

TECHNOLOGY

IMPROVING THE AUTHENTICATION OF BANKNOTES WITH SOUND OF INTAGLIO

At the end of 2016, Koenig & Bauer AG founded coverno GmbH in cooperation with the Institute for Industrial Information Technology (inIT) of the Ostwestfalen-Lippe (OWL) University of Applied Sciences to work on banknote security and authentication.

After a year and a half of research and development, the 4-person start-up has fine-tuned its Sound of Intaglio™ algorithm into an almost final product that has the potential to greatly improve the authentication of banknotes.

Currently, authentication of banknotes performed at point of sales by cashier or at payment stations is quite limited, which makes it easy to fool the system. With Sound of Intaglio™, we are able to detect the presence of Intaglio printing used on virtually all banknotes world wide - or to identify typical counterfeit printing processes such as raster offset print. Based on the presence or absence of these two processes and a couple of others, and regardless of note condition, we can determine whether the banknote is genuine or counterfeit.

To transform this algorithm into a final product, coverno worked in two directions, one towards point of sales (PoS) and another towards forensic analysis applications. The team currently focuses on developments for forensic applications. The demonstrator will consist of a flatbed scanner providing a high-resolution image of the banknote that is then analysed by the Sound of Intaglio™ algorithm. The evaluation is performed automatically and once done, a detailed report including measurements is provided on the authenticity of the banknote. This information is crucial for forensic analysers to, e. g.,

determine relationships between counterfeit types and provide evidence for court cases. The pilot product was unveiled at The Banknote Conference in Dallas in May.

“What started as basic research in 2007 ends up 10 years later in a tangible product with concrete application that will benefit a lot of governmental institutions from Central Banks to Federal police and more. As a scientist, this is very gratifying and makes me very proud of the work accomplished by the entire team that contributed to develop this product” explains Dr. Uwe Mönks, Managing Director coverno GmbH.

And this is just the beginning as the algorithm can actually be run on any system that provides an image of good enough quality of the banknote and includes processing power. So the possibilities are endless. For 2018 and beyond, the coverno team will finalise its first forensic demonstrator while further developing its point of sales model in parallel through a collaboration with a key stakeholder in the PoS and ATM market.

Johannes Schaede, Chief Technical Officer at KBA-NotaSys, concludes: “The collaboration with the University of Applied Sciences, Lemgo in founding this promising start-up is a great opportunity for our company. Today it results into a first new product that will enhance the security of banknotes in circulation from where it stands today, which will reinforce the position of cash as the most reliable and trustworthy mean of payment to use.”

↓ Jan-Friedrich Ehlenbröker, Jan Leif Hoffmann and Uwe Mönks from coverno who actively worked with Eugen Gillich on the development of the demonstrator

