

DATA SHEET SYSTEM REQUIREMENTS

Software (minimum)

MotionBuilder 6 requires one of the following operating systems:

- Microsoft® Windows® XP Professional
- Apple® Mac OS® X (version 10.3 or higher)

MotionBuilder 6 requires one of the following browsers:

- Microsoft Internet Explorer
- Netscape®
- Safari™

Hardware (minimum)

- Intel® Pentium® III or higher, AMD Athlon™, Macintosh® G4 or G5 processor
- 256 MB RAM
- CD-ROM Drive
- OpenGL® graphics card with 16 MB RAM
- 300 MB of hard disk space

Alias MotionBuilder natively supports FBX®, an award-winning, platform-independent, 3D authoring and interchange format that allows MotionBuilder artists to quickly and easily acquire and exchange 3D assets and media from a wide variety of sources.

FBX is widely supported by the industry's leading software and hardware manufacturers, including A&G Soluzioni Digitali, Alias, Apple, Ascension Technology, Avid, Darwin, Di-O-Matic, Discreet, Luxology, Maxon, Motek, Natural Motion, NewTek, Okino, Softimage, Strata, TurboSquid, Virsys and Wings3D.

The FBX for Quicktime component is available to view FBX files directly into the Quicktime player allowing content to be viewed and, interacted with, in a portable and widely available medium.

Unmatched character performance and animation technology!



Alias MotionBuilder – already established as the pre-eminent software for character animation in game, film and broadcast production – further extends its lead with MotionBuilder 6. This latest release boasts numerous, new capabilities in areas such as keyframing, character rigging and precision animation. Version 6 also delivers features for optimizing media-rich animation pipelines: features that give you seamless integration with the 3D package of your choice. Because these features are tightly integrated with the core technologies of MotionBuilder – including an advanced real-time architecture, unique **Story Timeline** performance environment, intelligent character controls and the award-winning FBX file exchange format – you can spend less time thinking about software and more time exercising your creative skills.

MotionBuilder: Art in Real-time

Alias MotionBuilder is unlike any 3D animation authoring experience you have ever had. From the ground up, the software is built on an innovative, real-time architecture that enables you to work unhindered by the need to constantly render and evaluate your work in low-resolution previews. Animation, audio and video tracks always playback in real-time and are never out of synch; plus you can enjoy real-time IK, deformations, volumetric lights, reflections, transparency and particles.



Two Options: Alias MotionBuilder Standard and Alias MotionBuilder Pro

Alias MotionBuilder Standard is an award-winning character performance and animation software designed for the 3D animation enthusiast. Based on a unique, real-time architecture; intelligent character animation technology; and a revolutionary Story Timeline production environment, MotionBuilder Standard allows artists to quickly generate high-quality character performances and animation.

Alias MotionBuilder Pro has long been established as the pre-eminent character performance and animation package for professional game, film, and broadcast production. The software provides animators and animation directors with all of the functionality found in MotionBuilder Standard as well as advanced capabilities such as motion capture data mapping and editing, and optical data clean-up. Additional tools include support for asset management integration (Alienbrain and Microsoft VSS); Python scripting capabilities for automating tasks; support for nVIDIA® CgFX shaders and the Open Reality® SDK, which enables programmers to create custom plug-ins.

Both versions of MotionBuilder are available for Windows and Mac® operating systems and natively support FBX: a platform-independent, 3D authoring and interchange format that enables MotionBuilder to work seamlessly with other 3D software packages.

Technical Features

Intelligent Animation

Alias MotionBuilder applies its industry-leading technology to traditional 3D animation and character animation tools so that you can quickly generate unsurpassed animation.

■ **New! Expanded KeyFraming controls**

The world-class MotionBuilder keyframing toolset has been expanded to include more time-saving, productivity-enhancing features such as: AutoKey, MoveKeys, Key at TimeX and Smart Plot. Plus, a new motion Dynamic Editor enables you to achieve high-level, simultaneous dynamic animation editing for multiple objects.

