



## SITUATION

The emergence of the Czech Republic from the former Soviet bloc in eastern Europe has wrought massive changes to the country's business climate. The impact on Czech-based companies such as Skoda Ostrov s.r.o. has been dramatic. Skoda is a world leader in the production of electric-powered trolley buses, and also produces diesel-fueled buses and foundry machines. While in the recent past, the company had, in essence, a captured market, today it faces much more competition, not only in its traditional territory of eastern Europe, but throughout the entire global marketplace.

To meet this challenge, the company has made significant investments in new technology designed to enhance its ability to deliver higher quality, lower priced products than its competitors. This includes migrating from a manual drawings-based process to one based on computerized 2D and 3D CAD/CAM technology. This investment is beginning to pay off, and has helped the company penetrate new markets in western Europe and the United States.

## OBJECTIVES

- ✓ Reduce the need for building expensive, time-consuming full-scale prototypes.
- ✓ Improve the ability to customize trolley buses according to customer needs.
- ✓ Find ways to cope with the severe shortage of product design engineers in the Czech Republic.
- ✓ Reduce costs while increasing product quality.

## PROCESS VISION

- ✓ Use new CAD/CAM/CAE technology to streamline product development.

# Skoda Ostrov Buses Keep Rolling With I-DEAS™

*"By investing in new information technology, including CAD/CAM/CAE, MRP, and E-CAD systems, Skoda is now able to be more competitive in the global marketplace. This technology has helped us improve product quality, reduce costs, and increase the productivity of our staff, and has aided in our ability to recruit new engineers who want to be able to use this type of technology."*

- Vilem Tyc  
Technical Director  
Skoda Ostrov s.r.o.



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# Skoda Ostrov Buses Keep Rolling With I-DEAS

- ✓ Migrate from a 2D, manual drawings-centered product development process to one built around 3D solid modeling.

## ACTIONS

- ✓ Skoda started sending 3D part models developed in I-DEAS Master Series™ software directly to NC machining in SmartCAM®.
- ✓ Bus components designed in I-DEAS™ software were fabricated and fitted into full-scale prototypes.
- ✓ 3D models help Skoda find and avoid part interferences prior to fabrication, and also aid in ergonomics, including optimizing the dashboard and the driver's view through the windshield.
- ✓ They are also using I-DEAS finite element modeling to analyze the strength and durability of foundry machines.

## RESULTS

- ✓ Parts can now be machined 50% to 70% faster than before.
- ✓ Instead of having to build one or more bus prototypes, Skoda has the confidence to build new buses directly from 2D and 3D models developed in I-DEAS. In one test, Skoda was able to fabricate a bus windshield designed in I-DEAS that fit perfectly in a full-scale bus prototype.
- ✓ They have also been able to reduce the mass of foundry machines by 15%, which lowers the cost of manufacturing and transport for Skoda and makes it easier and less costly for customers to install and maintain the machines.
- ✓ Skoda's information technology investment is helping them penetrate new markets, including the United States, for their trolley buses. Skoda trolley buses have been sold in Dayton, Ohio and San Francisco, California.
- ✓ The use of modern CAD/CAM technology now allows Skoda engineers to increase their productivity. It also helps Skoda recruit young university-trained designers.

## PLANS

Skoda intends to migrate from their current serial development process to a concurrent engineering process with an eye towards continued improvements in efficiency, quality, and cost reduction. They are also beginning to look at enterprise product data management systems.

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