



DeLaRue

# Going Beyond

September 2020



NEXUS™: The next generation paper security feature

DESIGN: Creating the new housenote series

INTERVIEW: Assessing the risks of a cashless society

POLYMER: The stories behind switching substrates

SECURITY: Strengthening ultra violet security features

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# introduction

In recent months we have been spending our time differently. We have had no conferences, far fewer flights and have spent much less time travelling. Our focus has been on delivering during COVID-19, continued resilience in operations whilst meeting the needs of our customers and suppliers. We have also used this unusual time to reflect on what we can do to improve your service.



One improvement has been to make it easier to find the information you need. Our website has had a refresh and contains the latest information on our products, services, white papers, case studies and news. The user experience has been changed so it is now easier to find information.

We have also created some new content to help answer the questions we receive. See inside for details of our webinar which will take place in late October, which will explore why banknote issuing authorities are converting to polymer. Whilst we recognise that paper banknotes have an important role to play, we are finding that polymer is where we need to significantly increase our capacity and we'll explore why in the webinar. We'll also be joined by some central banks sharing their perspective about why they moved to polymer.

Our investment into paper security features continues. This month we have announced NEXUS™. It is an entirely new type of feature and an alternative to security threads. More information can be found inside.

If you'd like any more information on anything in this newsletter please don't hesitate to get in touch.

A handwritten signature in black ink, appearing to read 'Ruth Euling'.

Ruth Euling, Managing Director

# WRITING THE STORY OF THE NEW HOUSENOTE

*“Have nothing in your house that you do not know to be useful, or believe to be beautiful.”*

- William Morris

Over the past few months De La Rue has been working on a major new series of housenotes to showcase the latest upgrades and additions to our security features portfolio. Designing and manufacturing a new series of housenotes has many parallels with that of a new banknote series and is tackled with the same enthusiasm, rigour and depth.

Banknotes have symbolic importance, representing the identity of a nation at a point in history. Countries experience good times, difficult times and they adapt, grow and move forward. Housenotes are to De La Rue what a banknote is to a country, the new series had to reflect De La Rue's identity, ability and aspirations.

The design process started with the usual structured brainstorming and idea sharing exercises covering themes, styles and methods. Previous housenotes have

palaeontologist currently in the UK schools national curriculum), Stephen Hawking, Florence Nightingale, John Barbour, Thomas Burberry and John Herschel (invented the blueprint). Despite the remarkable contributions these people made to the world, we chose an individual who made the greatest contribution to De La Rue.

Thomas de la Rue's story is one of innovation, adaptability and expertise. Thomas' print innovations began when he capitalised on the Victorian passion for card playing, He created playing cards for every part of Victorian society using new, cost-effective dyes. His realisation that there was opportunity selling quality stationery to buyers of stamps led to the invention of an envelope folding machine in the 1840s and production of high-quality stationery. De La Rue printed the world's first perforated stamps in 1853.



featured the environment and historical characters who have made a big impact on the world. These types of themes continued to emerge with strong contenders on the themes of Constellations, Endangered Species, Habitats and Environmental issues. The ultimate decision was to choose “British innovators and experts in their field”. This theme lent itself well to the design considerations undertaken when a banknote issuing authority selects a person of significance for their banknotes.

Once the theme for the story was set, the lead character had to be picked. This decision was taken with the same care and deliberation that an issuing authority selects an individual who has made a great contribution to their country. There were many innovators and experts considered for the role, including Mary Anning, (a

The company's first banknotes were printed for Mauritius in 1860. In 1905 De La Rue purchased the Onoto pen patent from engineer and champion roller skater George Sweetser. Thomas developed the Onoto pen and it became a favourite of Winston Churchill, Japanese author Natsume Soseki and was used by King George V. Onoto pens are still highly sought after today.

Our founder was an inspirational character who built the business through focus, drive, unique ideas and innovations. His life's work resonates strongly within the company today and how we have learned to change, adapt and innovate. Our lead character's creative legacy sets the tone for what is known as the 1st Edition of the De La Rue Feature Series:

*1st Edition  
De La Rue  
Feature Series*

\*\*\*

NEXUS™

\*\*

Enhanced GEMINI

\*\*\*

PureImage™  
with

new effects

\*\*

New  
Kinetic Starchrome

\*\*\*

Argentum

\*\*

*Next generation  
holographic effects*

\*

Holographic Stripe on  
SafeGuard  
with

Depth

PureImage™

Kinoform

\*

Holographic Patch  
with

PureImage™

\*\*\*

Final feature list still to be  
confirmed.

*A modern company building on a proud  
heritage.*

The chosen style for the first edition series is “*traditional with modern elements and techniques.*” It utilises De La Rue’s ‘Thinking Beyond design’ philosophy. Every element has been chosen deliberately and serves a functional or design-led purpose. The style selected is visually striking, modern and sophisticated.

The series takes events from Thomas’ life and layers them into the design of the housenote the same way that details combine to support themes when designing a banknote. Some items include:

- ⦿ The recreation of Thomas’ image using existing artwork and computer imagery.
- ⦿ Le Miroir Politique – A Guernsey newspaper, Thomas’ first business venture
- ⦿ References to card suites
- ⦿ Seal and shape of envelope produced on De La Rue envelope folding machine
- ⦿ The geometric patterns of Crystal Palace’s ironwork from the 1851 Great Exhibition
- ⦿ Serrated edges on the back of the note echoing the first perforated stamps
- ⦿ The Onoto fountain pen, the first self-filling fountain pen

The security features and effects selected for the series were all chosen after carefully considered market research and direct feedback. We looked at current trends and evolving issuing authority needs in order to present a set of features and effects that are appealing, secure and durable. The new effects, colour ranges and security features present in the housenote provide extensive choice for issuing authorities considering their future new banknote series

Whilst there are some familiar product names appearing, all the features are new and different to what has been seen before.

