

Autodesk®

AliasSTUDIO™ 2008

Unite creativity and
craftsmanship.



Autodesk®

Transport your design to new levels.

Magna Steyr Design



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Design Drives Success

Design, more than any other factor, has the power to determine the success of transportation and consumer products. In today's competitive global marketplace, designers are under pressure to come up with new, innovative designs that address both form and function—and to do so quickly. The Autodesk® AliasStudio™ product line is the best design software to address the unique creative requirements of the entire industrial design workflow, combining creativity with craftsmanship. It optimizes the design process with industry-leading sketching, modeling, and visualization tools that quickly bring ideas to reality in a single environment and in less time.

Capture and Communicate Design Intent

Communication is a key component of design. AliasStudio provides a complete set of tools for concept design and communication, reducing the time required to create high-quality imagery for clear, efficient, and persuasive visual communication. AliasStudio helps designers tell their story—clearly and effectively—to sell ideas and avoid holding up projects waiting for design review decisions.

Own the Design

AliasStudio enables designers to own their designs further in the development process with tools to efficiently refine model details and create production-quality data for downstream use. Designers retain ownership of designs and incorporate changes later in the process, increasing the flexibility of design decisions and preventing design intent from being altered or lost during the engineering phase. AliasStudio also supports collaboration between design and engineering to help ensure that both aesthetic and functional requirements are efficiently addressed in design solutions.

Specialized Design Tools

AliasStudio provides the tools that work the way you do, with functionality that meets specific design requirements for

- Concept exploration
- Design modeling
- Visualization and communication
- Precision surface modeling
- Reverse engineering
- Productivity
- Process integration



Backpack for Funsports by novakonzept

Concept Exploration

Concept exploration involves the application of problem solving and experimentation in pursuit of innovative and improved solutions to the challenges of the design brief.

The concept development phase demands close collaboration between designers and engineers to produce concepts that are new, yet technically feasible.

ENHANCED Paint Tools

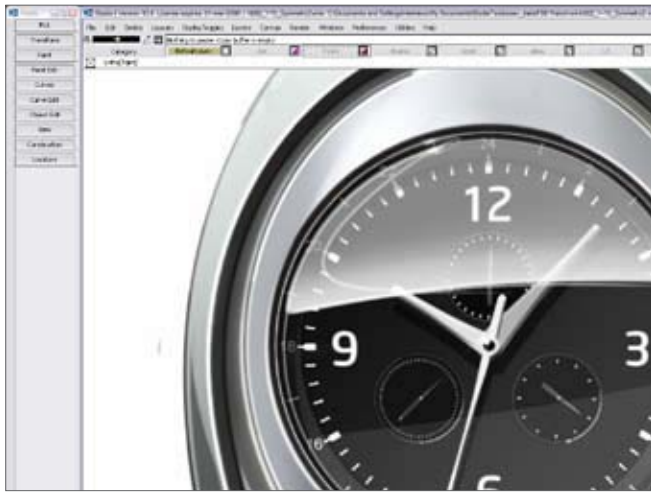
Take advantage of freehand skills to capture and communicate ideas without switching applications. Sketch on top of imported 3D computer-aided design (CAD) data to evaluate the feasibility of a design. AliasStudio provides a full set of tools for sketching, illustration, and image editing. This toolset includes familiar tools such as pencils, paintbrushes, airbrushes, markers, erasers, and special texture and effects brushes.



Concept Exploration

ENHANCED Paint User Interface

Move easily from other 2D tools to AliasStudio software. At startup, select a predefined setup to customize the user interface for doing 2D design work. This simplifies and refines AliasStudio for an efficient paint workflow. A new aspect of the interface enables users to instantly access common brush controls using a dynamic hot spot interface that appears directly under the cursor. Hot spots amalgamate common hot key functions, reducing the need to access the keyboard and helping designers stay focused.



Simplified Paint Interface

Symmetric Sketching

Reduce the time required to draw symmetrical objects, and provide instant feedback on a drawing's proportions. The symmetric drawing feature enables users to interactively duplicate symmetric brush strokes along a single line of symmetry or multiple lines of radial symmetry.



NEW Predictive Strokes

Quickly create clean, crisp drawings. Create perfectly straight lines, circles, and ellipses without a guide, and retain brush characteristics while painting.