■ **New! Enhanced Dopesheet**

The editable dopesheet now gives you improved feedback as to which specific object keyframes are affected in a complex hierarchy (such as a character) through new *key summary* and *hierarchy* folders as well as through new *Body Parts* and *Keying Groups* tracks.

■ **F-curve Editor**

A powerful F-curve editor includes weighted tangent controls and adjustable curve colors.

■ **Layering**

MotionBuilder supports multiple animation layers including keyframing layers and keyframing over motion data.

■ **Curve Filters**

Take advantage of the software's many animation curve filter options including: smoothing/noise reduction, key reducing, peak removal, gimbal killer, re-interpolate, unroll rotations and more.

■ **New! Multi-Referential Animation**

This new way of animating enables you to easily change the Transform (TRS) animation referential of any object or object group so that the animation can quickly be adapted when a referential change is made. *Example: a character that has been animated in relation to a car can quickly be animated in relation to an elevator that it enters.*

■ **New! 3D Paths**

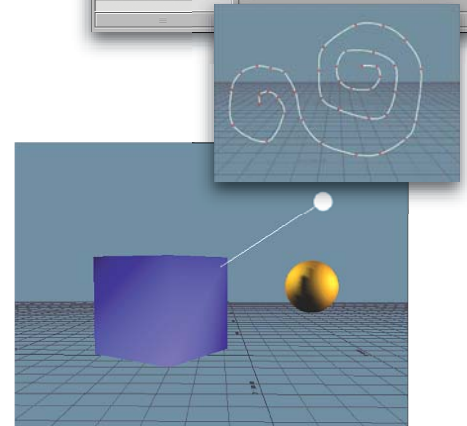
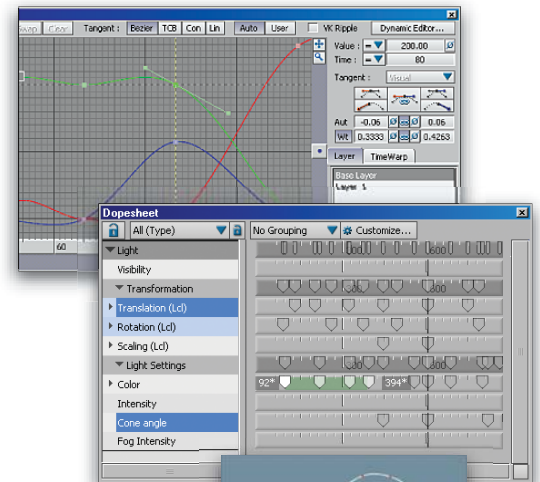
Convert a 3D spline into a 3D path through the addition of a *Path* constraint. Objects can then be attached to this newly created path, and animated over time. This feature facilitates the animation of cameras and other objects.

■ **Other Animation Tools**

MotionBuilder delivers industry-standard animation tools such as constraints, expressions, graphical rotation limits and a graphical relations editor.

■ **Interaction Authoring (Alias MotionBuilder Pro)**

MotionBuilder Pro gives you the ability to generate animation trigger networks – for the creation of immersive, sophisticated interactive 3D content. Additionally, a notes feature lets you attach text information to timed events.



Images Courtesy of Alias

Unsurpassed Character Setup

The unparalleled MotionBuilder character solving engine, along with its advanced character rigging and setup tools, allow you to quickly achieve natural, predictable animation results.

■ Automated Rigs

Choose from any of the MotionBuilder fully automated rigs, including a full body, integrated bio-mechanical IK/FK dual rig; “smart” biped and quadruped characters with up to ten neck bones and phalanges; and characterization templates that automate character setup.

■ New! “Rig Re-connect” for Customizable Rigs

Custom, re-usable rigs are now easier to create with the MotionBuilder rig re-connect feature. This new tool allows you to save a rig with all its added functionalities – slider setups, pivots, rotation limits, etc. – and then load that rig into a different scene in order to re-connect it to another character.

