



Virtual Reality for Nova Bus

CASE STUDY



NOVA BUS

◇ About the Client

Nova Bus is a Canadian bus manufacturer in North America owned by Volvo Buses. The parent company, Volvo Buses, is the world's largest manufacturers of large buses and coaches, operating in 140 countries and annually delivering more than 10,000 vehicles. Volvo Buses' core values are Quality, Safety and Environmental Care, the latter demonstrated through their pioneering electromobility solutions.

Nova Bus is a leading North American provider of sustainable transit solutions, including environmentally-friendly buses, high-capacity vehicles and integrated intelligent transportation systems. Nova bus is headquartered in Saint-Eustache, Quebec, Canada, and has manufacturing and assembly operations in Canada and the United States. Notable clients of Nova Bus include the Chicago Transit Authority, New York City Transit Authority and Southeastern Pennsylvania Transportation Authority (SEPTA).

Capabilities: *Virtual Reality*

◆ **The Scenario:**

Nova Bus had created a new design within their Low Floor Series (LFS) bus line. The new design addressed safety issues by improving driver visibility. Nova Bus intended to showcase the new bus design at the American Public Transportation Association EXPO, the biggest trade show event of its kind in the United States.

Several weeks in advance of the event, it became clear that Nova Bus would not have a prototype model of the new bus available in time. Nova Bus turned to Proforma for a creative solution on a tight deadline, to bring the experience of the new bus to the prospects at the trade show, without having an actual bus there.

◆ The Solution:

Proforma knew that a virtual reality experience had the potential to showcase the new LFS bus design in an engaging and interactive way for prospects at the trade show. The key improvements and features of the vehicle that Nova Bus wanted prospects to experience were the improved visibility in the cab and a new door design that afforded the driver a clearer view of passengers waiting to board.

Proforma's goal was to create a virtual reality experience centered around the cab of the bus, giving the prospect a realistic experience of the bus as if they were sitting in the actual cab. Using source materials from Nova Bus including CAD drawings and photos, Proforma created a lightweight version of the bus interior for use in virtual reality through a process called retopologizing. Proforma also created UV maps, allowing for a greater degree of realism in texture, shadowing and lighting in the virtual bus. These details increased the quality of the model and its realism, optimizing the Virtual Reality experience for the customer.

To allow customers to experience the virtual bus, Proforma built a kiosk for the trade show. The kiosk incorporated an actual drivers' seat and steering wheel from the bus. Customers were able to step into the kiosk, sit on the drivers' seat and use the steering wheel while wearing the Virtual Reality headset. Prototype mapped the virtual reality to the steering wheel, orienting the entire experience to the driver's perspective. Proforma also put the bus in a city block environment and created animated people, simulating the movement of pedestrians.

◆ **The Solution:**

The trade show customer, while wearing the headset, could look out the windshield and cab windows of the bus, view the unobstructed cityscape, and so understand the visibility enhancements of the new cab design. The customer could then look to the right and see the new door design affording a more full view of passengers waiting to board. And, if the customer turned around and looked behind them, they saw the full and expansive interior of the bus in real-life detail.

The Virtual Reality experience of the new LFS bus design turned out to be a highlight of the trade show event, and Nova Bus proudly shared the news of this success on their website, stating "This highly technological tool has enabled us to demonstrate the exceptional visibility we offer to bus operators."





