

Helson and Jackets

Award-winning inventor taps into the AFRC's modelling expertise to finalise product design

Background

Helson and Jackets is a Castle Douglas based business that has been developing its innovative mixed reality device since 2007.

A projector that suspends 3D holographic images in space, the device began as an artwork before capturing the world's attention at a 2014 exhibition.

Leading to a number of funding awards that helped progress its development, the first generation io is now available for purchase.

Customer challenge

Helson and Jackets faced a design problem while progressing the io from a prototype into a product ready for market.

They approached the AFRC seeking validation on a number of important design decisions and safety considerations.

It was agreed that the AFRC's modelling expertise would help provide key data, allowing Helson and Jackets to make informed decisions about their chosen manufacturing route, while also speeding up product development.

How did the AFRC help?

Funded by a Scottish Funding Council Innovation Voucher, an experienced modeller from the AFRC's Forging and Incremental Technologies Team used finite element (FE) modelling to test Helson and Jackets product, the io, under a number of different conditions.

FE modelling uses a numerical technique for simulation, helping reduce the number of physical prototypes and experiments required during the product design phase. It provides a better understanding of how a design will behave in real-world condition, determining whether it will work as intended, break or wear out.

In earlier versions, the high speed spinning projection head of io was prone to critical problems such as noise, vibration and dust circulation. Helson and Jackets devised two potential solutions for these issues while developing a new demonstrator version of its display.

Business impact

The data provided by the AFRC enabled Helson and Jackets to 'test' the device and make a crucial design decision.

FE modelling provided data that addressed the challenges and implications of each design, clearly ruling out one of the options.

This prevented Helson and Jackets from going down the wrong design route and wasting resources, such as time and materials. It also helped secure further confidence in their product.

Customer quote

"Javad was really open and engaging and helped us to understand the maths behind our ideas. The project itself was speedy and communication was good – the outputs helped us progress on our route to market."

Chris Helson, Founder, Helson and Jackets

"...This saved potential wasted resources from going down the wrong design route. It also helped secure further confidence in io."