■ New! Expanded Pose Editor

Create precision poses in less time with the MotionBuilder 6 new pose editing features, including *Mirroring* around a user-defined plane and the ability to create pivot-based poses.

■ Character contact technology

The Alias MotionBuilder unsurpassed contact technology for feet, toes, hands, and fingers enables you to significantly speed up the creation of character/floor contact (e.g. walking) or animation in relation to other objects (e.g. character leaning on a table).

■ Skinning

Even the most difficult joints (like shoulders) bend and flex naturally with the MotionBuilder precision skinning tools.

■ Filters

Take advantage of filters for noise reduction, motion reduction and foot stability to clean up data obtained from external sources.

■ New! Degrees of Freedom and Rotation Orders

Set user defined “Degrees of Freedom” (limits) for the transformation properties (TRS) of any 3D object to create precise, believable character poses in much less time and with less effort.

Plus, you can now define the rotation order of any 3D objects (XYZ, XZY, YZX, etc.). Not only does this help to remove gimbal lock problems, it improves cross-product information interchange.

New! Pivots Support

■ Transformation Pivots

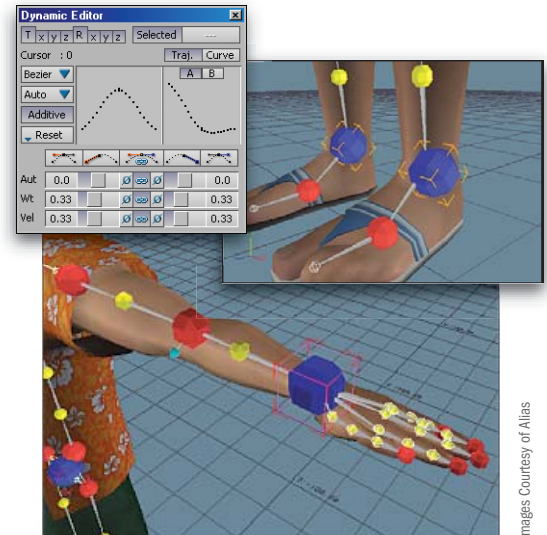
Transformation pivots can be positioned independently of the object’s geometry center. This new ability allows you to achieve more refined character animation; plus, it streamlines the animation workflow by maintaining the nuances of your work when it is transferred back to your main 3D application (where supported, e.g. Maya®).

■ Auxiliary Pivots for the Character

Auxiliary pivots enable you to quickly define and animate multiple rotation pivot points for IK Control rig effectors. This is particularly useful for manipulating the feet or hands of a character using more than one rotational point. *Example: by creating multiple Auxiliary pivots for an IK effector in a character’s foot, the feet can rotate around the toes, the ball of the foot or the heel, thereby creating a very natural-looking walk.*

■ Other biomechanical solving controls

Increase animation realism and reduce production time through the MotionBuilder solving controls for: IK/FK seamless transition, effectors pull, body-parts stiffness, roll-bones, realistic shoulder, and degrees of freedom (for game engines).



Images Courtesy of Alias

Facial Animation

Rapidly generate realistic facial movement – including lip-synching, one of the most difficult aspects of facial animation – with the world's most precise, realtime, language-independent phoneme extraction technology.

Input and Animation Tools

This technology allows you to lip-sync to dialogue using recorded audio tracks, live microphone input, incoming motion capture data or traditional keyframing. Precision facial animation tools include bounding regions, vowel weighting, constraints and custom expression shapes.

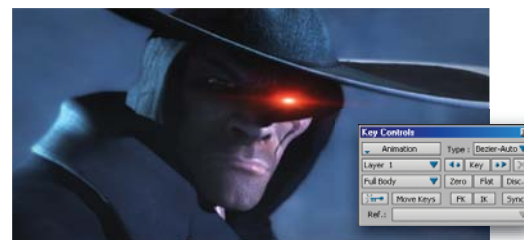


Image Courtesy of Sammy Studios

New! Facial Workflow

The facial animation workflow has been redesigned to be more consistent with the overall MotionBuilder workflow: animation channels are now on the character's face instead of the face of the actor.

