



DeLaRue

CURRENCY

Functional Features

ENHANCED GEMINI™



De La Rue Currency

We provide banknotes that central banks and issuing authorities can be proud of.

More than half of central banks, banknote issuing authorities and state printing works around the world choose De La Rue. We provide market-leading security features, polymer substrate and fully finished banknotes.

De La Rue banknotes are more than just currency – they are secure, functional and inspiring products that countries can take pride in. They represent the very best of British design and innovation by capturing the richness of the cultures they represent with originality and creative flair.

Today, De La Rue is a progressive global company and international manufacturer, building on a heritage of customer focus, invention and expertise. We value our role as a trusted and long-term partner to banknote issuing authorities and respect this role by striving to offer the best products, support and services via a seamless experience from start to finish.

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MASK™ ON
PAPER



Functional Features

De La Rue Currency has created the most diverse and comprehensive feature portfolio commercially available.

Functional features enable a banknote to “work better” when it is in circulation, facilitating the circulation of that banknote whether it is held by a member of the public, placed into an automated note acceptor or is travelling through a high speed sorting machine. By layering security features throughout the banknote, this enables recognition and authentication at different points in the cash cycle.

Functional features offer security and operational benefits and support the physically larger and visually striking primary and secondary features.

They enable ease of use for the visually impaired and can be visual, machine readable or covert. Functional features offer flexibility in their selection and application and can be used to complement design elements and motifs across a series. Functional features form an essential part of the layered security for circulating banknotes.

Functional features

Explained

Built to be used

Functional features are a mix of feature types for both paper and polymer substrates which offer usability benefits and layers of authentication to the different handlers of banknotes throughout the cash cycle.

Different features offer benefits to members of the public, machine authentication and cash processing equipment. Some features such as Enhanced GEMINI™ can be used to complement the overall design and providing engaging authentication methods. Other features provide benefits to the visually impaired, machine or teller authentication or provide a means of covert authentication.

Inclusion of this functionality helps increase acceptance of the new notes and technical appreciation of the elements selected.



Layered security

Effective banknote security uses layers of security features, each of which can be categorised into different levels.

Level 1

Overt features which are viewable by the public. These may be checked without using additional equipment.

Level 2

Hidden or machine readable features which require a device to inspect the banknote.

Level 2a

Hidden features that can be detected using a device such as a magnifying glass or ultra-violet light.

