

## Figure 4® 3D Printer adds Precision and Productivity for Swedish Design Agency, Splitvision

The Stockholm-based product design agency, Splitvision Design, is among the first Nordic companies to invest in 3D Systems' Figure 4 Standalone 3D printer. With its investment, the company can now evaluate fitting and assembly with incredible accuracy before moving in to serial production. At the same time, the Figure 4 Standalone gives the company a productivity boost in prototyping.

Since its inception some 30 years ago, Splitvision Design (then named Formbolaget), has done a wide variety of design work - from point-of-sale solutions to bespoke truck cabs. Today, it works almost exclusively with industrial design for technology-intensive companies in the medtech and automotive verticals. The thing that makes Splitvision unique is that it offers services that stretch beyond the average design agency—with a focus on manufacturing and logistics.

### CHALLENGE:

Find a solution to tackle significantly increased customer demand for new product designs

### SOLUTION:

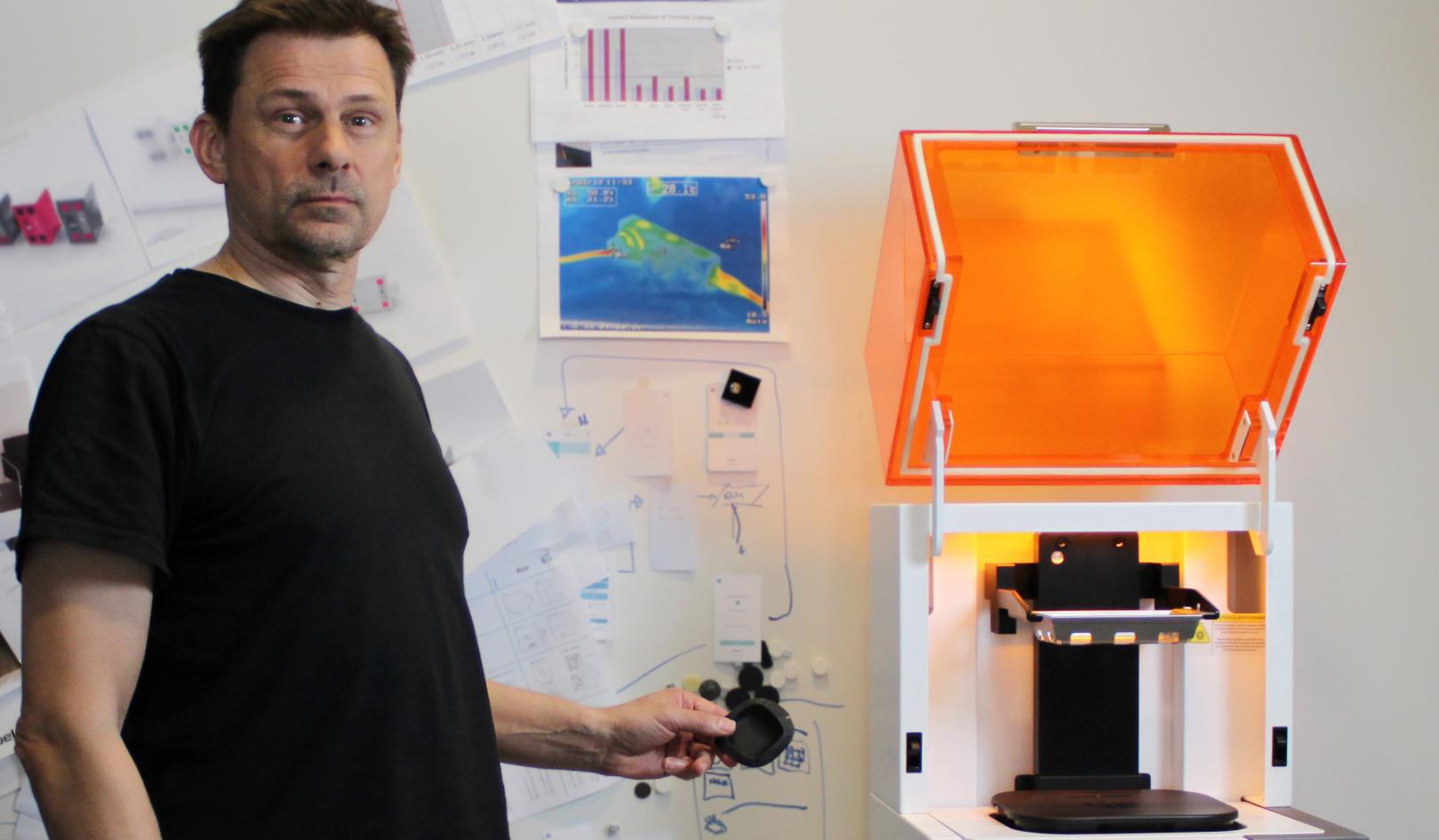
3D Systems' Figure 4 Standalone 3D printer, using Figure 4™ ELAST-BLK 10 and Figure 4 TOUGH GRY-15 additive materials

