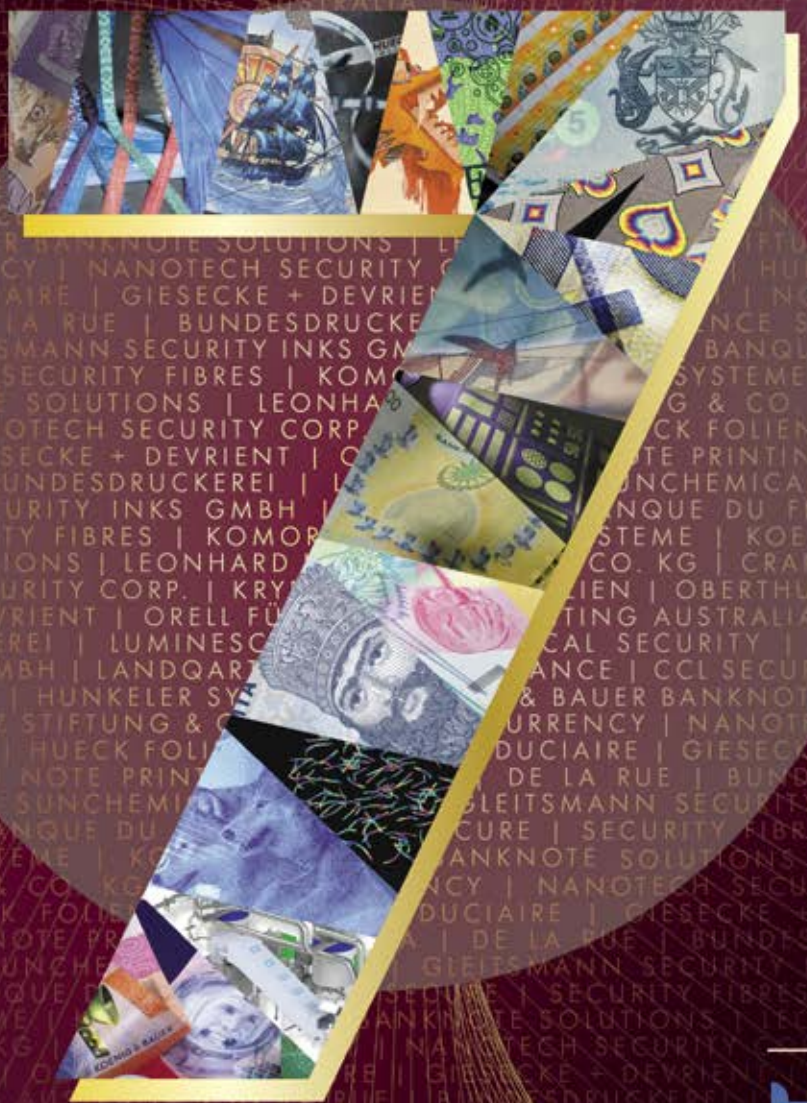
BANKNOTE TECHNOLOGY REPORT

BTR

ISSUE
07.21



Created by

BANKNOTE INDUSTRY NEWS

www.banknote-industry-news.com

KINETIC STARCHROME® – DOUBLY SECURE AND HIGHLY BESPOKE WITH TWO SECURE TECHNOLOGIES THAT COMBINE TO DISPLAY DETAILED IMAGES

CLICK OR SCAN

Spanish Language

CLICK OR SCAN

DE LA RUE

EXPERTISE, PROGRESSION, AND CREATIVITY

CLICK OR SCAN

EXPERTISE, PROGRESSION, AND CREATIVITY

DE LA RUE

In 2020 26 new banknotes and commemorative notes were issued that were **designed**, **manufactured** or contained De La Rue **security features**. These banknotes were varied and reflected the diverse needs and preferences of their issuing authorities.

Every banknote must meet a unique combination of parameters. Specification needs evolve over time and different combinations of different security features are required in different circumstances. We explore here the need for expertise, progression and creativity to ensure that banknote issuing authorities obtain the best banknotes for their needs.

PUREIMAGE™ ADVANCED HOLOGRAPHICS BRING ICONS AND SYMBOLS TO LIFE WHEN TITLED ON ANY ANGLE

THE BEST BANKNOTES

Banknotes represent highly advanced, technically sophisticated products. They can be used for thousands of transactions during their lifetime. They store value for as long as they are kept. They are available and free-to-use for virtually every person in the world.

