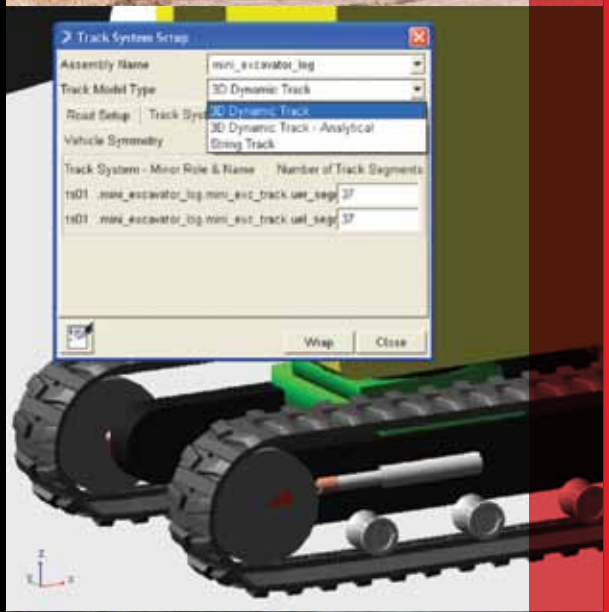


Adams Tracked Vehicle (ATV) Solution

Create, Modify, and Simulate Realistic 3D Models of Tracked Vehicles in Adams

MSC Software

Adams Tracked Vehicle (ATV) Solution

Create, Modify, and Simulate Realistic 3D Models of Tracked Vehicles in Adams

What is it?

The ATV Solution is an add-on toolkit for Adams developed in cooperation with end users. It provides a complete environment to build and simulate 3D tracked vehicle models in the Adams.

Who is it for?

ATV is used for a wide range of applications such as dynamic mobility studies, turret and weapon control design, sprocket teeth design, high speed turning events, road wheel suspension design, track tension optimization, failure and panic event studies, and generation of accurate loads for stress and fatigue studies.

Companies using ATV include product manufacturers of:

- Tanks and other defense related equipment
- Construction equipment
- Agricultural and forest equipment
- Mining and mining operations
- Snowmobiles and off-road vehicles

The ATV Solution provides a complete environment to build and simulate 3D tracked vehicle models in Adams.

How is it used?

The interface and database structure for the ATV toolkit is similar to other industry-specific modules such as Adams/Car, and Adams/Driveline.

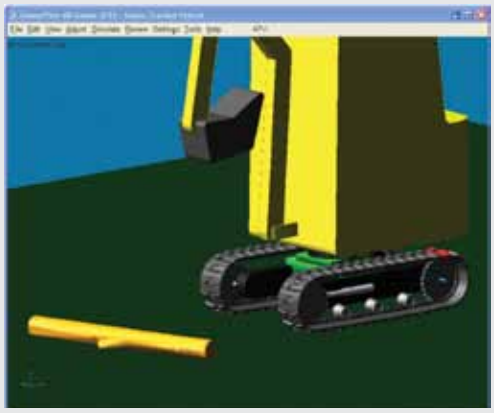
Pre-defined components including hull, spring-damper, track wheel, tensioner and track simplify the process of building complete tracked vehicle models. ATV is delivered with two complete sets of database files, one for a military tank and one for a construction equipment crawler.

All standard Adams functionality is available to the user, which means that flexible bodies,controllers, and hydraulic systems can be added to the model in order to create a complete vehicle.

Custom Interface Provides Immediate Value to Users:

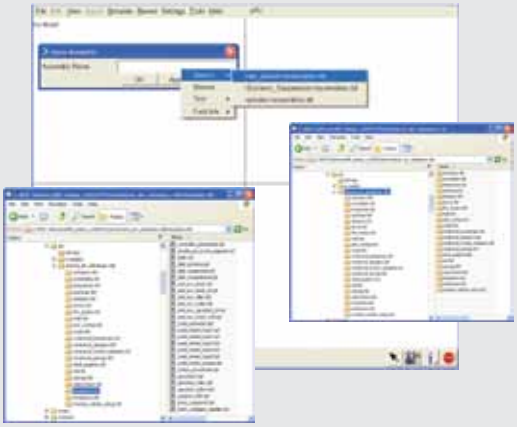
Import, build & modify tracked vehicle models

Models can be imported or built and modified in the software with ease and speed



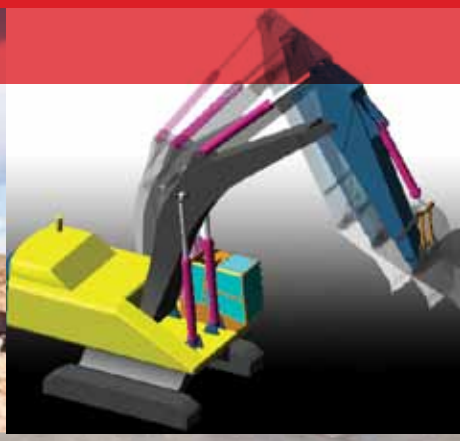
Select from a database of models in Adams

Rich databases include a variety of model options for construction and military equipment



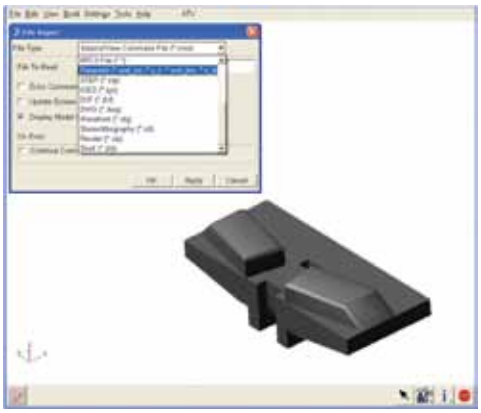
"Adams ATV provides detailed track modeling and analysis that gives us additional means to master the complex dynamic behaviour of tracked vehicles"