The 1st Edition Feature Series combines De La Rue’s creativity and attention to detail with a bold forward step in how we create, design, specify and manufacture our housenotes. The features and effects are the first in a series of products which are part of the next generation of De La Rue security technology.



# ULTRA VIOLET SECURITY

## How UV print features are becoming more important in the fight against counterfeiters

The global threat from counterfeit banknotes remains low. This is helped by commercial banknote issuers and central banks taking timely decisions to upgrade or introduce of new banknotes that utilize the latest innovation in banknote design, print, substrate and security features. However, even one counterfeit banknote can be a cause for alarm for a banknote issuer and understanding trends in counterfeiting remains essential in making decisions that enable banknotes to stay ahead of the counterfeiter. De La Rue's anti-counterfeit team have nearly 50 years of combined experience between them and examine counterfeit notes from around the world on behalf of note issuing authorities, using their knowledge to maximise the counterfeit resilience of De La Rue's currency products and to provide expert support to issuing authorities.

Over the past two decades an increasing proportion of counterfeit notes have shown attempts to go beyond simulating the standard print features, often targeting the major public recognition feature for simulation

frequently see UV print features simulated. Figure 1 shows the increase in UV dull paper over time.

In their capacity as expert witnesses for the UK courts the anti-counterfeit team examine around 2,500 Scottish and Northern Irish counterfeit notes every year. In the last 4-5 years a trend towards more counterfeits being based on UV-dull paper has emerged, suggesting that the role of UV print feature is becoming more important. In 2016 only 7% of the counterfeits examined were on UV-dull paper but that has increased to 80% by the first half of 2020. This coincides with the counterfeiters increasingly simulating the UV-printed features.

As an example, the previous Bank of Scotland £20 banknotes were printed with invisible barcodes that fluoresced green in UV-light. De La Rue's anti-counterfeit team observed simulations of varying quality, ranging from crude and hand drawn to screen printed. In many cases the simulation UV colour was not the same UV colour as the genuine

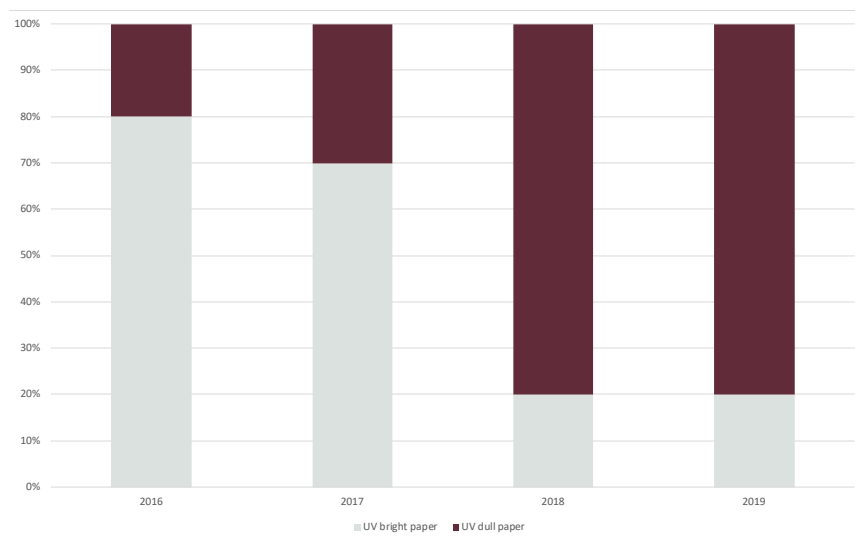


Fig 1. Increasing proportion of Counterfeits on UV Dull Paper

and focusing on the obvious visible parts of the banknote. Many counterfeits have used commercially available paper, meaning that the entire note glows brightly under UV light, and it has been less common to see attempts to simulate level 2 security features. Whereas the majority of counterfeit banknotes now routinely show attempts to simulate the major public recognition features (albeit it often not convincingly due to the technical challenges associated with such features) the team less

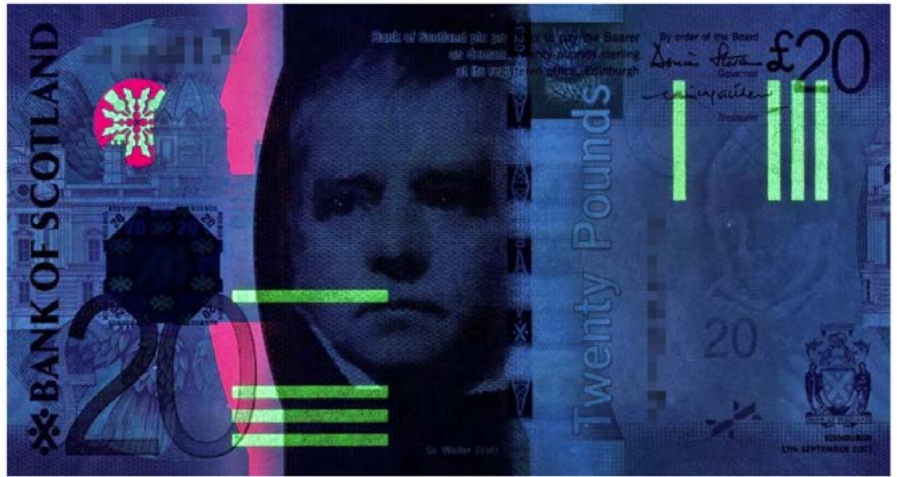
feature; blue instead of green was commonly observed and counterfeiter often added detail that was not on the genuine banknote, such as the denominational value of the banknote. (See figures 2 & 3 for examples)