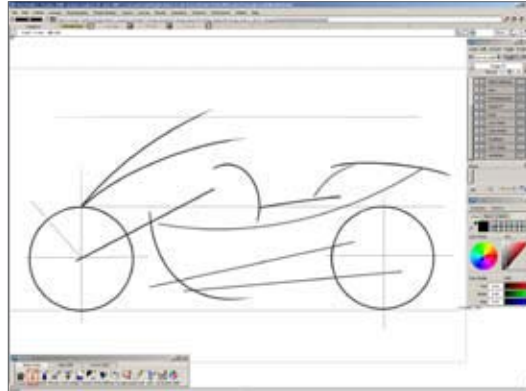
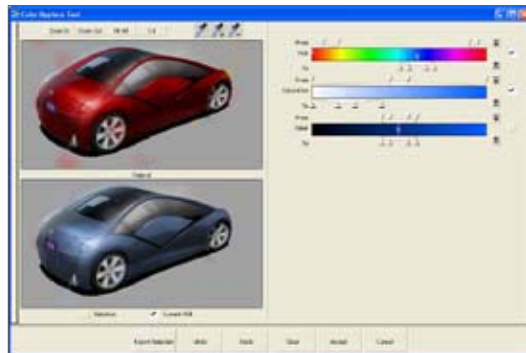


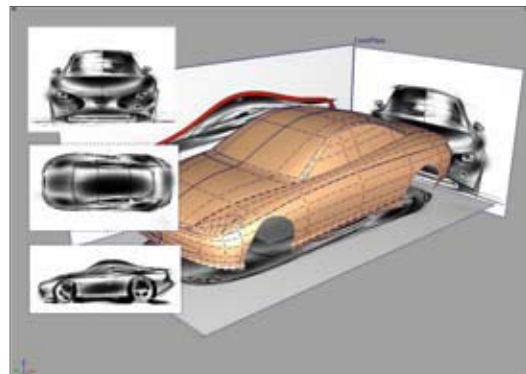
Image Editing

Create variations of designs using a full set of modification tools. The suite of color adjustment tools lets users tweak colors and quickly explore color alternatives. The deform and warp tools provide the control to alter the proportion or entire character of an image, allowing for subtle corrections or fast development of design variations.



Canvases in 3D Space

Reference 2D content directly in the AliasStudio 3D environment, making it faster to convert concept sketches into 3D models. Use this tool to import an image or create it in 3D and position it as you would a free-floating sheet.



Concept Exploration

Overlay Canvases

Create view-specific drawings or annotations on top of 3D data. Use these overlays to keep notes, capture design review feedback, or mark up changes to be made later.



ENHANCED Layer Management

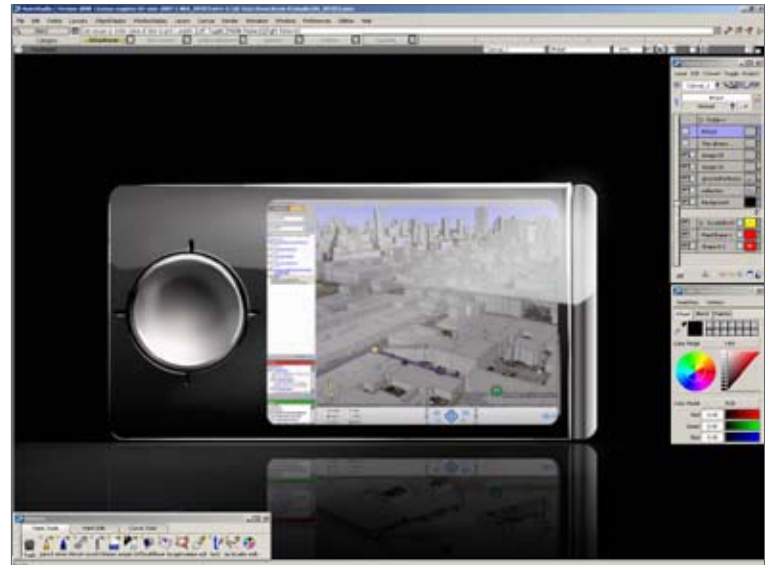
Easily build up sketch renders and variations with familiar and efficient layer tools. The new streamlined editor provides complete layer management features, such as Layer Blending, Invert, and Mask management.

Shapes

Create accurate line work using curves to create *Shapes* on a canvas. Shapes have history, enabling users to quickly modify illustrations. Use shapes to describe outline strokes, fill colors, fill gradients, and create accurate masks.

Sketch Project

Apply sketches directly to simple geometry, creating the illusion of complex detailing on a model that can be viewed at different angles for rapid concept evaluation and experimentation. Images are projected onto selected geometry to visually describe complex detailing on 3D surfaces or explore design variants, without spending time on modeling. This technique provides the flexibility to sketch what is hard to model, and model what is hard to sketch.



Text

Create easily readable annotations, and add text to designs using any system font available on your computer.