Character Performance: Story Timeline

The fully integrated, non-linear Story Timeline production environment, unique to MotionBuilder, lets you quickly direct and create unsurpassed character performances and scene previews/pre-visualizations.

New! General Workflow Tools

As of MotionBuilder 6, the *Story Timeline* gives you more real-world production options through support for all scene properties/object types, real-time camera/audio cross-fades; multiple audio tracks and volume animation; as well as multiple video tracks.

Track Types and Editing

The *Story Timeline* provides tracks for any media and animation situation and includes *independent shot*, *standard animation*, *character*, *camera*, *digital video*, *digital audio*, *constraint* and *command tracks*. All tracks support fade, trim, loop, razor, cut, copy and paste, mute, solo and snap-to-time-cursor editing functionality.

Shot Tracks

Shot tracks for storyboards, animatics and final edits can be built from any tracks-based project and can include time discontinuities and repeats.

New! Animation and Camera Track Features

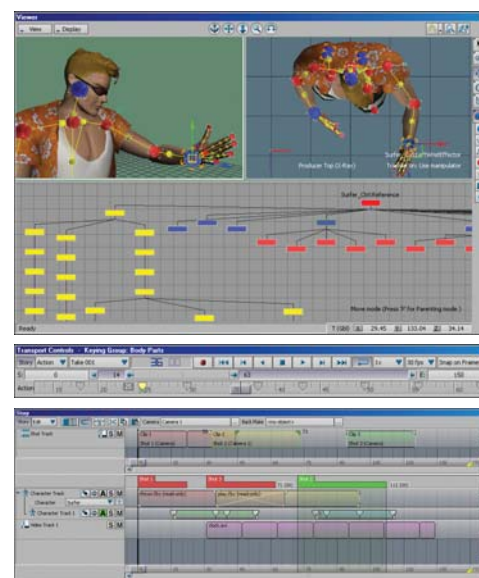
Standard animation, *character* and *camera* tracks now support multiple clip scaling and enhanced 3D animation clip matching with previous or subsequent clips.

Other features include: multi-track animation, track layer modes, variable track weighting, key support, editable clip curves, clip trajectories and temporary pivots manipulation, user-definable blending pivots, multiple blending algorithms and interpolation types, variable clip referential and multiple 3D objects or character ghosts per track.

Character Track

The *Story Timeline* character tracks are fully integrated with the MotionBuilder character animation technology. They offer all of the functionality of the *animation* and *camera* tracks as well as support for character retargeting within tracks* – enabling you to create natural character motion even when using source characters of varying sizes and construction types.

**other supported features include: character control rig IK/FK keyframing within sub-tracks (similar to animation layers); affected body-parts selection and effector temporary anchoring*



Images Courtesy of Alias

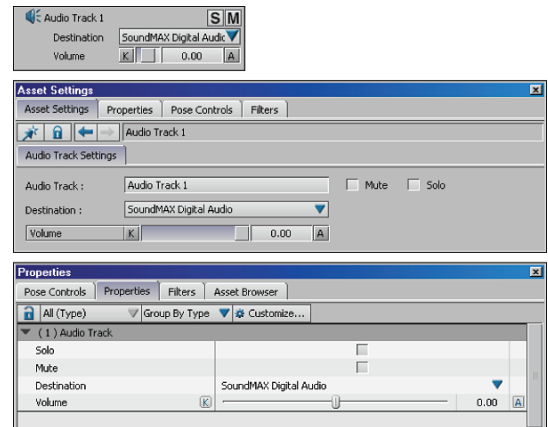
Character Performance: Story Timeline *continued*

■ **Command and Constraint Track**

In addition to the general editing functionality available for all tracks, command tracks include *show-hide models* clips and *application launch* clips functionality. Constraint tracks provide constraint clips *blending* and *weighting* options, in addition to the general tracks editing features.

