Land Rover

Autodesk Manufacturing Solutions
Customer Success Story

Autodesk® AliasStudio™
Autodesk® Maya®



"Working with Autodesk AliasStudio is very natural for the team here. AliasStudio has become a very integrated tool within our process."

Richard Woolley
Design Studio Director
Land Rover

New Range Stormer Sets the Pace

Autodesk® AliasStudio™ for automotive design

Project Summary

In January 2004, Land Rover® stunned the automotive industry by unveiling its first ever concept car, a dynamic and high performance SUV, Range Stormer™. Autodesk® Alias Studio™—the suite of industrial design solutions from Autodesk, the world's innovation leader in 3D design technology—played a major role in the creation of this historic vehicle, from the visualization of initial plans to exporting data for final production.

Land Rover exploits the power and technical superiority of Autodesk's design and visualization software to deliver a ground breaking concept vehicle. Range Stormer heralds the next generation of hi-tech vehicles from the UK's leading 4x4 vehicle manufacturer.

The Challenge

Creating a Cutting-Edge Car

The bullish, muscular car was designed to raise the profile of the Land Rover brand and to challenge established views by creating a cutting edge concept with sculpted aggressive lines while still clearly retaining its identity as an authentic Land Rover.

Richard Woolley, Design Studio Director, Land Rover explains how, using Autodesk AliasStudio software, this was achieved: "We've used Alias' design software for many years and it's a vital part of our workflow. The Range Stormer is the first of an exciting new breed of cars for us; we wanted to really exploit the capabilities of the software by throwing off some of the constraints that apply when designing a production car."

The Solution

Streamlined Design Process

A team of designers and modelers at Land Rover started the Range Stormer project in March 2003 working to a final deadline for an engineering-ready design to be produced for August of the same year. Initial ideas for the car were drawn on paper, with team members contributing to each part of the vehicle design. Using Autodesk AliasStudio these concepts were then digitally sketched, modeled, and presented as visualizations. According to Design Director Woolley, the ideas gelled very quickly using this process, so it was easy to move from this stage to passing the initial design ideas on to the Computer Aided Styling Team (CAS) at Land Rover for the precise data work.

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Ian Radburn
CAS Modeling Supervisor
Land Rover

Autodesk AliasStudio gives Land Rover's designers the freedom for creativity and the precision of CAD software so that as the Range Stormer was modelled in 3D and final surfaces were rendered, the data was kept at a precise level of accuracy suitable for final production.

Organic Approach to Design

While Autodesk AliasStudio provided the Range Stormer team with consistent and reliable 3D modeling data as the backbone of the design and manufacturing process, collaborative visualization was at its heart. Land Rover's Power Wall—a life size display area onto which any digital media can be projected—sits at the centre of the Design Studio, surrounded by artists, designers, and CAS modelers working on the project.

"Being able to project visualizations straight from Autodesk AliasStudio to the screen enables us to be very clear about what is being proposed," says Ian Radburn, CAS Modeling Supervisor at Land Rover. "Having the Power Wall at the centre of the studio means that it is visible to all involved and there's a clear focus to the whole project. The visualization stage is really a turning point for any design; it's the moment at which the car goes from being ideas on paper to a tangible representation of the finished article. Autodesk AliasStudio has really given us the perfect means to take full advantage of this stage of our design workflow."

Design to Manufacture

The key task of integrating the design process with the engineering software Land Rover uses, CATIA, was made easier using Autodesk CATIA DirectConnect software. This module streamlines communication between design and engineering by enabling Autodesk AliasStudio to read and write CATIA file format for efficient and accurate data exchange.

"The toolsets and features in Autodesk AliasStudio are perfect for the design and modeling process," continues Radburn. "But what's really impressive is the way it fits into our established workflow. Autodesk has provided us with a suite of software that feels custom-made for us; we can work with it easily, quickly and accurately, three key goals which Autodesk has helped us to deliver."

The Results

Speed and Accuracy through Consistent Data

Once Range Stormer designs were finalized, the digital models and parts were then shipped to Italy where Stola—a company that specializes in the production of concept cars—was putting together the finished vehicle. The final Range Stormer car was completed and ready for its debut by mid-December, 2003, just over nine months after the start of the project.

"The use of Autodesk AliasStudio and its advanced visualization functionality was one of the key factors in getting the project finished so quickly," comments Radburn. "The whole reasoning behind using Autodesk's software throughout the design is that when the car is produced, there are no surprises. The final model is exactly what was seen at the visualization stage."

New Generation of Land Rovers

The Range Stormer project is a showcase for Land Rover for a vast array of design and technology innovations. One example is 'Terrain Response™' technology which optimizes the vehicle set-up—suspension, engine, and traction control—through the touch of a button to deliver the best possible on- and off-road vehicle control. The driver selects one of the six Terrain Response settings, from 'dynamic' for high-speed use to 'deep ruts' for cross-country driving, and the vehicle automatically configures itself. As the driver cycles through the options, the Range Stormer's Terrain Response display unit shows 3D animations representing each of the terrain options. These visualizations were animated in Autodesk Maya®, Autodesk's 3D modeling and animation software.

"Terrain Response will be included in all of our new performance vehicles going forward, including the new Discovery 3," explains Woolley. "We wanted to make some of the new technological developments apparent to the driver at a very visual level and Autodesk Maya has enabled us to do this perfectly with the driver's display."

Autodesk AliasStudio software was used to design the Discovery 3, launched at the New York Motor Show in April 2004. Radburn believes that it will continue to play a major role as Land Rover designs and builds its next-generation of vehicles. "The take away from the Range Stormer project is that Land Rover will be working with Autodesk software in order to create exciting and groundbreaking models in the future," enthuses Radburn. "Autodesk AliasStudio gives us flexibility to create fresh concepts like Range Stormer, but also provides the precision needed to complete projects even with tight deadlines. It really is a fantastic solution for our design needs."

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