The trend towards a growing proportion of counterfeits on UV dull paper suggests an increasingly important role for UV security features in the fight against the counterfeiter. The fact that many attempts to simulate UV

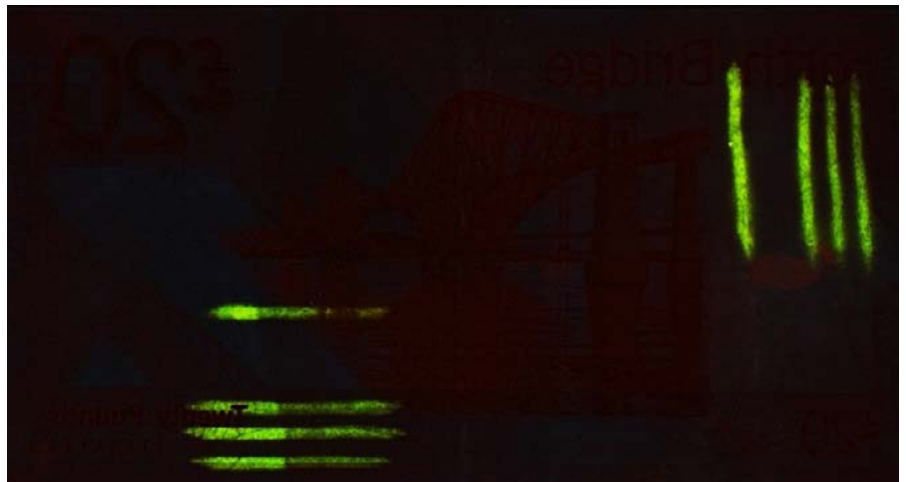
counterfeits on UV dull paper suggests an increasingly important role for UV security features in the fight against the counterfeiter. The fact that many attempts to simulate UV features are poor quality suggests that the counterfeiter thinks having ‘something’ in place is good enough. This points towards more visually intuitive UV features, like GEMINI™, playing an increasingly important role. More obvious patterns or images in UV light have a strong retailer education story and are more memorable. They also have the benefit of being harder to simulate; for instance, GEMINI™ requires two UV inks that have to be tightly registered to each other, with specific design considerations for the feature to work. Registering invisible inks represents a challenge to the counterfeiter. If simple UV features simulations are poor then GEMINI™ represents a much greater barrier to counterfeiting and any counterfeits are more likely to be noticed. This may explain why GEMINI™ is one of De La Rue’s most popular security features and has hardly ever been counterfeited.

**KERRE CORBIN & DUNCAN REID**

*This article first appeared in the August 2020 edition of Currency News.*



*Fig. 2 Barcodes on the previous Bank of Scotland £20 paper banknote viewed in UV light*



*Fig. 3 A counterfeit simulation of the barcodes on the previous Bank of Scotland £20 paper banknote*

## Welcoming Adeline Daly to the Currency Leadership Team



Adeline Daly joined De La Rue as Transformation Director in August and holds overall accountability for delivering the Transformation workstreams in Currency.

She will work with the workstream owners to successfully implement the investment in our capability and capacity for the benefit of our customers.

As a key member of the Currency Leadership Team Adeline will develop ongoing and new transformation plans which are essential to ensure continued market leadership for De La Rue Currency.

With a career that began in the Irish Naval Service and has included working as an electronic engineer with Phillips in the Netherlands then in particle accelerator physics in the UK, Adeline now specialises in project management, helping transform businesses and operations. She has worked with leading aerospace and defence organisations in project management roles for the last 15 years.

Adeline holds an MBA from Imperial College, London and is a member of the Association of Project Management where she has led the Women in Project Management Specific Interest Group for several years.

# Assessing cashless risk

De La Rue Currency interviews Sabrina Rochemont, a member of the Cashless Society Working Party to discuss her opinions on the societal impact of a cashless economy.



**For the benefit of our readers, please could you give us a brief background to yourself and your relationship to the cash industry?**

I am a volunteer member of the Cashless Society Working Party, hosted by the Institute and Faculty of Actuaries (IFoA), the chartered professional body for actuaries in the UK.

Its research delivers a neutral, analytical assessment of developments to comprehend benefits, risks and issues of a cashless society at a global level, in the public interest. It provides insights into specialist economic topics, and identifies opportunities to learn from international experiences, and to adapt public policy.

The Working Party has no vested interest in the cash industry. The views expressed in this contribution are my own, based on my research and thinking, and not necessarily those of the IFoA or any other organisation or employer.

**What previous work have you published on the topic of cashless payments and potential impacts?**

Our first [working party] paper established a register of risks and issues associated with the transition towards a cashless society, compiled from data in the public domain. I realised (in 2017) that no-one seemed to be talking about the environmental impact of payments, despite the growing

*“I feel strongly about cash as a public good and as a token of freedom.”*

concern about climate change.

A literature review revealed scarce research, other than banknotes; life cycle assessments from the Bank of England and the Swiss National Bank are reference materials for polymer and paper notes. The De Nederlandsche Bank evaluated the impact of debit card payments.

I see closing the knowledge gap as the first step required to improving performance and mitigating the effects payments have on the environment.

