



IMPROVING PRODUCTION TIME WITH VIRTUAL REALITY

Leveraging Virtual Reality and NVIDIA® PhysX to train Bentley Motors assembly colleagues enhances quality while shortening time to market.

CHALLENGE

Mounting the seats in a Bentley Motors automobile is a complex, model-specific process, and mistakes can easily damage expensive luxury materials. Bentley needed an efficient way to train assembly colleagues without compromising the excellence of their brand. Virtual Reality based on a highly realistic 3D model of the car combined with real-time physics is an ideal way to accelerate training and shorten time to market.

SOLUTION

Bentley turned to virtual prototyping specialists OPTIS to couple imported native CAD data with physics haptic feedback using NVIDIA PhysX for real-time VR. Modeling an entire factory line including the robot arm and full model allows Bentley to simulate interactions between the robot arm, seat, and/or car frame as an assembly colleague attempts to mount the seat using the controllers as if they were their own hands.

IMPACT

Virtual training using VR powered by NVIDIA PhysX running on Quadro GPUs enables Bentley to train assembly colleagues quickly and easily without risking damage to the actual, costly components. Training for a new model can begin before the components themselves have been built, thereby ramping up production speed and shortening time to market. This approach also realizes design, material, and process improvements.

“At OPTIS, we now partner with NVIDIA to demonstrate greater perceived realism within 3D models to make them come alive for users.”

Jacques Delacour, CEO and founder at Optis

“The primary use of the VR model was to influence product and process design. The correlation between virtual and real was extremely close.”

Mark Harding, Manufacturing Project Leader at Bentley Motors