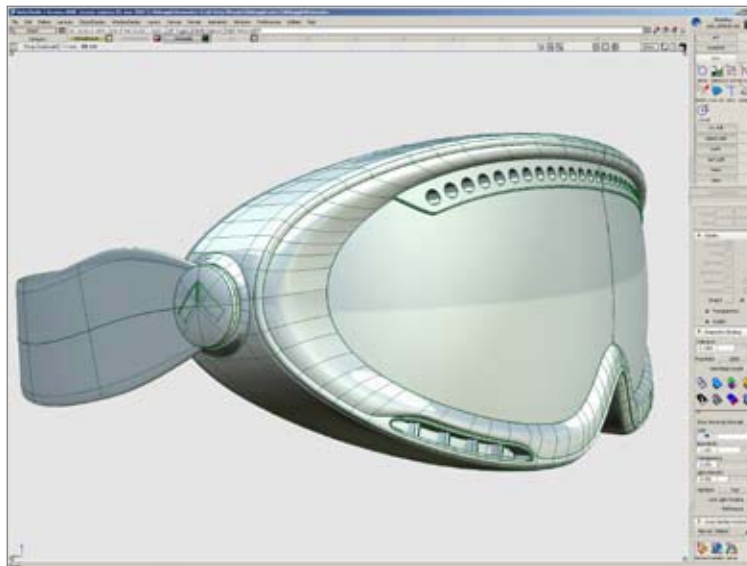
Design Modeling

Design concepts evolve from ideas to reality as they are developed through a creative, iterative process.

Three-dimensional models are refined to evaluate details of the design and converge on a solution that satisfies the project goals.

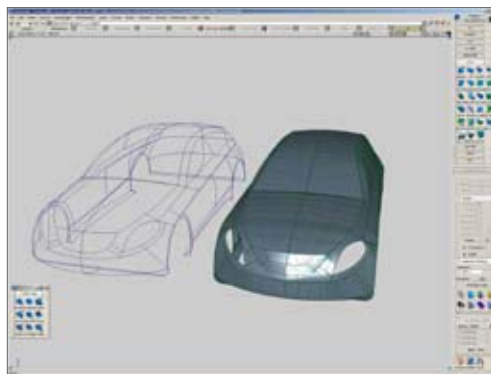
Flexible Modeling

Take advantage of different modeling techniques to describe any form. The AliasStudio surface modeling tools combine the repeatability and speed of curve-based modeling tools with the ability to directly “sculpt” the 3D model.



Curve Networks

Reduce the time required to create and iterate concept models by creating the surfaces from a set of connected curves that describe the desired form. This tool helps users create all surfaces in a single step, instead of requiring each surface to be created individually.



Design Modeling

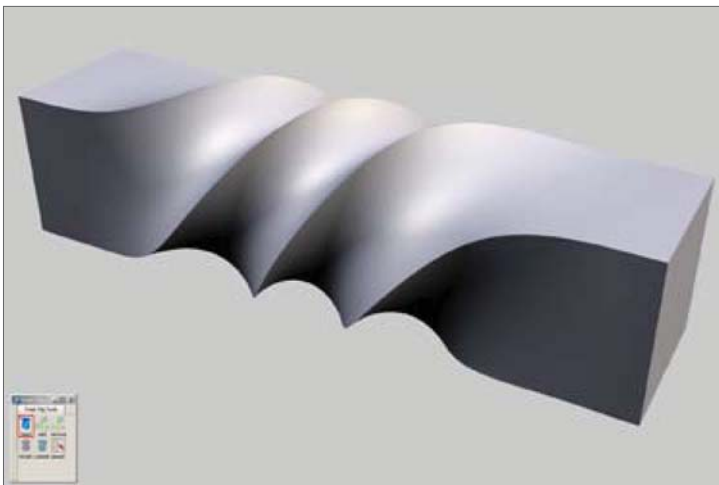
Construction History

Make changes to models without manually rebuilding geometry. Construction history preserves time-consuming, detailed modeling work so it does not have to be re-created if the associated aesthetic surfaces are changed. This capability enables users to accommodate changes throughout the design process.

ENHANCED Dynamic Shape Modeling

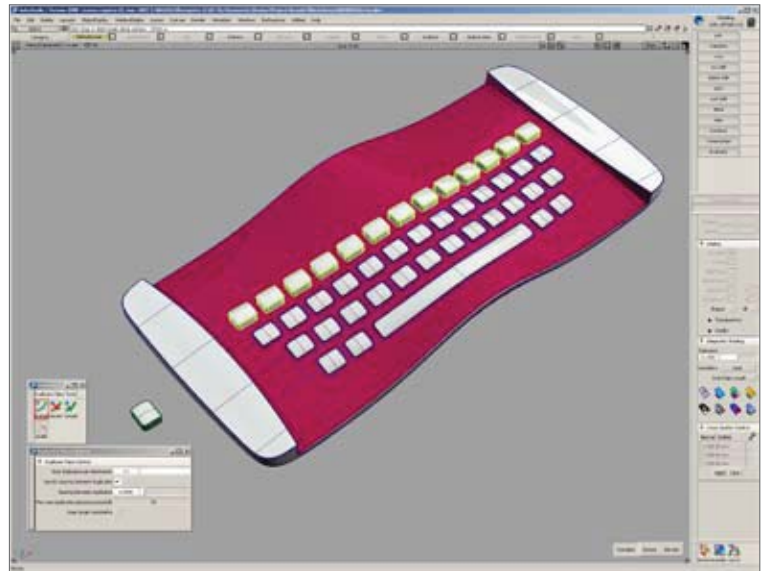
Quickly modify and experiment with shapes at any stage of the design process. Explore variations of existing 3D forms without rebuilding any geometry, or make modifications in real time in design reviews. This feature includes five powerful tools for dynamically shaping objects:

