> Objet Geometries 3D printing solutions have helped us to radically reduce our time to a finished product and have also significantly decreased the risk of generating faulty molds for production purposes
>
> **Svein Reidar Rasmussen**
> Hardware Developer,
> NordicNeuroLab

NordicNeuroLab Radically Reduces Time to Market, with Objet 3D Printing

NNL is an innovative Scandinavian medical design and production company that specializes in functional MRI (fMRI) imaging. Its product line features integrated hardware and software components that can be used in unison or separately. Functional imaging is a complex interdisciplinary field and NNL's relationship with medical professionals has been essential for transforming great ideas into great products. The entire NNL product line is designed and developed in collaboration with its customer base of medical research and clinical groups. Strong partnerships with MRI system manufacturers, leading research institutes and feedback from customers drive the continuing evolution of the proprietary NNL technologies and product line.

NNL operates in a competitive market where uncompromising product quality must be combined with tight control of costs. Extensive and stringent pre-production testing of new products is essential. Looking for an effective way to fully evaluate its product designs early on in the development process, NNL decided to use a 3D printing system from Objet Geometries to create prototypes at different stages.

Objet's 3D printing technology is instrumental in NNL's ability to meet customers' demands for made-to-order imaging units and peripherals. It enables NNL to visualize concepts and to test form and fit in regard to other components at an early stage during the design process. NNL also uses Objet 3D printing solutions to test ergonomics and evaluate the overall design. Additionally, one of the main reasons NNL chose Objet was because it would enable printed parts to be used not just for prototyping, but also in the final product.

CASESTUDY

AT A GLANCE

Company: NordicNeuroLab (NNL)
URL: www.nordiceurolab.com
Location: Bergen, Norway
Industry: Manufacturer and supplier of high-quality products for MRI, with a special focus on functional imaging (fMRI)

Challenges

> Satisfy wide variety of product requirements from medical researchers and clinical groups
> Visualize design challenges pre production; problem-solve and test all components for fit, form and function
> Reduce the costs of creating molds during the production process

Solution

> Eden™ 3D printing system from Objet Geometries Ltd.

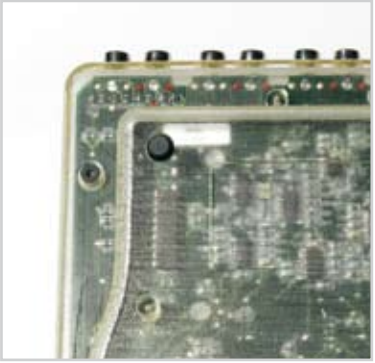
Results

> Insertion of electronics inside translucent models provides insight into design flaws that otherwise would be unidentifiable prior to production
> Full validation of product designs using models eliminates time consuming and expensive mold corrections; this exponentially reduces time to market and decreases overall production cost
> Ability to use printed parts as both design prototypes and in the end product itself

OBJET

Models provide insight into product behavior

"Using the Objet Eden 3D printing solution is the ideal way for us to easily and quickly meet our customer's demands," says Svein Reidar Rasmussen, Hardware Developer at NordicNeuroLab. "During development and design of a new product, we use rapid prototyping with Objet model to show us how the final product is going to feel." This helps NNL make decisions and problem-solve where other external products are used in combination with its solutions.



"Objet gives us the ability to quickly verify our designs. In turn, this has enabled us to speed up our workflow and create a highly effective trial and error – or test and trial – development and design process. We are seeing a much quicker time to market for our product line," says Rasmussen.

NNL makes full use of the rubber-like properties of the Tango material to evaluate the ergonomics of buttons and controls. It uses FullCure®720 Transparent model material to create translucent models of product shells. With electronics inserted inside the shells, NNL can better understand and identify otherwise unpredictable design flaws.

3D printing that goes beyond modeling

Objet 3D printing has helped NNL eliminate errors in the pre-production phase of injection molding. The time to generate molds and the costs that these incur had always been a significant portion of the costs of developing any new NNL product. The ability to check, before production, that the mold is correct saves a lot of hassle and prevents errors in the injection molding process, dramatically reducing overall costs.

Additionally, for NNL, the value of Objet models goes far beyond prototyping. "The high accuracy, smooth surfaces and strength of Objet models give us the possibility to use many parts in the end product." explains Rasmussen.

The bottom line: faster, more cost effective product development

With Objet, NNL is able to cost-effectively engage in rapid prototyping, fully evaluate the ergonomic functionality of their product line and even use the design prototype models in the final products. As a result NNL has dramatically cut its production costs and time to market.

About Objet Geometries

Objet Geometries Ltd., the innovation leader in 3D printing, develops, manufactures and globally markets ultra-thin-layer, high-resolution 3-dimensional printing systems and materials that utilize PolyJet™ polymer jetting technology, to print ultra-thin 16-micron layers.

The market-proven Eden™ line of 3D Printing Systems and the Alaris™30 3D desktop printer are based on Objet's patented office-friendly PolyJet™ Technology. The Connex™ family is based on Objet's PolyJet Matrix™ Technology, which jets multiple model materials simultaneously and creates composite Digital Materials™ on the fly. All Objet systems use Objet's FullCure® materials to create accurate, clean, smooth, and highly detailed 3D parts.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as Education, Medical / Medical Devices & Dental, Consumer Electronics, Automotive, toys, consumer goods, and footwear industries in North America, Europe, Asia, Australia, and Japan.

Founded in 1998, Objet serves its growing worldwide customer base through offices in USA, Mexico, Europe, Japan, China and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions. Visit www.objet.com.

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