■ **New! Audio Editing Features**

Record audio and enjoy frame-accurate playback during both jog and shuttle. MotionBuilder supports MP3, AAC, WAV and AIFF files and allows you to select the sampling rate for your audio output.



Images Courtesy of Alias

■ **New! Video Editing Features**

The Story Timeline now also facilitates your real-time production pre-visualizing by allowing you to import and apply proxy video texture maps. The newly expanded range of video formats supported includes: QuickTime, AVI, MPEG, MOV, MP2, MP4. Supported image formats include: TIFF, TGA, PIC, BMP, JPG, DDS, IFF, RGB RGBA, SGI and YUV.

■ **Real-Time Input (Alias MotionBuilder Standard)**

Alias MotionBuilder supports real-time input from a keyboard, mouse or joystick.

■ **Real-Time Input (Alias MotionBuilder Pro)**

Beyond the input devices supported in MotionBuilder Standard, Alias MotionBuilder Pro provides support for SpaceBall and Wacom® tablets, JLCoooper MCS-3800, MIDI devices and Lantronix serial ports. A user selectable recording/playback mode and variable sampling rates facilitate your media input.

Cameras and Lights

■ **New! User-defined templates**

Save your current light and/or camera setup as a default template so you can save time setting up future scenes.

■ **Cameras (Alias MotionBuilder Standard)**

MotionBuilder supports multiple cameras with field of view and aperture controls, video back plates, *Look At Camera* interest constraints and real-time motion blur*.

**other features include optional up-vector objects, to constrain camera roll, and a camera switcher that facilitates cutting between cameras*

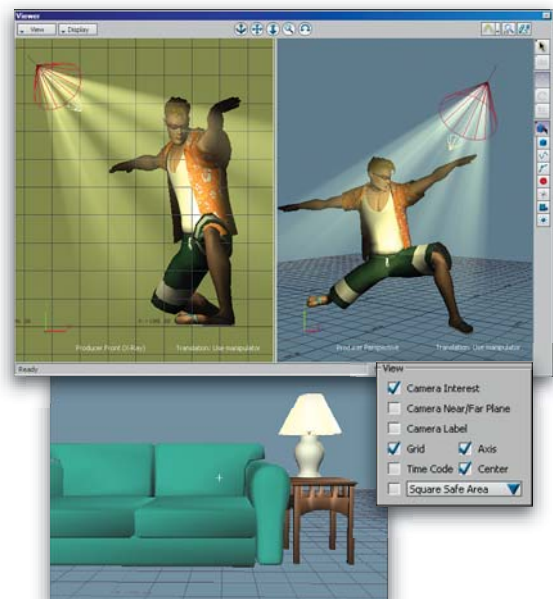
■ **Cameras (Alias MotionBuilder Pro)**

MotionBuilder Pro takes camera support to the next level with a full-screen viewer and *Lock 3D Camera* and *Pan/Zoom in 2D* options.

■ **Lights**

MotionBuilder offers support for all standard lighting types*. Advanced lighting techniques include real-time volumetric lights, as well as real-time planar, projective and self-intersecting shadows. Spotlights also allow for custom gobos and can be used in conjunction with a *Look At* interest constraint and up-vector objects.

**includes point, infinite and spotlights with ambient, diffuse and specular illumination*



Images Courtesy of Alias

Materials and Shaders

■ **New! Particle Shading**

Display particle shaders accurately behind transparent models with the MotionBuilder new, *real-time particle shading with Z-ordering functionality*.

■ **Materials and Shading**

MotionBuilder comes with a complete material editor that supports RGB, YUV and HSV color models. It offers full control over textures – including translate, rotate, scale and swap UV – and supports multiple textures per object and per polygon. Mapping capabilities include texture and environment mapping, real-time bump mapping and real-time reflection mapping.