- Lattice Rig—Sculpt geometry by manipulating a customizable lattice that is created around the object.
- Transformer Rig—Use curves and surfaces as controls to precisely modify or constrain portions of existing geometry.
- Bend—Bend geometry using a curve to control the deformation.
- Twist—Twist geometry about a single axis curve.
- Conform—Deform geometry to conform to the shape of another surface.



NEW Duplicate Place

Create repetitive geometry that follows surface contours. This feature allows for editable, history-based duplication and placement of geometry onto other geometry.



Rapid Prototyping

Build physical prototypes more efficiently with the freedom to iterate when digital models are used. This capability helps users develop and refine designs before committing to production. With AliasStudio, 3D printing is possible using STL output for stereolithography (SLA) or by exporting data to computer numerical control (CNC) machines.



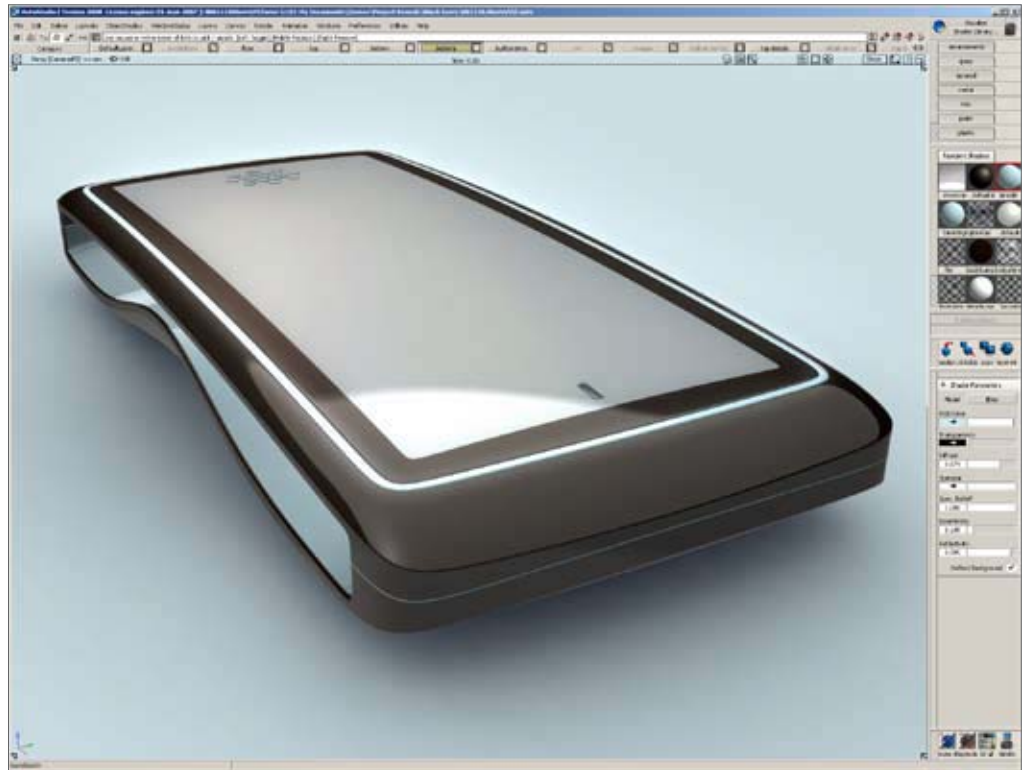
Visualization and Communication

Visualization aids understanding and brings ideas to life.

Visual communication is the designer's trade skill to evaluate design options, as well as to elicit responses, communicate intent, and analyze concepts.

ENHANCED Interactive Shading

Get immediate visual feedback while modeling and evaluating surface quality and design form. Increase the quality of shading to achieve high levels of realism, reducing the need to make many time-consuming rendered images. AliasStudio software now supports user-defined antialiasing quality to add realism to models, as well as glow, incandescence, and environment backgrounds.



ENHANCED Full-Screen Mode

Concentrate on the evaluation and review of concept models by taking advantage of the entire screen space, enabling users to work with only the interface elements they need. This mode is particularly useful for interactive presentations but is also effective for power users wanting maximum workspace.

