

After three years of joint development with specialist research and training organisation CTC, Paris-based software start-up Blue Ridge has brought to market a new platform called Last Engineers. The system will, according to the two partner organisations, offer footwear manufacturers a new way of controlling and improving comfort in the shoes they make because it can help them make sure they use the correct last from the outset.

Lasts first

Lasts are the first aspect of footwear manufacture to have come under the scrutiny of Blue Ridge, a start-up software company in Paris run by Nathanaël Majster and Simon Beckouche. Working with specialist footwear research and training body CTC, Blue Ridge came up with a way of analysing 3D scans of lasts that can make sure the last itself reflects accurately the shape of the foot. The result, a software program called Last Engineers, is now ready to come to market.

The system's core processor automatically measures the last at more than 200 points and checks the measurements against data relating to size, heel height and so on. This check allows Last Engineers to identify potentially problematic areas and to forecast the level of comfort that a shoe

made from the last will provide.

To enable the software to measure this information and interpret it correctly, Blue Ridge worked at the heart of CTC, spending time in the organisation's laboratories in Lyon, testing the system and the ideas behind it. Close connections the software start-up established with CTC expert last-maker Denis Cartier and the head of its footwear department, Christophe Cumin, were an important part of its success.

The partners are in agreement that, until now, it has been difficult for manufacturers and brands to assess exactly the properties of any shoe they would be able to make from a particular last. Identifying defects, ranging from small kinks appearing in the upper material to the volume being inadequate to make a shoe of the size desired, can be hard to anticipate without in-depth

knowledge of products made on exactly the same last in the past, or without constant dialogue with the last-maker.

A TOOL FOR NOW

CTC and Blue Ridge believe the time has come to provide shoe companies with a tool to help them make sure they are choosing the right last for the footwear they want to make.

Last Engineers carries out its detailed analysis automatically and in seconds, interprets the results and ranks them in order of importance. The starting point is any file in STL format of a 3D scan of a last. It will measure it and mark up any zones on the last that appear to be at odds with the parameters stipulated by



Lasting impression. Increased knowledge of lasts will help shoe companies make better fitting, and more comfortable products.

CREDIT: ECCO

the shoe manufacturer. It will then generate an optimised version of the last and make that, the new virtual last, available for download as an STL file. In the course of 2019, Blue Ridge will add functionality such as allowing manufacturers to stipulate any modifications they want to make to a particular last, compare different lasts to see if it can recommend another from the shoe company's range that seems to be better, manage databases on the size and shape of feet and make it easier for footwear companies to produce made-to-measure lasts for individual customers.

SCORE CARD

The software produces a rating system, marking different areas of the last and different measurement values using green, orange and red to indicate at a glance which places have a high, medium or low score for accuracy compared to the stipulations of the manufacturer. It uses all the measurements it gathers to rate the accuracy of the different measurements of the parts of shoes produced on the last compared to the size the shoe company envisages making. It gives with a score between 0, for the lowest accuracy, and 10 for the highest. If necessary, the software will also indicate the correct size of shoe that each last will make, if that differs from manufacturers' expectations.

This aspect of the software tool's performance, which Blue Ridge and CTC refer to as "optimising the last", will lead to better shoes, the two partners claim. Manufacturers will be able to correct inaccuracies. Just a few millimetres to make the upper fit more snugly on the instep of the foot, for example, can prevent the wearer's foot from sliding forward towards the toe of the shoe or stop the toes of the foot from being squeezed while walking.

A further potential use of the software is in comparing how effective a single last is in making different types of shoe. CTC and Blue Ridge identified that manufacturers will often use the same last to make both a ballet pump and a derby shoe, for example. Because the system requires users to specify the kind of shoe they want to make as part of the information they must feed in when using Last Engineers, the software will quickly adjust the scores it awards a particular last. In other words, footwear manufacturers, designers and