### RESULTS:

- Production of high-quality prototypes for testing
- Very rapid production of elastomeric prototypes, enabling faster product iteration
- Reduced amount of product iterations to get products to market faster

*Splitvision has worked for several years with a number of innovative medtech companies, several of which are hearing aid brands.*





*“3D Systems’ Figure 4 ELAST-BLK 10 material has the same properties as rubber. It’s beyond our expectations,” says Lukass Legzdins, R&D manager, Splitvision.*

“Even though we set out as a traditional design agency, over the years, we’ve seen that we get a better and more controllable manufacturing process when we focus on these steps,” says Lukass Legzdins, R&D manager at Splitvision Design.

“We went from just working with design, up to engineering, planning, purchasing and logistics,” adds Legzdins. We also have offices in China that handle the day-to-day contact with manufacturing over there. Here, we also perform quality control and monitor the supply chain. All in all, this creates really good results, and enables us to add a lot more value to manufacturing even at the concept phase.”

#### **Better prototyping with 3D printing**

This type of turnkey commitment is also reflected in prototyping. With its new Figure 4 Standalone 3D printer from 3D Systems, installed by PLM Group, the company is expanding its services portfolio and adds competence to product development. Now, Splitvision can offer better physical prototypes, printed inhouse. At the same time, with the help of its high-quality 3D printed parts, they can optimize the data needed before ordering injection molding tools.

Before using 3D printing, prototyping was tedious and manual work. The company worked with materials in foam and plastics to explore geometries and ergonomics, sometimes in full scale. Prototypes for functional tests or for customer review were bought from a third party supplier, either from Sweden or China.

“Then, all of a sudden, there was this period when we had a massive amount of products under development, and everything basically piled up as we waited around for our 3D printed prototypes,” said Legzdins. “That’s the moment we decided to invest in an inhouse 3D printer, and luckily, it coincided with us discovering the Figure 4.”

Splitvision had no prior experience with Figure 4 technology, which is an offshoot of SLA (stereolithography). It had previously gone under the radar, as SLA parts rarely displayed the mechanical properties the company needed. But with the Figure 4, the technology suddenly became very interesting.

## Beyond expectations

Splitvision has worked for several years with a number of innovative medtech companies, including several hearing aid brands. The production often consists of associated products, such as hearing aid casings, as the companies have optimized their production lines for their core products. But hearing aid casings can be tricky to design and manufacture. They need to protect the hearing aid, be of excellent quality and reflect the brand, and be durable over time.

The casings that Splitvision design and manufacture are partly made of TPE or silicone. The soft lining keeps the hearing aids in place and protects them from everyday wear and tear. But 3D printing TPE and silicone is next to impossible if you want good results. The only option is to mold, which is a big challenge when you want to evaluate design and investigate potential assembly challenges.

"After receiving a number of print samples from PLM Group, we realized that 3D Systems' Figure 4 ELAST-BLK 10 material had the same properties as rubber. It was beyond our expectations," Legzdins. "The material enables well-defined surfaces. We can see detailed shapes and facets. But most importantly, it allows us to evaluate the assembly process to identify potential challenges. Overall, it's an excellent way for us to get confirmation of the geometry, while at the same time enabling our customers to do their own user tests."

Combined with using the rigid Figure 4 TOUGH-GRY 15 material, Splitvision can add more detail to their parts. With the high resolution of the printer, there's rarely any need for finishing.



*The majority of hearing aid cases designed and produced by Splitvision are partly made of TPE and silicone.*

*"One could say that our Figure 4 takes us one step closer to reality," said Legzdins. "Previously, we added more margin to our CAD files before ordering tools. Now, we can skip one or two steps in the development phase, as we have much more geometrical data from the 3D printed prototypes. The result is fewer incremental changes and adjustments to the tool."*

The Figure 4 printer also reflects Splitvision's core values in product development.

"When we work with customers, we want to add our competence in design and manufacturing, wherever we see that we can optimize function. We use this knowledge to raise the quality of the product to new levels," said Legzdins.

Learn more about Splitvision and 3D Systems' Figure 4 at: <https://plmgroupp.eu/figure-4-splitvision/>



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