ENHANCED Screen Output

Instantly save high-resolution images of any modeling window. Compose images that display the wireframe, canvas planes, or fully shaded models. Save any modeling window in standard image formats (TIFF, JPEG, BMP). Generate exact images of what is onscreen up to a resolution of 8000x8000 pixels.

Visualization and Communication

ENHANCED Software Rendering

Create high-quality rendered imagery for presentations and design reviews. In addition, use the photorealistic rendering capabilities to create images for print, video, or interactive media. The AliasStudio renderers (ray cast and ray trace) incorporate ambient occlusion calculations (soft shadows) and high dynamic range imaging (HDRI) support for added realism.



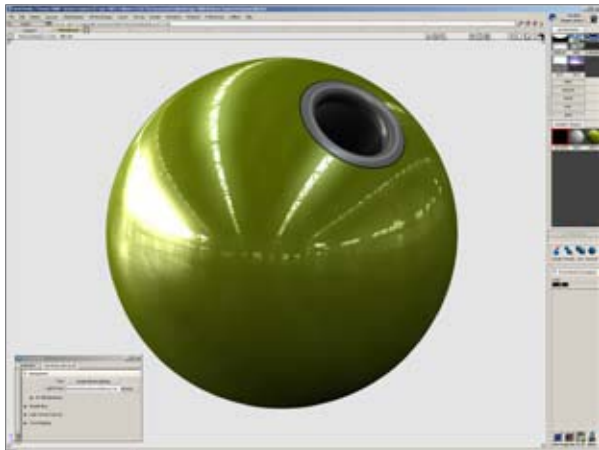
Alexandre Barros Neves, Duncan McCall—Electrolux

ENHANCED Ambient Occlusion

Render shading based on an omnidirectional light source to create general areas of shadow on models. Ambient occlusion is a crucial element in creating a realistic environment with ambient lighting. It provides the soft shading similar to that of other complex, indirect lighting techniques.

NEW Image-Based Lighting

Use HDRI as the light source for interactive visualization and rendering. HDRI support allows for the creation of more-realistic images for design evaluation, presentation, and marketing.



NEW QuickTime VR

Create turntables or 360 interactive QuickTime® VR files. Share 3D digital content with anyone, with the ability to view a design from all angles.



Diagnostic Shading

Interactively evaluate and get feedback about the aesthetic and physical properties of models throughout the modeling process. Preset shading modes, including color, curvature maps, zebra stripes, and draft angles, make it easy to evaluate models. Use these effects while creating and editing geometry.

Bookmarks

For effective collaboration and design review, use the bookmark tools to capture a snapshot of the design at any stage, for replay in AliasStudio or Autodesk® StudioViewer software. Use bookmarks to create dynamic design review presentations.

Animation

Create dynamic design presentations, and demonstrate functionality faster than building a working prototype—for less cost. Animation features allow properties of objects to be changed over time. Display these properties in real time or as rendered images. Create repetitive geometry that follows surface contours. This feature allows for editable, history-based duplication and placement of geometry onto other geometry.

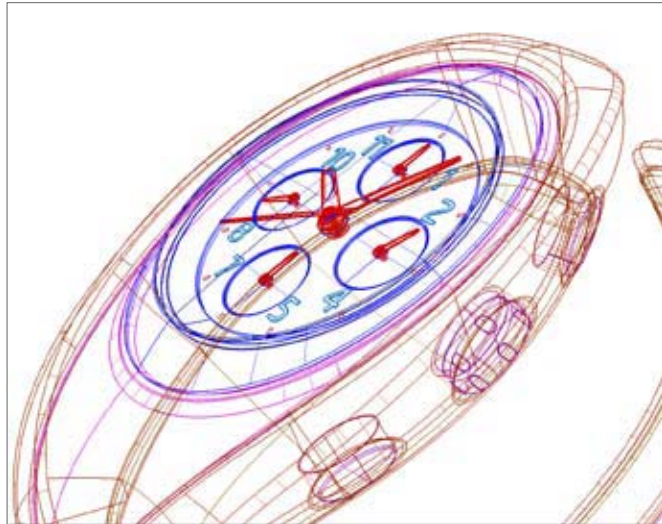
Precision Surface Modeling

This phase of the design process is geared toward defining each aspect of the product, so that marketing and engineering can sign off on the design for eventual production.

During this phase, high-quality surfaces can be provided to engineering for the creation of tooling. For automotive design, surfaces are created to meet the exacting standards for Class-A exterior surfaces.

ENHANCED Advanced Surface Creation Tools

Maintain positional, tangent, or curvature continuity with surrounding surfaces for high-quality results that are ready for manufacturing. These production-proven surfacing tools are designed for every possible modeling situation and accelerate the process of creating high-quality surfaces.



Semiautomated Modeling Tools

Create the type of clean, complex surface results that satisfy engineering requirements and reduce the time required to add finishing details to a design model. For example, create a fillet and an accompanying flange in a single operation.



