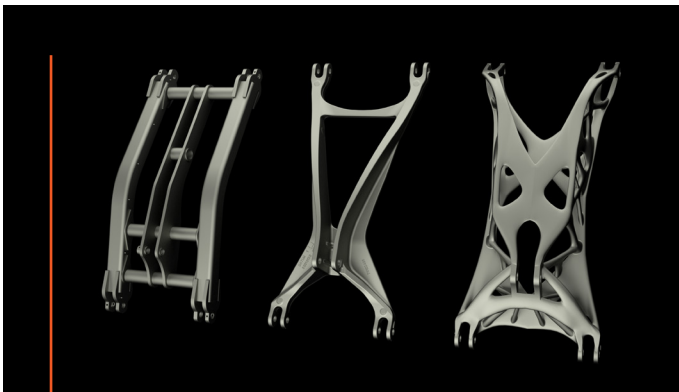


These are the big jobs. Highways. Farmland. Bridges. Factories. The large-scale projects that require great precision and heavier loads in extreme environments. But we can help. With Altair's simulation-driven design approach, you can create reliable products of the highest quality, while reducing costs and product cycle time. Simulation allows rapid investigation and analysis of product performance, factoring in fatigue and impact loads, and offering countermeasures for improvement. Whether farmland or highway or construction site, we'll help you carry the load.

## **MAXIMIZE EQUIPMENT PRODUCTIVITY, RELIABILITY, SAFETY AND COMFORT**

### **Speed and Efficiency**

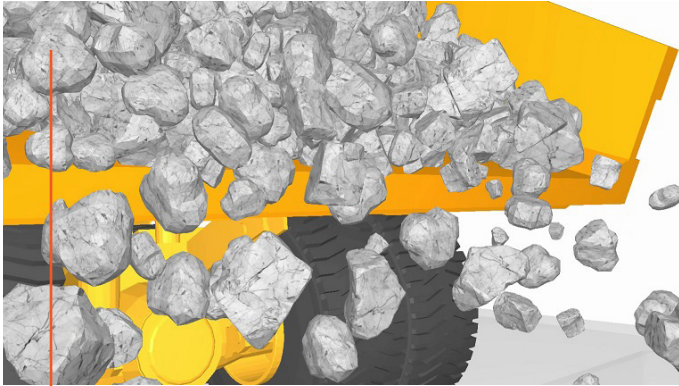
Heavy equipment manufacturers are using simulation tools early in the development process to maximize productivity, reliability, safety and comfort. Altair MotionSolve™ multi-body simulation enables the modeling the dynamic response of mechanisms. Together with Altair EDEM™, customers can optimize designs before building a prototype to quickly and accurately simulate the behavior of bulk materials such as coal, mined ores, soils, fibers and grains.



Using Altair Inspire™, Amazone re-designed an originally welded suspension component as a cast part, while improving weight and durability properties

## Compatibility and Durability

For reliable equipment operation all sub-systems, even from multiple suppliers, need work together. Altair Activate® rapidly models multi-disciplinary systems as 1D models. By simulating product performance, customers can understand overall behavior earlier and recognize key component interactions. To meet customer service life requirements measured in decades, Altair HyperLife™ provides a comprehensive and easy to use durability analysis workflow.



A dump truck unloading rocky material simulated with EDEM®

## Operator Environment

Comfort and safety go far beyond cabin comforts. The advanced Noise, Vibration & Harshness (NVH) analysis of Altair OptiStruct™ is used broadly to ensure operators can perform at their best. Quality is further addressed by Altair Squeak & Rattle Director™. Altair Radioss™ models roll-over protection structure (ROPS) and falling object protective structure (FOPS) events to assure the integrity of the vehicle and protect its operator across all operating conditions.

## **SUSTAINABLE, CONNECTED, AND SMARTER PRODUCTION**

### **Electric Drivetrains**

The move towards hybrid and full electric powertrain systems provides manufacturers with business challenges and opportunities. Bringing electric equipment development cycles into alignment with traditional program timelines requires changes to engineering team structures and toolsets. Powertrains must be highly efficient and lightweight, while meeting new regulations and growing customer expectations. Learn about our specific offerings for electric powertrain development and integration, simulation for battery design and safety.

### **Agribots and Warehouse Innovation**

Equipment connectivity and electromagnetic compatibility (EMC) is essential to today's fleets. Both can be optimized with Altair FEKO™ and Altair Flux™. FEKO® is widely for the design and placement of antennas and modeling wave propagation for network simulation. Flux can evaluate the magnetic field radiated by power cables and busbars, and the effect of external fields on the operation of sensors or actuators. FEKO can simulate both the radiation and irradiation of cables, antennas, and devices to inform the design of effective shielding.

### **Smart Mining, Construction, and Farming**

Digital Twins help organizations optimize product performance, gain visibility into the in-service life of a product, know when and where to perform predictive maintenance, and how to extend a product's remaining useful life (RUL). Altair SmartWorks is a powerful collection of web services and analytics tools to scale IoT systems. Modern greenhouses are becoming increasingly tech-heavy, using LED lights and automated control systems to perfectly tailor the growing environment. Toggled subsidiary creates smart lighting products and grow lights.

# HELPING THE INNOVATORS INNOVATE, DRIVE BETTER DECISIONS, AND TURNING TODAY'S PROBLEMS INTO TOMORROW'S OPPORTUNITIES.



## ALTAIR TRENDING IN:

Additive Manufacturing  
Autonomous & ADAS  
Big Data  
Cloud Computing  
Data Transformation  
Digital Twin  
e-Mobility

Exascale  
GPU Solutions  
Lightweighting  
Machine Learning  
Mechatronics  
Smart Product Development  
5G



**When we are ordering tons and tons of raw materials for our chains, a pound here and a pound there starts becoming important, —**

so that's where we spend a lot of time trying to optimize our product. Applying Altair SimSolid™ to this challenge in the long run will make us a lot of money."

**Bob Adams, Serapid, Inc.**



Altair is a global technology company that provides software and cloud solutions in the areas of product development, high performance computing (HPC) and data analytics. Altair enables organizations across broad industry segments to compete more effectively in a connected world while creating a more sustainable future.

To learn more, please visit [altair.com](https://altair.com)