Last year the banknote specifications that were designed and manufactured by De La Rue included the both the major banknote substrates (paper and polymer) and all three main security feature platforms (colour shift, holographic, micro-optic technologies, as well as combinations thereof). 38% included a **holographic patch or stripe**. 2/3rds were polymer banknotes. The 26 different designs and specifications met the 26 bespoke needs of their issuers.

Given the range of environments different banknotes circulate in and the varying needs of the banknote issuing authority, the definition of the "best banknote" varies by country and banknote denomination.

MULTIPLE FACTORS TO CONSIDER

The level of durability required will be influenced by factors such as the circulating environment and banknote handling habits. Functional requirements depend on how automated the cash cycle is and may consider specific user groups, such as the partially sighted. The importance of cost, environmental factors, aesthetic themes and the extent to which dual supply matters all need to be considered. For central banks with a secure print works the ease of manufacture and potential capital expenditure is also a factor.

The best route to achieve appropriate counterfeit resilience also varies by country, denominational value, public engagement, cash cycle attributes, the type and level of counterfeit threat. There are many instances where a simple windowed thread or a secure polymer window are more than adequate to protect a banknote.

Global banknote **counterfeit** rates remain so low that levels are typically measured in parts per million and the cost of counterfeit

banknotes is significantly lower than that of alternative payment fraud. Banknote issuing authorities are good at upgrading their banknotes frequently enough to stay ahead of the evolving counterfeiting threat, thus maintaining public confidence in the financial systems. The low counterfeiting levels are seen for banknotes with a range of specifications, suggesting there are multiple ways to secure a banknote, with several security feature technologies and substrate types proving to be successful. There is no single security feature that provides complete protection for every banknote. Instead counterfeit resilience is built up by layering security through the entire banknote.

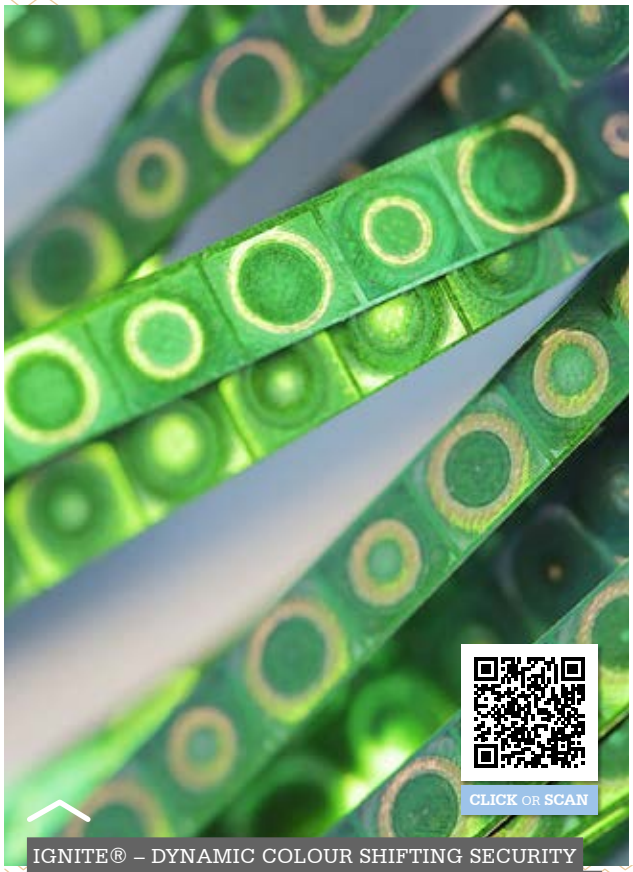
TECHNOLOGY AGNOSTIC EXPERTISE

Launching a new series of banknotes can be a once-in-a-career project. This project is often carried out in addition to the day-to-day activities of the issuing department. It is described as an extremely rewarding and memorable experience that can also be hard work. Technologies progress and the macro-economic environment changes with time and may differ since the last series was launched (for instance sustainability may be a higher priority than it previously was). There is often a lot for an issuing authority to consider.

In contrast to banknote issuing authorities, who refresh their banknote series every 7-10 years on average, De La Rue is continuously supporting multiple new banknote issuing authorities on such projects. Half of all currency issuing authorities around the world use a currency product from De La Rue. One third of all banknotes in circulation have been designed by De La Rue. Our experts continuously support new technology introductions globally. As an example, **SAFEGUARD®** polymer substrate has been successfully introduced into 15 external commercial printers and state printing works. Whilst new banknote series project only happen occasionally within an issuing department, De La Rue supports such projects on an ongoing basis.