Precision Surface Modeling

Explicit Surface Control

Maintain control over surfaces, creating the lightest, highest-quality geometry. Choose single-span (Bézier) geometry or multispans NURBS (nonuniform rational B-spline) geometry, depending on the complexity of the shape to be modeled. Surface creation tools include the option to explicitly define the number of spans and the degree of created surfaces.

Curve on Surface Paradigm

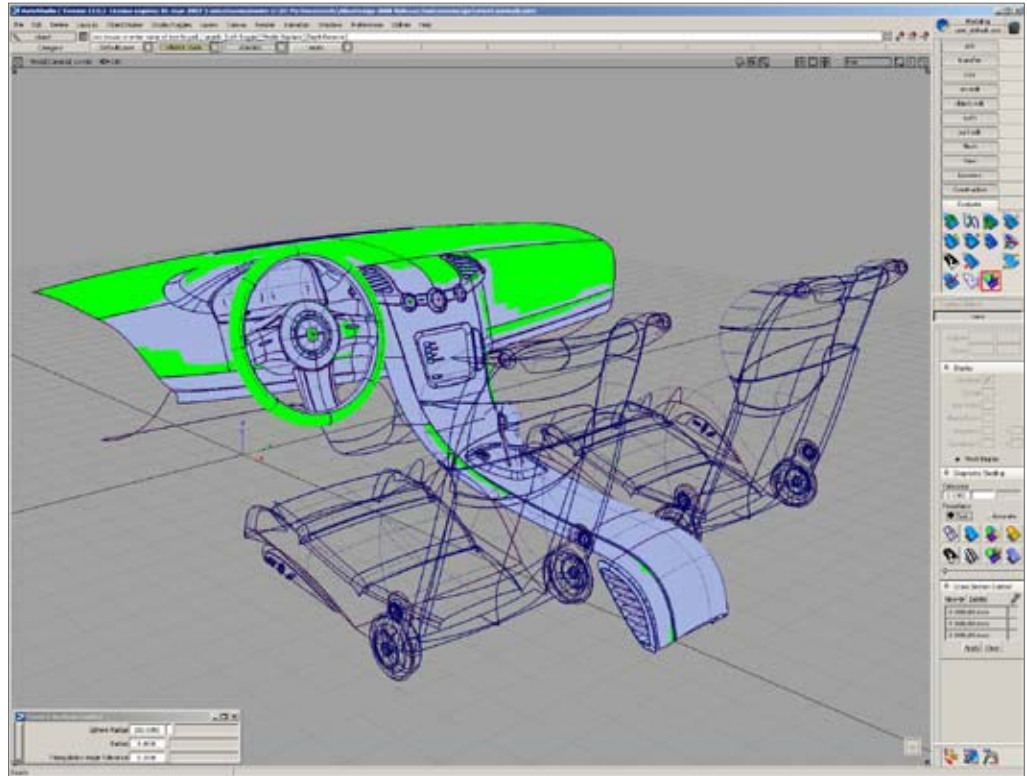
This feature provides a precise method of trimming and working with surfaces. Share trimmed geometry among modelers while retaining precision—especially valuable if the trimmed surfaces require modification.

Direct Modeling

Gain control over surface shapes to achieve the exact form and surface quality required, with accurate tools for manipulation and smoothing of surface vertices and hulls. Curve-based surfacing tools define the shape at edges. Use direct modeling to adjust the shape at any point within the surface.

Surface Evaluation

Verify the quality of created surfaces, including curvature and radii analysis, to help ensure that geometry can be used by downstream CAD products and meets manufacturing requirements. A specialized contact analysis tool provides an automatic test for safety regulations that restrict sharp radii on interior automotive surface areas.



Contact Analysis—Test for Auto Safety

Reverse Engineering

AliasStudio facilitates the workflow between digital modeling and scanned physical prototypes, with fast handling of large amounts of scan data and effective tools to extract and evaluate shape information.