**Cashless payments rely on a transactional business model and need significant infrastructure. Does such a system offer significant benefits to the retailer and customer?**

We are experiencing a fundamental change in the use of money, in the UK, shifting from the dominance of cash as a public good that is financed centrally, to an expanding and increasingly complex ecosystem of commercial cashless payment solutions that consumers (indirectly) or businesses (directly) pay for with each transaction. The impact is different for each stakeholder. Retailers have to weigh up the costs of using cash, such as: counting up, making trips to a bank if available, and the associated risks, time, and insurance costs of handling cash, compared to acquiring and merchant fees. Customers in most developed countries are charged indirectly for each electronic transaction, as the cost is borne by retailers as part of their overheads. Users of mobile money in developing regions pay

directly for fees above certain thresholds for peer-to-peer transfers.

Several countries are now studying the possibility of issuing digital cash, known as Central Bank Digital Currency (CBDC). This will enable the public to have access to a digital central bank liability. China is piloting their digital currency in some provinces, and other countries are exploring designs. The Bank of England has been consulting over a model that would see the CBDC distributed to the public through payment service providers, as a central bank is not equipped to manage retail accounts. This would mean the public and retailers would pay transaction charges for this digital public good.

**How do you think societies would cope without access to cash?**

A number of risks and issues are associated with the loss of access to cash. As part of our research, we identified 21 of these, including the environmental impact. (Figure 1). Each of us is sensitive to different aspects; I feel strongly about cash as a public good and as a token of freedom. Also, the change towards digital payments and a digital economy more broadly is increasingly excluding people in developed countries, leaving people behind. But this is avoidable, in situations where cost is the barrier to access, as emerging markets have shown with mobile money and the development and distribution of basic smartphones. This requires political will to manage these risks and issues throughout the transition.



## Cashless society: risk assessment

Issues	Risks
Hidden agendas	A cashless society may not live up to its promises
Trust in banks	Displacement towards alternative means of payment
Trust in governments	Totalitarian regimes
Economics of money	Sovereignty risks
Financial Exclusion	End to the right of a private life?
Change leadership	Innovation marketplace and user experience
Digital economy readiness	Lack of competition on payments market
Security of transactions, data and biometrics	Excessive reliance on technology
Social value of cash	Politics vs innovation
Removing cash may stall the economy	Financial stability
Environmental sustainability	

Fig 1: "A Cashless Society: Benefits, Risks and Issues", IFOA, 2017 - 2018

### **What is your opinion on the public's comprehension of the environmental impact of cashless payment systems?**

Generally, I perceive that the public's comprehension of the environmental impact of their consumer choices is limited to the tangibles, such as packaging, waste recycling and means of transport.

The revelation of the energy use of bitcoin mining seems to have had limited effect, as it probably would not have discouraged proponents from transacting bitcoin or other consensus-driven cryptocurrencies. It has provided an additional argument for the detractors against its adoption, but the topic has remained confined to mining bitcoin, and the interest was limited in time.

The lack of content on this matter suggests that the public has yet to come to terms with the fact that our convenience and choice of solutions have consequences for the environment. Education will be possible once objective and thorough research on the environmental impact of payment systems becomes available.

### **Would emissions targets offer any benefit to curbing carbon emissions from data centres and individuals such as bitcoin miners?**

The measurement of the impact for each component of the electronic payment supply chain may lead to some surprising results. Data centres have bad press, as they consume so much power. However, if we were to evaluate the productivity for each asset type instead, based on the environmental cost per transaction, I suspect the cumulative emissions of ATMs, smartphones and point-of-sale terminals might prove more onerous than data centres.

### **What could be done to mitigate the environmental cost of bringing cash into the cash cycle?**

The introduction of polymer notes was a great step towards the improved sustainability of cash payments, because banknotes are kept in circulation for longer, but they still need to be physically transported and dispersed. The Wholesale Distribution Steering Group has included the minimisation of the environmental impact of the wholesale distribution of cash as

a success criteria as part of their UK consultation of the ecosystem for a utility model.

The consultation does not however seem to consider the potential for ATMs to be upgraded to more energy efficient cash recycler models, which would keep cash in circulation in an area for longer periods of time.

Newer, more efficient technology could, to a certain extent, improve the productivity of ATMs. As this would involve upgrading ATMs, further opportunities may be considered, such as repurposing ATMs into virtual branches in enclosed and secure commercial premises, such as petrol stations or post offices.

Offering enhanced functionality and multiple services. Some booths may enable customers to pay in or withdraw cash, access online banking, as well as contact their bank by secure video link for more complex transactions. Other financial services could be offered for purchase, such as insurance, investments, and payment of utility bills.

Such high security terminals could help address the closure of branches and improve the ability

## Cashless risk ctd.

of rural customers to access a wider range of services. Costs could be leveraged across multiple industry players for a more sustainable model.

### **Are governments better adopting a pro-active stance to regulate the adoption of cashless technology and the influence of technology corporations who drive such technologies?**

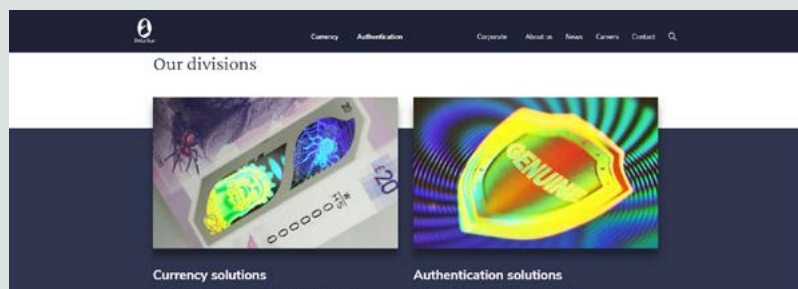
Developed countries have been sleepwalking into a cashless society, whereas governments in emerging markets have been proactive in their development goals. Business has brought phenomenal levels of innovation in payments; regulators by nature follow the curve, but hardly anticipate it, although the Libra announcements in 2019 jolted them into shock, then coordinated action.

