

Technicon Design

Customer Success Story

Autodesk® AliasStudio™

AliasStudio offers us the greatest range of options.

—Werner Strathaus
Director
Technicon Design, Germany

Perfect Shapes

Using Autodesk AliasStudio, Technicon masters the most demanding surfacing tasks in automotive design.



Project Summary

With offices in England, France, Germany, China, and the United States, Technicon Design (Technicon) has been working on the front lines of automobile development for thirty years. The company's client list is an automotive who's who, including BMW, Ford, Honda, GM, Porsche, Renault, and many others. Technicon's highly skilled creative staff provides design services such as surfacing, visualization, and design development to top-tier automobile makers all over the world. Technicon relies on the Autodesk® AliasStudio™ software to:

- Produce Class-A surfaces of perfect quality
- Move from NURBS to Bezier geometry using a single software application
- Translate designers' inspiration into 3D concept models
- Save time and reduce design changes

The Challenge

In the automotive manufacturing industry, firms like Technicon must develop designs of increasingly high quality. For example, most manufacturers demand Class-A surfaces that have near perfect curvature and tangency alignment. Meeting these requirements is highly specialized work that must be carried out by creative experts with extensive mechanical and manufacturing knowledge.

Technicon's design experts are expected to develop Class-A surfaces with several levels of geometric continuity. To create these surfaces, Technicon needed sophisticated software capable of translating designer ideas into flawless 3D concept models with surfaces featuring perfect curvature and transitions. The company also wanted software that could incorporate engineering and manufacturing considerations early in the design process. That way, Technicon's designers would be able to produce viable concepts from the very outset of a project—reducing late design and engineering changes and shortening the design cycle.

Autodesk®

Technicon has been using AliasStudio for two decades to develop perfect surfaces.

The Solution

With automotive manufacturers expecting perfect surfaces, Technicon turned to the Autodesk AliasStudio product line. "AliasStudio offers us the greatest range of options," says Werner Strathaus, director of Technicon Design in Russelsheim, Germany.

AliasStudio provides several tools that help meet the exacting standards of Class-A surfaces. For example, direct modeling tools give designers control over surface shapes so that they can achieve the exact form and surface quality required. They can easily manipulate and smooth surface vertices and hulls and use curve-based surfacing tools to define the shape at edges. Designers can choose single-span (Bezier) geometry or multi-span NURBS (non-uniform rational B-spline) geometry, and can explicitly define the number of spans and the degree of created surfaces. Surface evaluation tools let designers verify the quality of the surfaces they've created, including curvature and radii analyses, and even test for safety regulations that restrict sharp radii on interior surface areas.

In addition, using AliasStudio helps Technicon complete work from start to finish using an all-digital workflow—and then pass on its 3D concept models to its clients' engineering teams to incorporate into digital prototypes. And because AliasStudio enables Technicon to gather, handle and display various data—as CATIA® V5 data and NX data via Autodesk® DirectConnect, as well as image data in formats like TIFF and JPEG—the company can incorporate engineering, design and manufacturing considerations early in the design cycle. "A welcome result of this early integration is an overall shortening of the process," says Strathaus. "We also reduce the need for late design and engineering changes."

Achieving G3 Continuity

Technicon's surfacing specialists begin their work armed with technical specifications and data

from a scanned clay model. Then, employing their knowledge of vehicle architecture, draw an adapted surface structure in AliasStudio. This includes primary surfaces, such as the roof panel, side panel, and hood; secondary surfaces, such as the transition between the side panels and the exposed wheel wells; and tertiary surfaces, such as the narrow transition from a side panel to the roof surface. Ideally, each of these transitions has G3 continuity. "With AliasStudio, we align surface manipulators in G2 or G3 rows," says Strathaus. "We can create very good surface quality from a very early stage in the design process."

AliasStudio software gives designers all the tools they need to achieve their tasks—resulting in a highly streamlined workflow. "Using an iterative process, we quickly advance from relatively simple NURBS surfaces with an extensive support structure to a Class-A Bezier structure without support lines," continues Strathaus. "We don't have to change from one software program to another during a project."

When it's time to deliver 3D concept models to clients, Technicon has it easy, thanks to AliasStudio. "There's not a single common data format that we can't generate," explains Strathaus. As a result, Technicon's work can be built into its clients' digital prototypes.

The Result

Autodesk AliasStudio software gives Technicon the tools it needs to transform designer inspiration into 3D concept models for its demanding clients. "We're able to carry a high percentage of early surfacing work through into the final Class-A surfacing stage," adds Strathaus. "It saves us—and our clients—a lot of time in the end."

Producing digital concept models also has an advantage for Technicon and its clients. "With AliasStudio, we can assess feasibility issues much earlier than with a physical model," explains Strathaus. "This



supports simultaneous engineering, reduces late design changes, and saves everyone a lot of money." Underscoring the company's satisfaction? Twenty years of using AliasStudio.

As client expectations have grown, so has the ability of AliasStudio software to rise to the challenge. Technicon is producing Class-A surfaces of perfect quality—with a single software application. Looking forward, Technicon anticipates that AliasStudio will continue elevating quality and simplifying processes.

"We'll continue to provide high-quality surfaces earlier in the development phase," concludes Strathaus. "Thanks to AliasStudio, our surfaces are set up in a Class-A structure, so we'll be able to modify designs easier."

For More Information

To find out how Autodesk solutions can help you with automotive industry projects, visit http://www.autodesk.com/conceptual_design-auto_supplier.



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—Werner Strathaus
Director
Technicon Design, Germany

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