Scan Data Performance

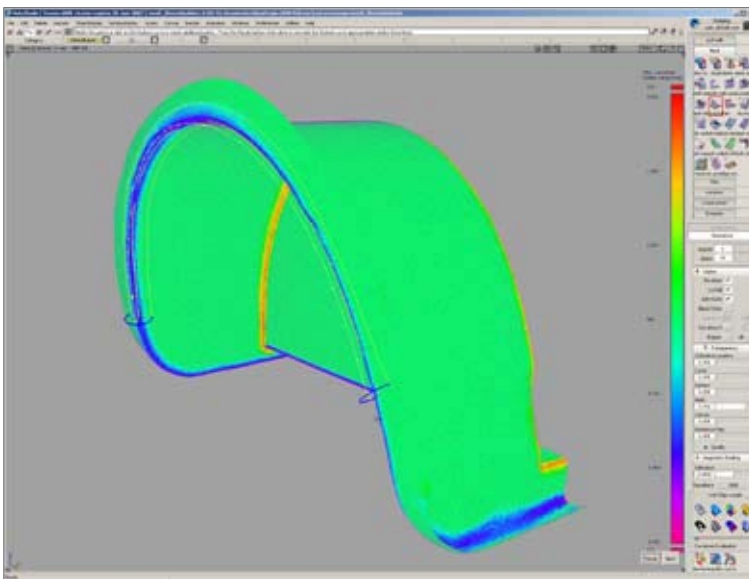
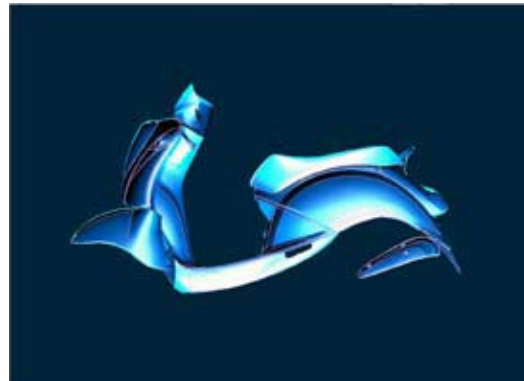
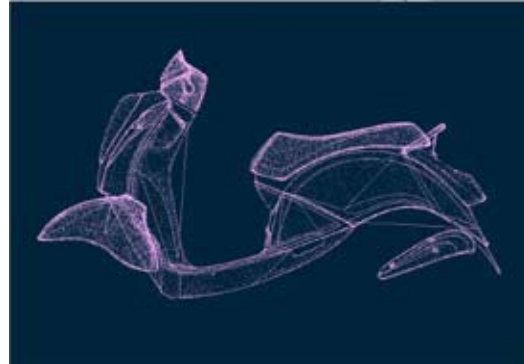
AliasStudio uses meshes—a highly efficient geometric representation for handling large models with millions of polygons—for a faster workflow when using large scans, such as those from automotive interiors.

Scan Data Processing

Simplify and remove pieces of scan data required to work efficiently. This complete set of tools for importing and configuring data from 3D scanners for visualization and reverse engineering includes cutting, smoothing, automatic hole filling, and mesh reduction.

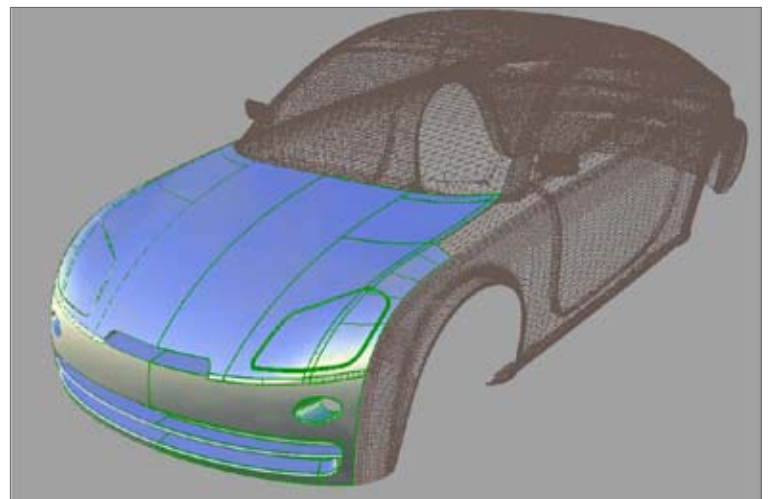
NEW Feature Extraction

Reduce the time required to create or update Class-A surfaces to match scan data, with this specialized tool to extract feature information from scan data.



Hybrid Geometry

Make design changes faster to a previous model, using the unique hybrid modeling technique in AliasStudio that combines NURBS surfaces and mesh data. Hybrid modeling dramatically increases productivity, giving users more time to be creative.



Analysis Tools

Dynamic evaluation features provide instant numerical or graphical feedback on the quality of surfaces, facilitating the fine-tuning of results.

Hybrid Modeling

Use a procedural curve-based, direct cv manipulation, or hybrid modeling approach that combines both techniques to create any shape. Benefit from the advantages of each approach to complete work more quickly and with greater precision.

Productive Environment

The AliasStudio user interface helps designers get up to speed quickly.

The intuitive UI shortens learning time for new users and enables experienced users to work more quickly and efficiently.