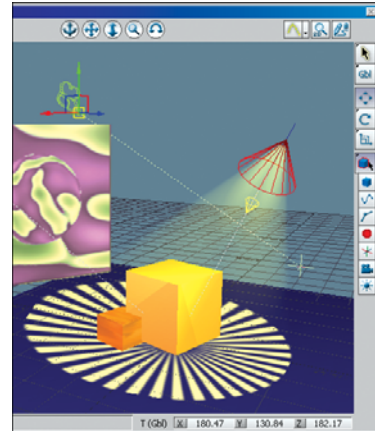
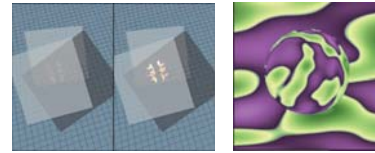
■ **Pre-defined Shaders**

Quickly achieve your desired look with MotionBuilder's shader pre-sets*. A static shadow map / light map shader is available to game developers looking to create textures with superior in-game performance. MotionBuilder supports multiple shaders per object.

**including real-time edge cartoon /multi-level cartoon, real-time reflections, selective object lighting, and a real-time 3D matte shader*

■ **Import and Customize CgFX Shaders (MotionBuilder Pro)**

Support for Nvidia CgFX shader import, use and customization means game developers can quickly recreate game engine per pixel/per vertex shader effects in MotionBuilder Pro.



Images Courtesy of Alias

Assets and Asset Management

■ **New! Metadata in Files**

Artists and programmers can now store data in a scene for use by downstream applications.

■ **3D Assets**

For those times when you need to simplify the creative process, MotionBuilder lets you choose art assets and animation from its extensive clip art library of sophisticated characters, environments, textures, motions and more.

■ **Asset Management (Alias MotionBuilder Standard)**

Because Alias MotionBuilder was architected with FBX as its native file format, it's easy to transfer your art assets – objects, deformations, shapes, textures, cameras and lights – as well as your characterized / skeletal animation into, or from, your 3D package of choice.

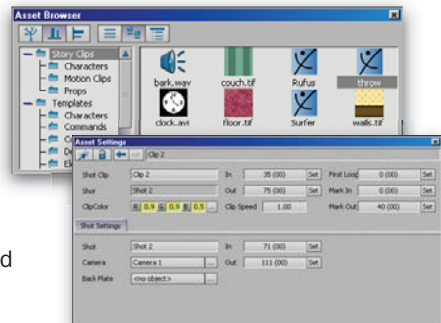
■ **Asset Management (Alias MotionBuilder Pro)**

MotionBuilder Pro allows you to import and export many additional industry standard files* and provides direct support for asset management systems such as Alienbrain and Microsoft VSS (Windows only).

**Biovision (.BVH), Acclaim (.ASF/.AMC) and Motion Analysis (.HTR) skeletal data formats and Motion Analysis (.TRC) or Vicon (.C3D) motion capture data formats. Direct support offered for "multiple takes" FBX files.*

■ **Asset Delivery**

Beyond exporting your animation into another software package for rendering, you can also render your files directly in MotionBuilder. The software supports video field rendering with advanced anti-aliasing technology, depth of field and motion blur and gives you independent alpha channel output. Choose from NTSC, PAL, film or custom resolutions. Once rendered, your animations can be output into a wide variety of formats including QuickTime®, Macromedia Flash®, AVI and TIFF sequences.



Images Courtesy of Alias

Workflow and User Interface

MotionBuilder 6 contains numerous enhancements to the user interface and workflow that both streamline the animation process and enable you to quickly move between MotionBuilder and other 3D packages.

■ **New! General UI**

MotionBuilder gives you a comprehensive, customizable user interface including scene browser, properties panel, dopesheet and F-curve views. New as of MotionBuilder 6, motion trajectories of objects can be shown, a 3D paths option displays trajectories for any object and the time cursor can be used to scrub audio.

