

FreeForm® Modeling Plus™ Customer: geobra Brandstätter GmbH & Co. KG

Leading German toy manufacturer accelerates design and product development process by integrating the SensAble™ FreeForm® Modeling Plus™ system.



Company Overview

In Europe, geobra Brandstätter is well-known for its Playmobil plastic figures and animals for all kinds of creative worlds such as farm-life, city-life, dinosaurs, and prehistoric eras with dinosaurs. Additionally, they are known for their remote-controlled boats and cross-country vehicles.



This leading toy manufacturer has been working with the SensAble FreeForm® Modeling Plus™ system since the beginning of 2001. The enthusiasm of the industrial designers and the extensive use of the modeling software led to the purchase of a second system at the end of 2002. Since then the company has added a new system yearly for a total of four FreeForm® Modeling Plus™ systems to date. The department of design development creates up to 80 new pieces from the combination of new designs and nearly 10.000 archived pieces every year.

Uwe Reuter, industrial designer, started working with the FreeForm® Modeling Plus™ system v3.0. Although he was rather skeptical initially, he quickly appreciated the advantages of designing different models and of making quick changes.

When a design team gathers at a FreeForm Modeling Plus system, the modeler can change the models interactively during the discussion. Thus, three or more different model versions can be generated and evaluated within minutes.

In order to show the ease-of-use of the modeling software, Reuter mentions his colleague Karin Eskofier, a sculptor, who had never before worked on a computer. In earlier times, she could not have imagined modeling dinosaurs, pandas or other animal forms with virtual clay. Now, she cannot imagine working without the FreeForm® Modeling Plus™ system.



According to Reuter, Playmobil and the FreeForm Modeling Plus system are a great combination. The designs as well as technical modifications are easily made with the system. All kinds of models can be revised and subsequently processed by the CAD department - be it an amphibian vehicle or a boat.

The Digital Production Process Today

PLAYMOBIL-Dinosaur-Series
won treasured Award
"Toy Innovation 2004"

After introducing the FreeForm Modeling Plus system into the workflow, the process of conventional prototyping changed immensely in the last three years at Playmobil.

Today, the designer makes his preliminary drafts digitally with the system and first prototypes are created via Rapid Prototyping (Objet 3D printer) to check the play functions, the looks, and its integration into the play philosophy of Playmobil.

After the model is revised according to molding criteria, the model data and user-defined parting surfaces and curves are converted into IGES-data to allow a smooth integration of FreeForm data into the process chain. In Pro/E assemblies are finalized, snap fits added and any other dimensional constraints required.



Depending on the type of geometry, models are not only used in the phase of preliminary drafts, but also in mould making. Michael Friedrich, a model maker, has been working with the FreeForm® Modeling Plus™ system since version 5.0. and likes testing all kinds of new modeling methods. He modifies the FreeForm models given to him by the designers or sculptors to meet the subsequent production criteria such as adapting a design model to have planar parting lines to remove undercuts, and to decide where to position sliders for the mould tools. Michael Friedrich hands off to Christian Winter, the CAD-specialist.



Amphibian vehicle on water and on road

Advantages of working with the FreeForm® Modeling Plus™ system

Asked why his company integrated the FreeForm® Modeling Plus™ system into the development process, Reuter mentions two crucial reasons. "On the one hand you can learn and use the program real quick, on the other hand the program offers great flexibility in quickly creating different versions of models."

Michael Friedrich, model maker, is excited about the modeling speed and adds that "a further advantage of the FreeForm Modeling Plus system lies in the higher precision of working directly on a digital model from day one of the design process. All the imprecise details which had previously occurred when hand models are digitized and milled, are no longer a concern." Secondly, if a design needs to be altered, both the model maker and the designer can do this, as both are working with the same tool, the FreeForm Modeling Plus system.



One of the first projects. Designed using the FreeForm Modeling Plus system

Christian Winter, CAD-specialist, has appreciated the functions and advantages of the FreeForm Modeling Plus system since v3.0. In comparison to traditional CAD-systems, he sees the biggest advantage in the way geometries are described, especially with regard to model modifications, total deformations and form changes.

Conclusion

The company geobra Brandstätter GmbH & Co. KG is a good example of a transition from a traditional, hand-craft business to a modern company taking advantage of digital technology. This transition shows that the FreeForm® Modeling Plus™ system can be successfully integrated into the product development, and that the implementation of new digital modeling technology is a good investment for processes based on hand-craftmanship.

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