Technology by itself is unproductive without other components of services, i.e., processes and people. Many countries provide regulatory sandboxes to enable experimentation and provide a safety net for innovators and consumers. Let's remember that innovators also require regulatory certainty and stability to develop. Governments need the innovators for growth, employment, and competitive advantage.

### **What are some of the most important drivers for the retention of cash in an environment of multiple payment methods?**

Central Banks will support the ongoing provision of cash, as long as consumers can access it, choose to use it and businesses accept it. While many variables influence these choices over time, cash services will have to adapt their economic model and demonstrate the ongoing value of cash.

## De La Rue website refresh goes live



Our website has been refreshed and is full of useful information for central banks, banknote issuing authorities, governments and brand owners.

Please visit [www.delarue.com](http://www.delarue.com) to find out more about the latest industry information, as well as the products and services available.

Our site has been designed to help you understand how our expertise can help you secure your banknotes, documents and goods

against counterfeiting and illicit trade.

A collection of case studies, white papers, newsletters and other articles are available on multiple topics ranging from the latest in security through to the impact of COVID-19.

We hope it provides you with what you need, if you have any questions, please [contact us](#).



### **Have you considered that banknotes may benefit you indirectly?**

*The need for the unbanked, underbanked and vulnerable members of society to have access to cash is well reported. Billions of people around the world rely on cash and it is important even when payment choice exists. For instance the Access to Cash UK study reported that 8 million adults would struggle to cope in a cashless society.*

*There are also indirect benefits to many if cash is available as a payment choice.*

*For society the act of issuing banknotes can generate funds for public finances and tax payers (via seigniorage - see our post on 9th August).*

*For some individuals cash is there "just in case" - countries who experienced a recent surge in banknote demand have demonstrated this reassurance is needed. Cash also provides payment choice, which is important in its own right and brings other benefits. Importantly, it is free to use and provides competition to other payment methods, helping keep fees down.*

*For businesses cash helps avoid hidden fees and minimises the risk of increasing payment fees. It is also instantaneous, thus helping businesses that are struggling with cash flow.*

*More examples exist. Banknotes continue to provide indirect benefits to people that they may not realise.*

Posted on 19th August, 2020.

# NEXUS™

## Creating a new product category for the next generation of paper banknotes

On the 17th June 2020, as part of the publication of our 2019/20 financial results, De La Rue announced the Qatar Central Bank will be the first central bank to issue their next generation security feature NEXUS™. No more information was provided. Currency News noted the name NEXUS™ means a thing of the greatest importance and an inter-connection, going on to correctly speculate that NEXUS™ alludes to a strongly integrated public recognition feature.

NEXUS™ exists within a new product category, “embedded stripe”. The stripe feature is embedded into the paper, providing the security and durability benefits associated with existing De La Rue security threads. The movement and depth across the stripe enables easy public recognition. This development represents a notable development in banknote security threads,

*“We consider NEXUS™ a game changer and the first of our next-generation of security features”*

printed features and applied features. The best public recognition security features are easy for the public to authenticate and nearly impossible to counterfeit. Larger security features with an impactful effect are easier to recognise than smaller effects. The act of embedding a security feature into paper greatly increases counterfeit resilience; most paper banknotes use a security thread for this reason.

Alan Newman, Product Director Currency told Currency News “We are very excited about NEXUS™. The embedded stripe format combines the strong visual effects of a wide stripe and the integration into the substrate of a thread. We consider NEXUS™ a game changer and the first of our next-generation of security features.”

In paper banknotes it is noticeable when a paper feature is actually embedded in the paper; the act of embedding it requires specialist equipment and knowledge only found in a finite number of sites around the world.

Combining large public recognition areas and advanced embedded technology creates a new product format that incorporates the best of paper security threads and applied stripes. Yet for decades the challenge for banknote and paper manufacturers has been finding a way to embed an impactful security feature in paper whilst simultaneously showing an area bigger than a typical thread window.

De La Rue first demonstrated the robustness and security of embedding a narrow stripe in paper with the OPTIKS™ thread in 2006. Since then De La Rue has provided many central banks with a highly secure window feature, protecting millions of notes in circulation. This innovation was recognised when OPTIKS™ received the Queen’s Award for Enterprise in 2013.

Over time, expectations from the market changed and stronger visual effects such as perceptions of depth, switching and movement became popular. To date, no security provider was able to combine the durability and security of embedded thread technology with the size and visual impact of micro-optic effects across an entire stripe. This technology places NEXUS™ in its own security feature category of ‘embedded’ stripe.

The Qatar Central Bank continues to lead the way by being the first central bank to issue NEXUS™. It is currently in the pre-release stage, being selectively shown to a small number of central banks and having completed two full-scale production runs. It will move to the early-release stage over the coming months and be fully available by summer 2021.

# UK issuing banks: polymer transition

Foreword by Damian Kwiatowski, Sales Director – Central Banks, Currency.



In December 2013 the Bank of England announced that the next £5 and £10 notes would be printed on polymer, replacing the cotton based notes in circulation. This was the start of the UK banks mass transition to polymer. Since 2013 the Bank of England has upgraded its £20 banknote to polymer (co-circulating on SAFEGUARD® and GUARDIAN® substrates), with the £50 to follow.