NEXUS™ – THE WORLD'S FIRST MICRO-OPTIC EMBEDDED STRIPE, COMBINING THE EMBEDDED SECURITY OF A THREAD WITH THE HIGH IMPACT AREA OF A STRIPE

SAFEGUARD® ARGENTUM™ – HIGHLY REFLECTIVE INK INTEGRATED INTO THE POLYMER SUBSTRATE



IGNITE® – DYNAMIC COLOUR SHIFTING SECURITY THREAD, COMBINING TWO SECURE TECHNOLOGIES

The support available from De La Rue covers everything from concept designs and business case modelling through to banknote end-of-life recycling logistics. We use knowledge of global best-practice to help ensure projects run seamlessly. The design team brings the vision of the currency issuing authority to life, capturing the needs of the banknote and designing with manufacture and cash cycle performance in mind. Our counterfeit analysis highlights strengths and weaknesses of the existing banknote series and make recommendations in the context of the global trends and counterfeiting threats. Technical support is available throughout, covering everything from manufacturing trials to public education campaigns and **cash cycle analytics**.

Importantly, as a supplier of polymer and paper features De La Rue´s advice is technology and substrate agnostic, focussing on helping the currency issuing authority deliver their end vision and supporting decisions with appropriate analysis. Many central banks have begun to transition to polymer, citing is as cleaner, greener, more secure and more durable than paper banknotes. For others paper or a combination of polymer and paper remains the best solution for the foreseeable future.

PROGRESSION IN BANKNOTE SECURITY

Some of the fundamentals of banknote security remain unchanged over time - security is layered throughout the banknote and delivered via different combinations of features. A good security feature is easy for people and machines to authenticate but very difficult to replicate. It isn't enough to see 'something' that changes when tilting

a banknote – the public need to know precisely what to look for and so it needs to be easy to describe and remember.

Polymer and paper substrates both come with a good base level of security and are both manufactured in secure environments, requiring highly specialist skills and equipment. With polymer there are specific security inks and complex window formations that are integrated into the substrate and create new barriers to the more standard reproduction techniques. With paper banknotes even basic threads provide security because they are embedded in the paper (i.e. the paper forms around the thread during the paper-making process). Applied features, the effects within threads, integrated polymer substrate features, layers of secure print and additional machine-readable functionality further enhances the security.

Where the value of the banknote is low or where the currency is not a major target for criminals then a secure polymer window or a simple colour switch in a thread is more than enough to secure the banknote. However cost and environmental impact have become an emerging concern in recent years. SAFEGUARD® has helped here, with banknotes that last 2.5 times longer than paper on average and are readily recycled.

De La Rue's advanced threads use combinational technologies to increase the counterfeit resilience of banknotes. IGNITE® provides the ultimate dynamic colour shifting effect, with a wide viewing angle. KINETIC STARCHROME® provides a truly bespoke thread design for each denomination, with visible colour switch and holographic effects.

SAFEGUARD® HOLOGRAPHIC STRIPE, COMBINING CLASSICAL AND DIGITAL HOLOGRAPHY

Stripes have also progressed. For paper banknotes NEXUS™ is the first micro-optics stripe and combines the benefit of a large effects area with the embedded security typically associated with a thread. For polymer banknotes holographic stripes provide more secure and engaging art with effects that now allow users to engage with their smartphone torch and are highly responsive as the note is tilted.

DELIVERED WITH CREATIVE FLAIR

British innovation and design can be seen throughout De La Rue's products and services, especially the banknotes in circulation. It is why the **GEMINI™** security feature integrates into the banknote print and instantaneously brings an image to life under UV light. It is also why Argentum™ mirror-like shapes were developed for the SAFEGUARD® substrate.

Creativity goes beyond product design though. It is apparent in every improvement made and every problem solved. For instance, SAFEGUARD® has been upgraded to make it even easier to print on. We're also working to help central banks solve the challenge of small volume banknote waste recycling. Look out for more examples of De La Rue creativity in 2021.

DE LA RUE PLC

Dr. Nikki Strikkland
Head of Product Marketing
Email: nikki.strickland@delarue.com
Website: www.delarue.com