

# 3DVIA Virtools 5

## The Fastest Way to Develop Games

3DVIA Virtools 5 is the core video game development platform that allows studios and publishers to prototype and develop innovating games on PC, Mac™, Wii® and Xbox 360™. 3DVIA Virtools is based on an unparalleled behavioral approach, letting you attribute logical behaviors to objects, characters and environments. 3DVIA Virtools 5 provides an innovative production process that fits into your existing workflow and enables you to produce quality games fast while reducing time to market.

3DVIA Virtools 5 includes 5 key components: the Graphical User Interface to develop sophisticated applications by visually assembling objects and behaviors, the Behavior Engine to run interactive applications, the Virtools Scripting Language to create low level specific functions without any C++ line and the SDK to create custom behaviors, the Render Engine to render graphics in real-time.

### The Graphical User Interface

The 3DVIA Virtools 5 graphical user interface is used throughout every stage of development. It includes:

- A 3D Layout to display content in a real-time environment
  - Graphical tools for navigating, creating, editing, selecting and manipulating 3D objects, lights, cameras and curves
  - Creating and editing lights, cameras, materials, textures, grids and paths
  - Translation, rotation, scaling of 3D entities and navigation within the virtual environment
  - Drag-and-drop behaviors onto 2D and 3D objects
  - Creation of new reusable behaviors by graphically combining existing ones
- A Schematic View to graphically assemble and fine-tune behavior building blocks for creation of interactive content
- A Script Debugger to fine-tune the application
- Entity Setup Tools to edit the parameters of any object that has associated behaviors
  - An Attribute Manager for quick visualization and modification of attribute values for multiple objects
  - An Action Manager to create scripts for frequently used functions which performs a predefined task on a selection or parameter and access them in just a few keystrokes
- A Hierarchy Manager to display a tree view of all the objects present in any level
  - A Parameters Debugger to inspect and edit data values
  - A Path Manager to define paths to data sources (image, audio or other data files)
  - A Profiler to probe how much computing time is devoted to particular tasks
  - A Shader Editor to create programmable vertex and pixel Shaders in DX9.0c (HLSL) and OpenGL 2.0 (CgFX)

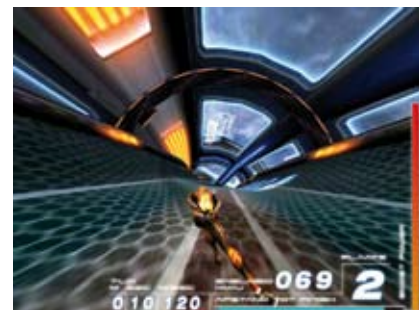


Little Chicken © Gillette Fusion Speed Skating Challenge

### The Behavior engine

The behavior engine runs both custom and out-of-the-box behaviors. 3DVIA Virtools 5 includes standard behaviors from the following categories: Cameras, Characters, Collisions, Controllers, Grids, Interface, Lights, Logics, Materials-Textures, Mesh modifications, Narratives, Optimizations, Particles, Sounds, Shaders, Visuals, Web, World Environments, and more.

The Virtools Behavior Library can be extended with custom behaviors developed with the SDK, with the Behavior Library or with third-party behaviors created by the Virtools user community.



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### The Virtools Scripting Language

The Virtools Scripting Language is a powerful scripting language that complements the Virtools 5 Schematic editor and the Virtools SDK with an intelligent coloring system, context-sensitive completion and function arguments display. VSL scripts can be processed at run-time or in Author mode.

VSL offers full debugging mode with breakpoint support, watchable variables with value editing, and step by step debugging (also step into/out support).

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### The Render engine

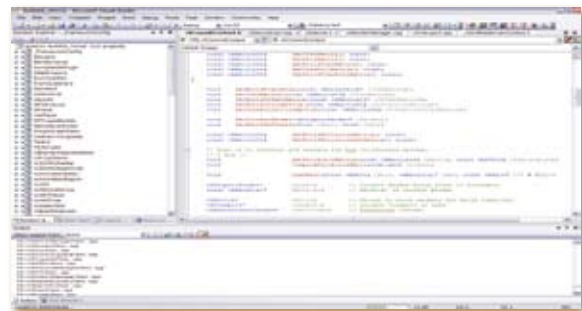
The render engine provides high-quality, real-time rendering of 3D images and animations in real time. It includes the following features:

- Support for key industry standards: from DirectX5 to DirectX 9.0, OpenGL 2.0 support
- Supports programmable Vertex and Pixel Shaders 3.0 (DX9 with HLSL, CgFX and OpenGL 2.0)
- Support for 3D modeling objects and animation from 3ds max, Maya and Lightwave
- Optional access to render engine source code
- Compressed textures (DX7, OpenGL)
- Dynamic creation and copying of objects and scripts
- Hierarchical keyframe animation system with motion blending (mix of several animations) and warping (transitions)
- Support for Linear, Bezier and TCB animations
- Morph animations (with blending and warping)
- Skin & Bones System
- Bicubic Patch Meshes (uniform tessellation)
- Progressive Meshes
- Spline Curves
- Per Vertex Color
- Procedural textures and movie textures
- Multi Texturing
- Rendering to a texture
- Cube Environment Mapping
- Bump Mapping
- Dot Prod3 Mapping
- Billboard or axis constrained 3D Sprites
- Pentium III and IV optimizations
- Dynamic RGB lighting
- Sprites with hierarchical system
- Hierarchical culling
- Pixel/Vertex Fog
- Mipmapping
- Transparency
- Texture Filtering
- Perspective correction texture mapping
- Portal culling
- Particle systems
- Reflections
- Environment Mapping
- Collision Detection
- Simple Shadows, Shadow casting
- Motion blur
- Lens Flares
- Multi object morphing
- Versatile Level of Detail
- 360° environment map
- Animation Recorder
- Filter Texture
- Engine Tweaking
- LightMap
- Volumetric Fog
- ShadowStencil
- Time Settings

### The Software Development Kit (SDK)

The Virtools SDK is a suite of development tools (libraries, DLLs, header files) that provide access to all the low-level functionality used by Virtools software. Developers can write the following application components:

- Custom application executables using the Virtools engines as underlying technology
- Extensions to the Virtools engines, such as Behaviors, Media Importer, Manager, Render Engines Plugins, Rasterizers and Extension Plugins (specific Parameter Types)



### Open Architecture

3DVIA Virtools offers an open and flexible architecture that is compatible with the following standard technology format:

- 3D files: 3ds Max®, Maya®, XSI®, Lightwave®, Collada®, 3D XML
- Images: JPG, PNG, TIFF, TGA, BMP, PCX.
- Sounds: MP3, WMA, WAV, MIDI.
- Video: AVI, Active Movie supported formats.

### 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:

- Windows XP SP2 +DirectX 9.0 capable accelerated graphic card with at least 256 Mb RAM.
- DirectX 9.0c Runtime, with latest available video card drivers.