The Scottish and Northern Irish Banks also embarked on the same journey and have systematically upgraded their banknotes to SAFEGUARD® polymer, starting with the lower denominations. The banks have managed all the practical challenges central banks typically face when changing a banknote specification. They have also had the additional project management challenges associated with coordinating efforts across the UK.

Representatives of the Royal Bank of Scotland, Ulster Bank, Danske Bank, the Bank of Scotland and The Association of Commercial Banknote Issuers kindly agreed to answer some questions about transitioning to polymer in this article below. We thank them for taking the time to share their experiences and wanted to reiterate publicly what a huge honour it has been to have been involved in the design and manufacture of their SAFEGUARD® banknotes which we regard as works of art.

**“Careful consideration needs to be given to a roll out plan, customer and retailer education.”**  
- Danske Bank

## Why did you choose to move to polymer?

Royal Bank of Scotland: “RBS chose to move away from the traditional cotton notes and move to polymer due to public demand for longer lasting, more environmentally friendly and cleaner banknotes”

current banknote family to issue smaller polymer banknotes to align with the BoE programme and roll out.”

Ulster Bank: The majority of our customers place security and environmental issues as a top priority. We made the decision to move to polymer which provided a more environmentally friendly and secure banknote.

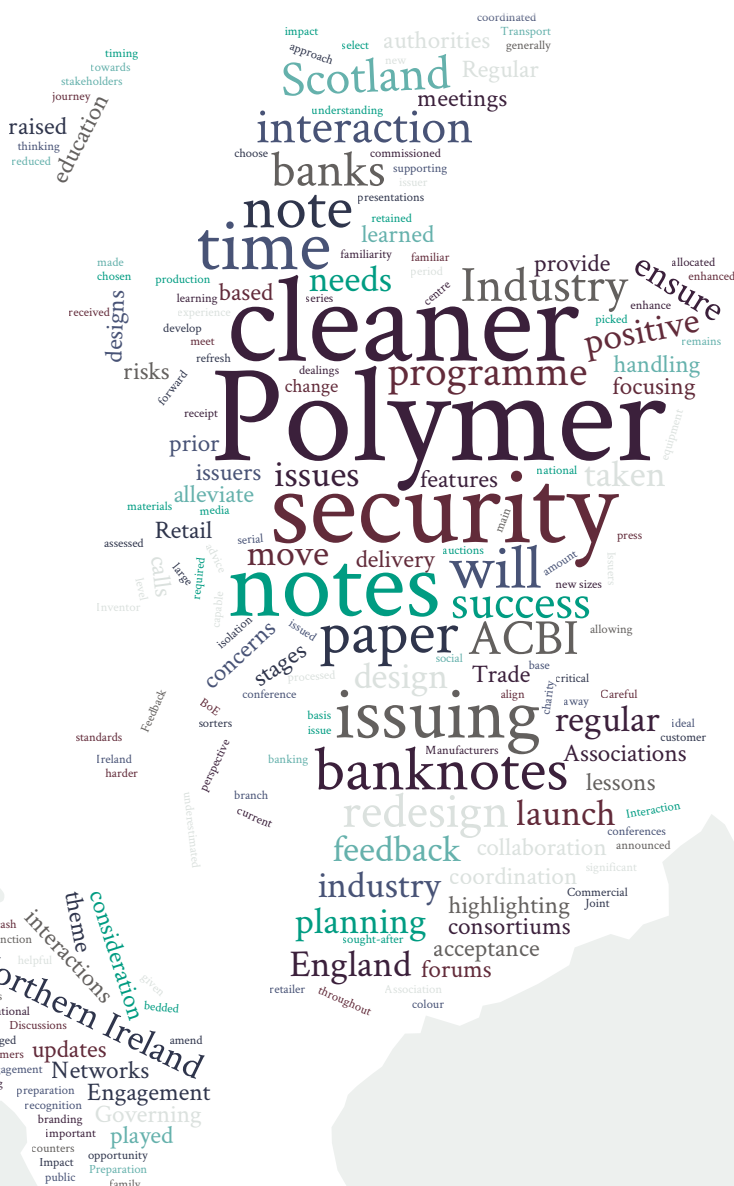
Danske Bank: “The banking industry has been moving towards polymer notes as they are generally cleaner, harder to counterfeit and more hard-wearing than paper notes. The time was right for us to refresh our note design and being part of the wider UK change, it was an ideal opportunity to redesign our notes and enhance their security features using polymer.”

## What theme did you select for the banknotes?

Royal Bank of Scotland: “The theme selected for the RBS series of notes was the “fabric of nature” which was chosen by the people of Scotland. This was achieved through a series of working groups formed by the Scottish public where they were asked what they would like to see on their banknotes “

Bank of Scotland: “Bank of England announced [in December 2013] that the next £5 and £10 notes would be printed on Polymer... Bank of Scotland assessed the impact from an Industry perspective and commissioned a programme to amend its

Danske Bank: “The base theme for the note remains as per the paper series and we have taken the designs forward based



on familiarity of the paper notes. Sizes have been reduced to meet the industry standards and security and design features have been added or enhanced but customers will still be familiar with the colour schemes, branding and the main portraits...The Inventor Series has been retained."

Ulster Bank: "The theme selected for our polymer series was the "Living In Nature" which was chosen by the people of Northern Ireland and flows through our polymer series. This design theme reflects a softening, ambitious and forward looking people."

### **What has the feedback been from the public on the polymer banknotes issued so far?**

Royal Bank of Scotland: "The feedback so far has been very positive. Firstly with the polymer notes themselves and the design of the RBS series of banknotes. There were concerns from the public surrounding the newness of using polymer but once the general public started to use these notes they soon found them easy to work with and soon became accustomed to handling them".