ENHANCED Marking Menus

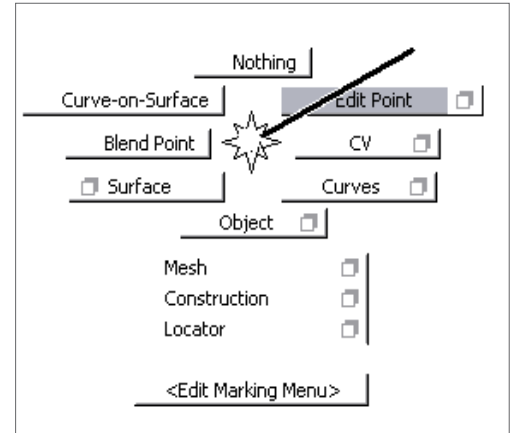
Quickly select commands without looking away from the design. Patented marking menus enable designers to use context-sensitive gestures to select commands.

Customizable Interface

Customize the user interface—including hot keys, tool display, and marking menus—to suit any workflow.

ENHANCED Data Organization

Improve workflow and performance by organizing work and making it faster to navigate through complex models. Categorize and organize model components into layers for more efficient navigation.



Process Integration

Data exchange with CAD software is important at both ends of the design process.

At the front end, design sketching and modeling can reference imported engineering data. On the back end, digital design data can help preserve the integrity of designs at the engineering stage.

ENHANCED Data Exchange

This feature includes fast, high-quality CAD translators for industry-standard data formats: DES, DXF™, IGES, STEP, VDA/FS, VDA/IS, and more.

ENHANCED Data Exchange with Autodesk Manufacturing Products

Exchange data with mechanical design and engineering products from Autodesk, such as Autodesk® Inventor™ software, using the industry-leading DWG™ data format.

ENHANCED DirectConnect Data Translators

Exchange data with leading CAD software packages such as the CATIA®, PTC Granite®, and SolidWorks® applications.

Model Verification

Use the Check Model Tool to test geometry created in AliasStudio to avoid potential problems when transferring data to CAD systems such as CATIA, Unigraphics®, Pro/ENGINEER®, and others. Tests are based on standards developed by the VDA (German Automotive Industry Association).



Designed by Jesper Design.

Autodesk AliasStudio Product Line

AliasStudio is a scalable product line with the right offering for your design tasks and deliverables.

Autodesk DesignStudio

Autodesk® DesignStudio® software enables designers to rapidly develop and communicate design concepts and prototypes using sketches, illustrations, photorealistic renderings, animations, and digital 3D models.

Autodesk Studio

Own the entire design process—from ideation through design refinement and resolution. Autodesk® Studio software includes all the features in DesignStudio, plus the capability to efficiently control the entire shape-definition process with tools to create, modify, and visualize precise surfaces and design details. It also includes advanced visualization features for realistic interactive evaluation and presentation.

Autodesk AutoStudio

Use Autodesk® AutoStudio software, an industry-leading application for automotive design and styling and the choice of major automotive styling studios throughout the world. The software provides a comprehensive solution for the entire shape-definition process, from concept sketches through Class-A surfacing.

Autodesk SurfaceStudio

Evolve concept models and scan data into high-quality production surfaces, including Class-A surfaces for automotive design, with Autodesk® SurfaceStudio software. It includes a full set of dynamic modeling capabilities for shape development, refinement, and control, as well as powerful interactive evaluation functionality to verify the aesthetic and technical quality of surfaces.

Task	Deliverables	DesignStudio	Studio	AutoStudio	SurfaceStudio
Creation and Communication of Design	<ul style="list-style-type: none"> • Sketches • Illustrations • Renderings • 3D concept models • Rapid prototypes • Animation 	○	○	○	
Design Refinement and Production Modeling	<ul style="list-style-type: none"> • Detailed models for transfer to CAD • Production surfaces • Advanced visualization imagery 		○	○	○
Scan Data Modeling	<ul style="list-style-type: none"> • Class-A automotive surfaces • Modified scan data • Scan data visualizations 			○	○

Autodesk Manufacturing

Never before have design applications and data management tools come together to simplify the way manufacturers design products and drive them through the manufacturing process. Autodesk provides a complete, interoperable line of industry-leading software integrated with a worldwide network of services and partners. Gain access to technical expertise for implementation, and utilize training and support programs direct from Autodesk to help use your design and data management software more effectively. Software maintenance programs allow you to stay up-to-date with the latest product releases and upgrades for your software. Designed to be deployed incrementally for minimal business disruption, Autodesk tools for manufacturing provide the most effective way to stay ahead of the competition and achieve maximum return on your software investment.



Learn More or Purchase

Enhance your design process from workflow to design interchange with Autodesk AliasStudio software. For more information, visit www.autodesk.com/aliasstudio.

For more information on resources to help you with crucial support issues, visit www.autodesk.com/support.

For more information on making the most of your software investment, visit www.autodesk.com/consulting.

To purchase Autodesk AliasStudio, contact an Autodesk Premier Solutions Provider or Autodesk Authorized Reseller. To locate the reseller nearest you, visit www.autodesk.com/reseller.

Cover rendering courtesy of Daniel Simon

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