

## 3DVIA Virtools Physics Library

### Add Realistic Physics To Your Virtools Interactive 3D Applications

Based on Havok technology, the Physics Library for 3DVIA Virtools 5 is an add-on library for developers who want to inject lifelike physics into their applications. Consisting of 29 new building blocks, the Physics Library provides access to features like gravity, mass, friction, elasticity, physical constraints between objects, and advanced physics models like buoyancy, force fields and car behaviors. These features speed up development, replacing tedious animation work and algorithm implementation by artists and programmers while remaining compatible with existing 3DVIA Virtools 5 non-physics behaviors.

Use the power of Havok's technology to apply the laws of physics to your 3D objects.

The Physics Library not only offers lifelike physics interactions, but also provides superior collision management, surpassing (for ease of use) the standard Virtools collision detection behaviors. With physics constraints like springs, hinges, point-to-plane and ball joints, developers can create articulated bodies that come to life with animations guided by the physics simulation.

#### General Features:

- Powered by Havok ([www.havok.com](http://www.havok.com))
- Collision system
- Constraint system
- Physics interactions
- On the fly physics management and modifications

#### Collision Systems:

- Convex and concave geometry for fixed and moving objects (Rigid Bodies)
- Friction and bouncing material properties
- Collision groups and events, with detection and collision information

#### Constraint System:

- Standard mechanical constraints
- Fully-customizable constraints
- Dynamic constraint creation and deletion
- Springs

#### Physics Interactions:

- Gravity
- Impulses and Torques
- Motion Controller
- Beamer
- Force Field volumes
- Motors

#### Advanced Features:

- Advanced car controller system (Balls and Raycast models for wheels)
- Buoyancy and wind volumes
- Penetration detection volumes



### Technical Requirements

#### Hardware

- Pentium IV or equivalent
- 1Gigabyte (GB) of RAM
- DVD ROM drive
- Monitor capable of displaying 1024 by 768 in 16 bit color (65536 color/Hi-color)
- Pointing device (mouse, trackball...)
- Direct3D or OpenGL compatible 3D graphic card with 128 MB of RAM
- DirectSound compatible sound card (not a requirement but recommended)
- You should ensure you have the latest official drivers for your graphics card

#### Software

- Microsoft Windows (2000, XP, Vista)
- Microsoft DirectX 9.0C for DirectX compatible 3D graphic accelerator cards
- For OpenGL, an OpenGL 2.0 compatible graphics card and driver
- Microsoft Internet Explorer 6.0 (for the Online Reference)