Danske Bank: "Feedback has been positive based on sources examined with no acceptance issues raised with us to date."

Bank of Scotland: "Positive feedback on our designs with coverage of each note launch picked up by the national press and a lot of positive comments received on social media. We also raised a significant amount of money for our chosen charity partners with auctions of sought-after serial numbers."

Ulster Bank: "Given the limited time the notes have been in circulation in Northern Ireland the initial reaction has been very positive. The portrait design of the banknotes has certainly been a prominent feature and most talked about by the public in a constructive manner."

Association of Commercial Banknote Issuers (ACBI): "Nothing but positive feedback in our dealings with the public."

### **What has been your experience of moving to polymer? Would you have any advice for other issuing authorities thinking about making this move?**

Royal Bank of Scotland: "It certainly was a positive experience. As always, there will be challenges when moving to something new, however as long as there is sufficient time taken for preparation, care taken with the design of the banknote and I believe most importantly, public education has to be the main priority."

Danske Bank: "Preparation is critical through the design and production phase and the time taken to get to production should not be underestimated."

Adequate time needs to be allocated to allowing Banknote Equipment Manufacturers to take receipt of exemplars, develop software and roll out to hardware for banknote acceptance.

Careful consideration needs to be given to a roll out plan, customer and retailer education.

Impact on branch and cash centre note counting equipment needs consideration to ensure counters and high speed sorters are capable of handling the notes in isolation and when processed with paper notes.

As an ATM operator, our experience has been that an extended period of time is required to get all machines bedded in to handling the new notes."

### **What level of interaction and coordination has there been between with other UK issuing authorities? How did that work?**

Royal Bank of Scotland: "Whilst undertaking the move toward polymer there was constant dialogue between all the note issuers within the UK as well as the UK central bank in a series of audio and face to face meetings. This covered off note size, colour, design, security features and working with Banknote Equipment Manufacturers are all important. There have to be open and honest conversations whilst of course not crossing into commercial activities when information sharing."

Danske Bank: "Industry engagement has been an important and helpful part of the change with coordination and interaction through Bank of England and ACBI in the form of Group and 1-2-1 meetings, forums and conferences. This has been helpful in planning, understanding timing and learning from other issuer experiences. It has also encouraged a coordinated approach to public education and supporting banknote recognition during the move away from paper."

Bank of Scotland: "Engagement and collaboration with other issuers will alleviate concerns and provide regular updates, interaction with Trade Industry Associations, Retail consortiums, Transport Networks and Governing Banks will ensure there are no surprises prior to launch. Regular conference calls with other issuing banks during the planning and delivery stages were held focusing on lessons learned and highlighting risks or issues to date, these interactions played a large part on the success of our programme."

ACBI: "The note issuing banks have had various discussions throughout the polymer journey via ACBI. Polymer meetings have taken place on a regular basis between the issuing banks in Scotland and Northern Ireland. Discussions included topics such as interaction with other stakeholders, the preparation of educational materials in conjunction with De La Rue and the updating of both the CSCB and ACBI websites. Joint presentations have also been made at Bank of England industry forums."

# CARDTRONICS UK: Integrating polymer banknotes into the cash cycle



Following the UK's migration to polymer, we wanted to hear about the experiences of some of the logistics providers responsible for putting new polymer notes into circulation. Cardtronics UK kindly agreed to an interview sharing their experience of the UK's migration to polymer banknotes. De La Rue spoke to Dean Shaw, International Operations Director.

Dean has direct responsibility for all Cardtronics' ATM operations (fit, fill and fix) in the UK, Ireland, Germany, Spain, Australia and New Zealand. He has worked in the cash industry for almost 20 years and prior to joining Cardtronics in September 2015 held a number of Global Operations roles at De La Rue, Talaris and Glory.

**For the benefit of our readers, would you be able to give us a brief background as to who Cardtronics are and the role you play in the UK cash industry?**

Cardtronics is the world's largest ATM operator, delivering 2.6 billion ATM transactions through 285,000 ATMs located in ten different countries. We are the largest ATM operator in the UK, with over 16,000 ATMs providing access to cash to communities across the broadest range of postcodes. We provide an end-to-end ATM service for a spectrum of retail customers, which covers all aspects of the ATM life cycle from installation, through to transaction processing, cash replenishment and maintenance.

**What impacts did the Bank of England's introduction of the polymer notes have on your ATM operations?**

As a major dispenser of cash to consumers, we have worked very closely with the Bank of England on the introduction of new £5, £10 and £20 polymer notes over the last few years. The introduction of polymer notes required major hardware and software upgrades across a significant proportion of our ATM estate. My team led the way in preparing for the change, testing the upgrades and successfully rolling them out across our estate with minimal disruption to our service.

The most significant challenge with the implementation of polymer notes is in the dispensing mechanism; the new notes have a tendency to stick together which can cause jams in the machine. As the notes

***"...the quality of notes in circulation has definitely increased."***

are used and recycled this problem soon disappears. We were able to mitigate the impact of this issue by pre-sorting of new notes in order to reduce their "stickiness". Now that the notes have passed through this first stage of their lifecycle, we have not seen any other issues and the quality of notes in circulation has definitely increased.

**For a short time, the UK was dispensing both paper and polymer substrates from its ATMs. What were some of the operational changes that had to be made dispensing dual substrates through your ATM network?**

Our ATMs were managed on a proactive basis, meaning they were either dispensing paper or polymer notes from a single cassette - rather than dispensing a mix of paper and polymer notes. Our dedicated cash management team closely managed this project in order to ensure that the change-over from paper to polymer was handled effectively. This is primarily a logistics issue, but with a large and complex ATM estate such as ours it is a significant challenge.

