stratasys

USE CASE

Solving Product Development Challenges with Multifaceted 3D Prototyping Technologies

Intro

In an ambitious demonstration of Stratasys' pioneering spirit, Industrial Designer Ori Levin introduced a groundbreaking air purifier prototype. This project not only underscores our dedication to pushing the boundaries of innovation but also illustrates the seamless integration of four Stratasys 3D printing technologies: PolyJet™, Neo® SLA, P3™ DLP, and SAF™. The air purifier prototype is a testament to how diverse 3D printing technologies can revolutionize product design and development processes, offering unparalleled color, texture, transparency, and detail in a single, cohesive prototype.

Challenge

The journey from concept to market-ready product is fraught with decisions that span aesthetics, functionality, ergonomics, and cost-efficiency. Achieving a quicker time to market with a high success rate hinges on the ability to create a hyper-realistic prototype that embodies both the color-material-finish (CMF) and functional dimensions. By using multiple Stratasys technologies for this proof of concept aimed to surmount these challenges, a new benchmark for integrated prototyping is being set.

Solution

Leveraging the unique strengths of different 3D printing technologies in one prototype enabled the creation of complex components that addressed various design challenges simultaneously. PolyJet full-color, multi-material VeroUltra™ resins, were instrumental in achieving visual appeal, ergonomic comfort, and functional utility, including a wood-texture simulation visible on the handle. The transparent cover benefited from the superb surface finish by SLA technology and the dimensional stability afforded by the Somos® Perform™ material. Meanwhile, the internal mechanics, such as the rotor, were rendered with precision and durability thanks to P3 DLP and SAF PA11 materials, demonstrating their capability in producing mechanically robust parts.

Impact

This multifaceted approach to prototyping has set a new standard for product development, enabling designers and engineers to better communicate the challenges at hand, thus expediting decision-making processes with fewer iterations. By harnessing a variety of materials and technologies to test ergonomics, aesthetics, and functionality concurrently, the project achieved greater design accuracy, reduced time to market, and minimized financial risks. This case underscores the transformative potential of integrated 3D printing technologies in realizing complex, multi-dimensional prototypes with speed and certainty.