Louis Zeferino, Giat Industries



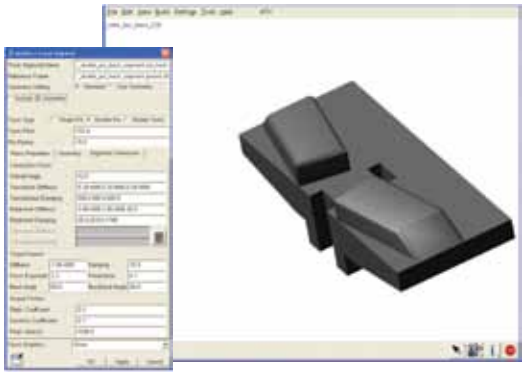
Import contact geometries from CAD

Gain efficiency with CAD interoperability ensuring integration between design and analysis



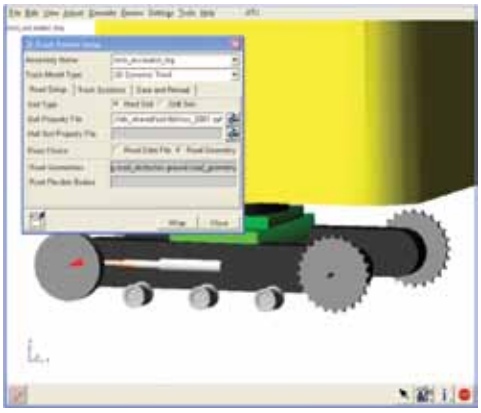
Create forced-based connections between track segments

Quick creation of connections between track segments improves accuracy



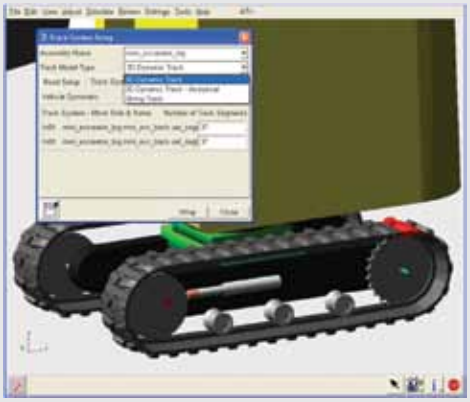
Automatically wrap track segments around the wheels

Built-in routine that automatically wraps the track segments around wheels



Build realistic, fully 3D track models

Custom interface makes it easy to build realistic, fully 3-dimensional models of tracks



Create Rigid or Flexible 3D Roads

3D road input using Adams/Tire file format makes it simple for users to create road models

Create soft soil interactions

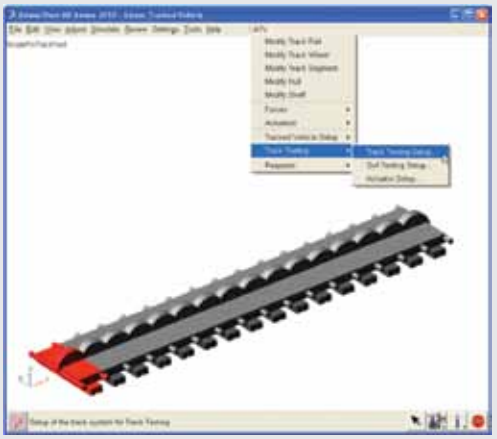
Soft soil interactions maintain the history based on Bekker theory (memory models)

Define Steering and Velocity Controllers

Flexible bodies, controllers, hydraulic systems can be added to model to create a complete vehicle

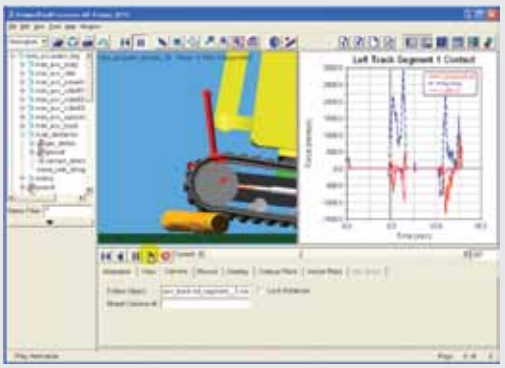
Perform subsystem tests on tracks and suspensions

Create, modify, and simulate realistic 3D models in Adams for quick virtual test evaluations



Animate and plot tracked vehicle specific results

Powerful visualization tools help users quickly assess performance of systems



Features & Value

What are its features?

All standard Adams functionality to create complete vehicle systems. This functionality includes:

- Flexible bodies
- Controllers
- Hydraulic systems

Two sets of database files for:

- Military tank
- Construction equipment crawler

Templates of all common suspension systems

- Pre-defined components including:
  - Hull
  - Spring-damper
  - Track wheel
  - Tensioner and track

What is its value?

- Simplifies the process of building complete tracked vehicle models
- Fast and Easy to build and change models
- Repeatable testing on soft soil accurately predicts behaviors
- Reduce physical prototype costs by running complete virtual tests in ATK

Pre-requisites:

MSC Adams or MD Adams

Co-requisites:

MD Adams Car

Platforms:

Windows 32-bit or 64-bit

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