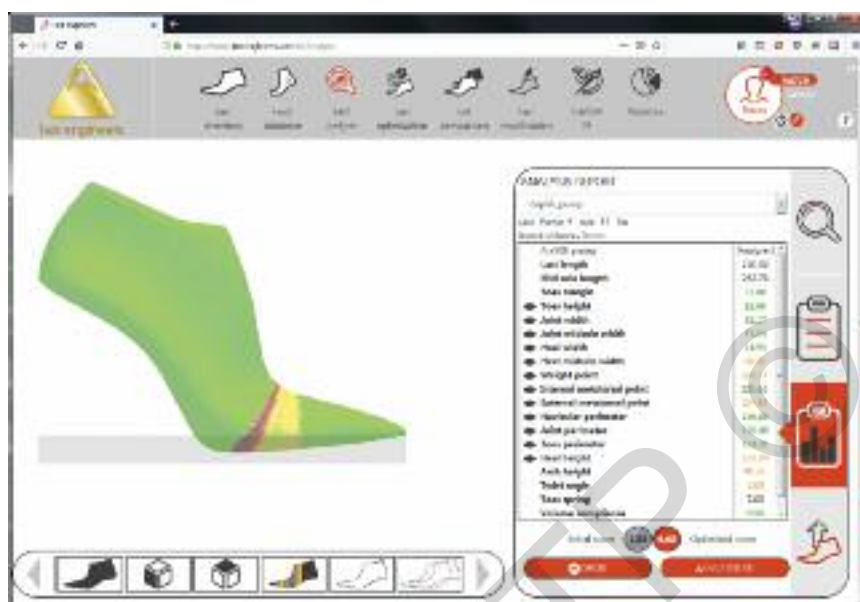


Figure 1 shows a comparison of the suitability of using the same last to make a pump or a derby shoe. In this case, the pump posts by far the better score.

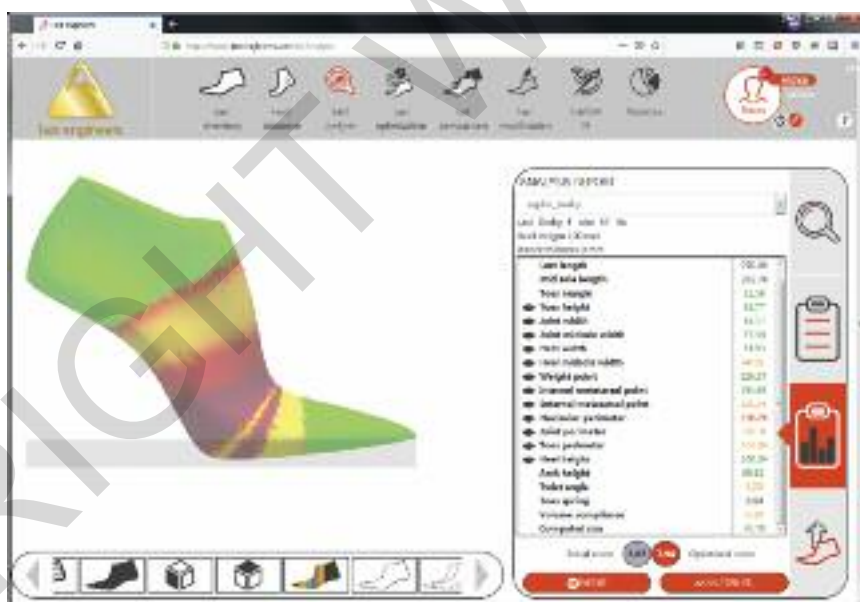


Figure 2 shows the adjustments a manufacturer needs to make to this last to achieve better results for a derby, pushing its suitability score up from 3.84 to 7.9.

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brands will be able to see at a glance (and without using up any time, materials or money) if a last is more suited to making a boot or a brogue [see figures 1 and 2].

In the same way, the system allows users to carry out an easy but accurate comparative analysis of a last's suitability for similar styles of shoes but with adjustments to the shoe-size or to the heel height.

HELP ACROSS THE BOARD

Last Engineers can help professionals at different stages of the footwear supply chain, according to Blue Ridge. Its contention is that the software will

help design teams in any situation that requires a focus on lasts, and will help last-makers take greater control of the work they do and how they present it to clients. It is a tool that will also help product managers, when the time comes for them to choose from a range of lasts to pick from, while, in a similar way, footwear buyers will be able to use the software to check that the selected lasts will deliver the shoes their companies want.

Finally, footwear manufacturers themselves will be able to use Last Engineers to reassure themselves, and their customers, that the shoes they are making will be comfortable to wear. 