

## SITUATION

Neoplan Polska is a private, independent Polish company that produces luxury coaches and city buses. The company had been buying integrated bus chassis and frames from Neoplan Germany and then marketing the assembled buses under license. However, to stay competitive in an increasingly aggressive marketplace, the company had to drastically cut production costs.

To accomplish this goal, Neoplan Polska decided to begin designing and manufacturing its own integrated chassis and frame, which would be marketed independently. Neoplan officials realized their existing 2D AutoCAD environment simply would not support a project of this enormity. They needed to invest in a more process-oriented CAD/CAM/CAE solution to achieve their ambitious plans within the time-scale they had established for this project.

## OBJECTIVES

- ✓ Create its own 12m-bus frame with integrated chassis, to be manufactured at a new plant in Poland.
- ✓ Reduce component, manufacturing and assembly costs significantly, while ensuring that product quality is not compromised.
- ✓ Complete the bus based on the new design chassis and frame within five months.

## PROCESS VISION

- ✓ Migrate design office staff from a 2D CAD system to a fully integrated solids-based system and methodology without disrupting the new project schedule.
- ✓ Eliminate the need for expensive prototypes for strength analysis as well as "fit and function" verification by creating and analyzing parts in 3D software models.
- ✓ Work in a team-based, concurrent engineering environment, manufacturing the assembly in parallel to the design process to cut development time.
- ✓ Accurately communicate the development of the assembly to suppliers and other departments at regular intervals.

## ACTIONS

- ✓ Neoplan Polska chose I-DEAS® over other software systems evaluated due to its fully integrated applications and its suitability to address Neoplan's design, development and business process objectives.
- ✓ Because there was no time for an implementation phase for the project, an engineer from the SDRC sales office in Poland worked on-site

# Neoplan Drives Down Costs With I-DEAS®

*"We can now design extremely accurate virtual products without having to create physical prototypes. The first bus designed using this software and methodology is far superior to any we have designed previously. All customers have a choice and want to choose the best. Our choice was SDRC and we are extremely pleased with the decision we made."*

- Krzysztof Olszewski  
President  
Neoplan Polska



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There  
Faster®**

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with Neoplan, training the engineers and consulting in the initial stages of the product development

- ✓ The engineers created a full assembly in 3D solids and analyzed it to eliminate potential clashes among elements.
- ✓ Proprietary parts and assemblies were also modeled. These were then stored and managed in an I-DEAS parts library, enabling easy access for future design projects.
- ✓ To ensure that quality was not compromised, engineers used the integrated analysis capabilities of I-DEAS to achieve the optimum strength-to-weight ratio for structures and parts.
- ✓ Access to the part and assembly design data was managed with I-DEAS Team Data Manager™ software. This gave the engineers the assurance that they were working on the most up-to-date revisions and notified them if changes had been made to related parts and assemblies.
- ✓ While no prototypes were generated, a full production model was created in parallel with the development process.

### RESULTS

- ✓ The entire design was completed ahead of schedule, in an incredible four months. The production model was completed in just five months.
- ✓ Sending out 3D component information to suppliers allowed Neoplan to receive production parts back quickly. The windshield for example was delivered within six weeks of sending out the data to the supplier. It would have taken three to four months in the past.
- ✓ When 2D drawings were required, they were produced in several hours, instead of the three days it would have taken using the 2D system.
- ✓ Previously, mounting the engine into the bus took eight to ten hours. This was now reduced to just two hours in the new project.
- ✓ All the beams of the new chassis and frame were produced within the specified tolerances.
- ✓ The integrated CAD/CAM/CAE system led to design and manufacturing improvements that reduced the cost of the new chassis and frame by 30%.

### PLANS

Neoplan officials are now planning for the design and production of four new ranges of city buses and two new touring buses. They have increased their engineering staff 7-fold and are expanding their application of I-DEAS as they continue their drive towards high product quality and efficiency in responding to customer requirements.

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