**What changes have you seen in how polymer notes move through the cash cycle, compared to the paper equivalents?**

We have not encountered anything unusual with the polymer notes but the reduction in transactions resulting from the COVID-19

lockdown has meant that the new £20 notes (that were launched in February 2020) have taken longer to pass through the cash cycle and become more worn than their £5 and £10 predecessors.

**How has COVID-19 impacted cash withdrawals?**

The lockdown created a much publicised drop in withdrawal volumes which was hardly surprising given that people were not leaving their houses and many retail and leisure businesses had closed. However, what often goes unreported is the increase in average transaction value. Consumers were visiting the ATM less often but withdrawing considerably more cash at each visit. Since the initial lockdown period we have seen a steady increase in the number of ATM transactions. Indeed, the most recent LINK figures show that withdrawal volumes are back up to 70% of this time last year. This shows the resilience of cash usage in the UK and the fact that people still value cash as a payment type and want to have a choice of how they pay.

**Whilst there is no evidence to support the statement, there is negative press that "cash carries viruses" Do you think this opinion will have a longer-term impact on cash usage in the UK?**

The cashless lobby have used the pandemic to promote the groundless story about the safety of cash. Indeed, the WHO released a statement in March clarifying that cash was no less safe than any other surface in terms of the transmission

of coronavirus. There has been a worrying trend in businesses moving to non-cash payments but we are seeing a return to cash as retailers realise the importance of cash to their customers and their business. The refusal of some businesses to accept cash has a bigger impact on those most vulnerable in our society,

#### **framework?**

Cardtronics has frequently been a leading innovator in the ATM industry, introducing technologies and processes which have minimised costs and limited environmental impact. Our cash in transit (CIT) business operates on a 'just in time' basis which means that we only go

*“Cash remains a vital part of the world economy with the global volume of cash being dispensed continuing to increase every year.”*

and this will have far reaching impacts for many. Consumer choice must be protected to ensure we retain the freedom to pay however we choose, as well as protect the 8 million in society who rely exclusively on cash.

***When measuring the environmental impact of the cash industry, logistic operations and 'always on' ATMs are cited as two of the largest areas of carbon emissions. What do you think the cash industry could do to implement more sustainable technologies for cash cycles operations? Would any change in approach require a regulatory***

to an ATM when it absolutely needs to be replenished. This approach has led to a significant reduction in the volume of ATM CIT visits that we have made over the last few years.

Over the last two years we have introduced cash recycling in our CIT depots which reduces the requirement to trunk cash back to the vault cash providers. Most recently, we introduced a virtual cash centre strategy which enables us to operate our CIT vehicles directly from our vault cash providers' facilities. These approaches have reduced our vehicle-mileage and reduced our environmental footprint.

#### **What do you think the cash industry will look like in 2030?**

When I joined De La Rue in 2001, my father asked me why I was joining a cash-based business when it would soon be replaced by credit cards, debit cards and cheques. I explained to him at the time that I felt cash would continue to be in circulation for a significant time to come.

Fast forward 19 years and my statement from 2001 still stands. Cash remains a vital part of the world economy with the global volume of cash being dispensed continuing to increase every year. Whilst there will certainly be changes to our payments ecosystems over the next ten years, cash will remain an important payment instrument. Why? Because it holds significant importance in our culture, it is relied upon by millions for its security, portability, efficacy, and as a simple means of budgeting. Moreover, it is crucial to our freedoms and will be a significant factor in protecting consumer choice. This is why Cardtronics are champions of cash... because it matters.

## **De La Rue Malta takes initiative on energy efficiency**

De La Rue has partnered with the Maltese Energy and Water Authority through the Energy Efficiency Partner Initiative.

We carried out an extensive exercise whereby existing lighting was replaced with more energy efficient lighting solutions. Through this exercise, we reduced our annual energy consumption by 630MWh. This is equal to the consumption of around 140 households.

De La Rue also introduced cool roofs

which have lowered indoor temperatures by as much as 2°C and reduced the cooling demand for the building. The chilling system has also been upgraded to be more energy efficient.

We aim to further our improvements in energy efficiency with the aim of enhancing competitiveness and ensuring the least impact on the environment.



## **Upcoming events**

### **Housenote: features and effects Early October**

Introduction to the new features and effects chosen for 1st Edition Feature Series.

More details will be made available soon.

### **“Why Central Banks Choose Polymer” Late October**

The first in a series of De La Rue webinars hosted by Reconnaissance.

Central banks share their experiences of polymer migration.

Details on how to participate will be made available soon.

## About De La Rue

De La Rue provides governments and commercial organisations with products and services that underpin the integrity of trade, personal identity and the movement of goods. Our market leading Currency Division provides fully finished banknotes, secure polymer substrate and banknote security features to half of central banks and banknote issuing authorities around the world.

De La Rue is the largest commercial printer of banknotes, producing up to 7 billion banknotes per year for half the issuing authorities in the world and designing a third of all banknotes in circulation. Our printing facilities are in Sri Lanka, Kenya, Malta and the UK. In Sri Lanka and Kenya the operations are joint ventures with the governments of those countries, contributing to the local economies and providing the benefits of local banknote supply.

Our global manufacturing footprint provides flexibility, contingency and decades of expertise associated with how to print a diverse range of banknotes globally. This combines with exceptional and seamless product design to ensure central banks have world leading banknotes to be proud of.



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