■ **New! Navigational Toolbars**

Crucial, repetitive camera navigation tasks are clearer and more intuitive in MotionBuilder 6 thanks to the addition of a new *Camera View* toolbar; plus, there are new buttons on the Viewer toolbar that let you quickly access Transformation manipulators, as well as new features for picking toggles for every different type of 3D object.

■ **New! Improved Shortcuts System**

In MotionBuilder 6 the keyboard shortcut system has been enhanced and expanded to more accurately replicate the behavior of other 3D software packages. Enhancements include support for direct picking of a 3D object; support for mapping exclusive pick, add pick, remove pick, drag and pick; the ability to map transformation modes and more.



Image © NeilSmartz®

■ **New! Viewer Window**

A number of important enhancements have been made to the Viewer including the addition of Motion Trajectories, Transformation Planes, and Handles: a new feature that lets you quickly establish links between otherwise unrelated objects. After the link is established you can create *Follow* objects – a parent-child relationship that can be used as an instant transformation pivot so that all the linked objects can be correctly transformed simply by manipulating the handle.

■ **New! Properties Viewer and Custom Properties**

A more compact Property Viewer increases scene viewer space. Additionally, a series of new custom *Properties* – including *Action* and *List Custom Property* options – help you to better manage the properties of objects when creating custom setups.

■ **New! Groups and Sets**

Create user-defined groups that contain any item in your scene browser*. The new MotionBuilder grouping and Sets capabilities help you associate all the elements of a given character or object, making it is easier to manage scenes.

**including 3D objects, lights, materials, shaders, models, textures, constraints and other groups*

■ **New! Sets (Alias MotionBuilder Pro)**

In Alias MotionBuilder Pro 6, Sets can be used to stream animation from attached FBX files on disk, thereby improving performance when editing scenes with large numbers of characters.



Image Courtesy of GlyphX Games

Motion Capture Data Editing (Alias MotionBuilder Pro)

Alias MotionBuilder Pro delivers the industry's favorite motion capture data editing* technology. Powerful, built-in optical cleanup tools yield quick gap fixes, swapping and erroneous occluded marker estimations. A batch tool makes the processing and re-processing of multiple files quick and easy. Plus, the software reads and writes motion and skeletal data in popular file formats and functions as a network client to receive motion data directly from the Alias MoCap™ servers.

**editing features include blending, interpolating, peak removal, smoothing, curve fitting and more*

Scripting (Alias MotionBuilder Pro)

Powerful scripting capabilities – based on the Python programming/scripting language – help you automate repetitive tasks and expand the functionality of MotionBuilder.

Open Reality SDK (Alias MotionBuilder Pro)

MotionBuilder Pro comes with a software development kit that enables programmers to create custom plug-ins.

■ **New! Abstract Layer**

A new abstract layer has been added to the Open Reality SDK – one that gives programmers access to every object and property created within MotionBuilder.

■ **New! Callbacks**

An Improved callback system in MotionBuilder 6 allows programmers to integrate the software seamlessly into their existing production pipeline. Specific enhancements include callback support for object construction and File Open/Save transactions.

■ **New! SDK enhancements**

The Open Reality SDK now gives programmers access to relations constraints as well as the new 3D Paths feature.

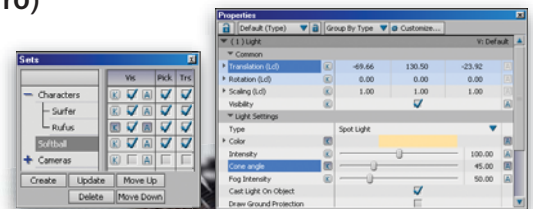


Image Courtesy of Microïds

For more information on Alias MotionBuilder 6 or other Alias software products, contact your local Alias sales office or visit www.alias.com

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