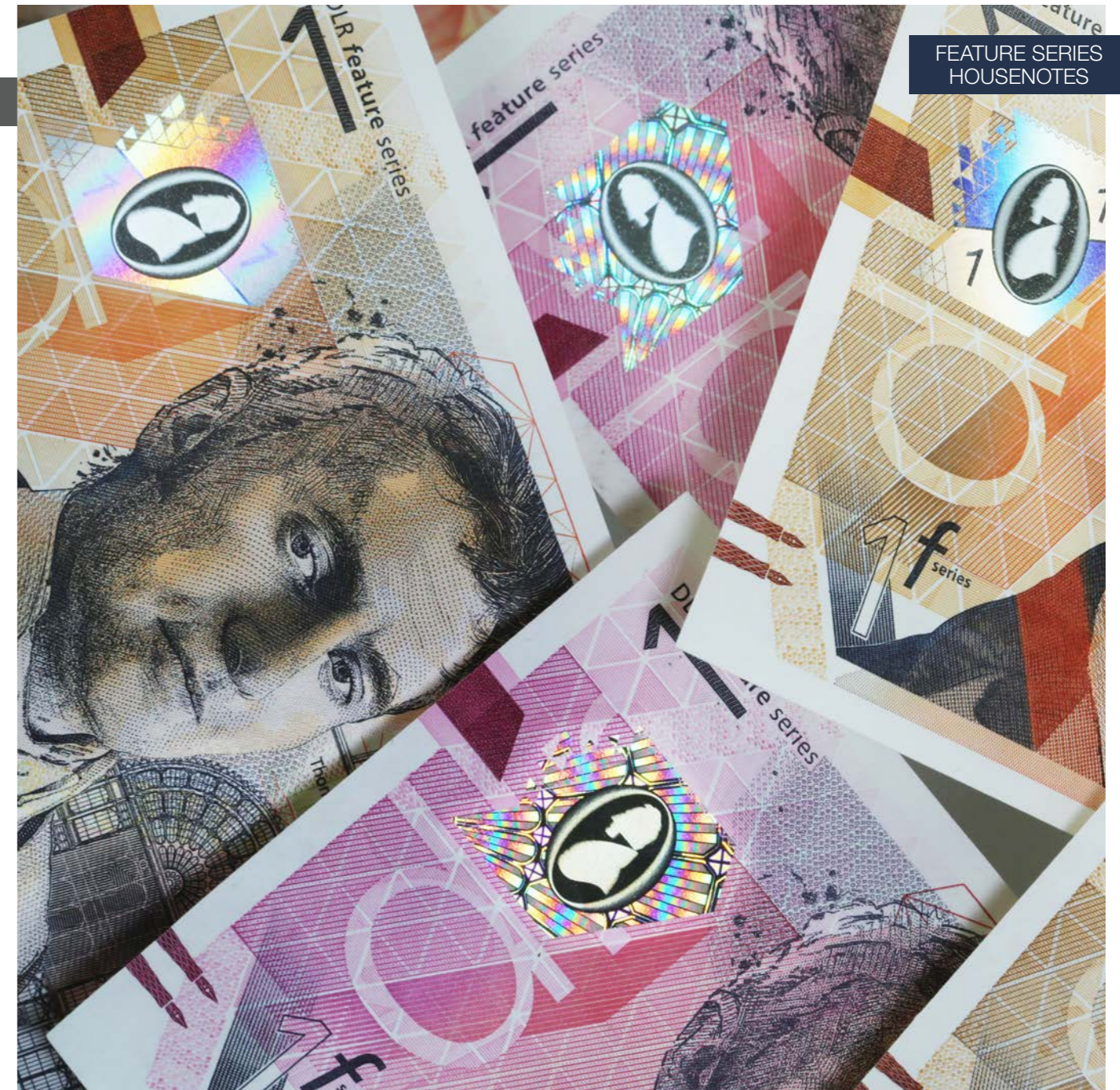
Level 2b

Machine-readable features requiring a specific type of reader to authenticate.

Level 3

Covert machine-readable features authenticated by national central banks.

“Enhanced GEMINI™
can be used to
complement the
overall design”



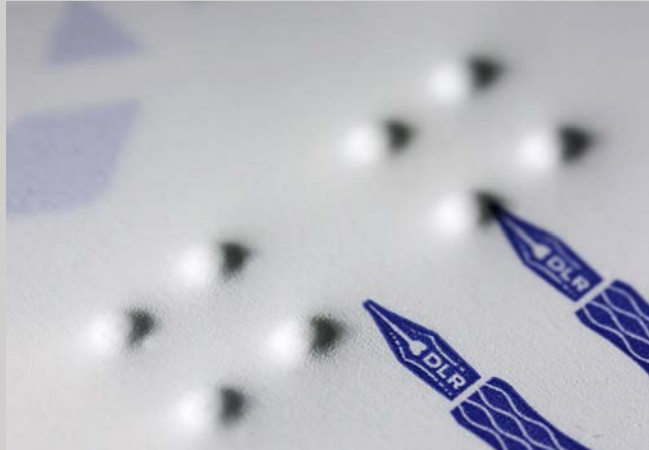
Tactile Emboss & Blind Recognition

Specifications

Touch sensitive

A recognition and authentication feature for visually impaired users of banknotes to identify and authenticate banknote denominations by touch.

Other non-visual identifying features include increasing sizes corresponding to the denominational value and raised print.



Tactile Emboss

A polymer only feature, denomination specific raised patterns are added to the polymer substrate to aid identification by visually impaired users.



Blind Recognition

Denomination specific raised patterns are added to the paper substrate during the printing process. The pictured images show the different shapes and styles between substrate types on the 1st Edition Feature Series housenotes.



MASK™

Specifications

Hide and Reveal

MASK™ is a level 1 hide and reveal print feature, which appears as a pattern when viewed in reflection but revealing hidden artwork when viewed in transmission.

It uses a dark or strong colour, combined with white, to appear as a block of pattern when viewed normally. When held up to the light letters or numbers show through to reveal letters or numbers, such as the denominational value or the initials of the central bank.

MASK™ is a cost-effective means of visually linking banknotes in the same series, appearing as coloured or shape variants in a similar position on the note throughout the series.

This feature is suitable for both polymer and paper substrates and is a simple and effective way to enhance banknote security. It is an ideal crossover feature when updating a banknote design from paper to polymer substrate as it can carry over familiar design elements and functionality.



“MASK™ is easy to describe and easy to identify, making it ideal as a public recognition feature”



GEMINI™ & Enhanced GEMINI™

Specifications

Instantaneous impact

GEMINI™ is a distinctive and versatile level 2 print feature that reveals itself under ultra-violet (UV) light for cashiers, and tellers to validate. The hidden image appears as two colours when illuminated with UV and is intricately linked to the image or pattern work of the visible print. The UV effects make it easy for the bank teller to verify using a standard UV lamp. The combination of one visible colour and two fluorescent colours provides greater resistance to simulation and counterfeit attempts.

Enhanced GEMINI™ enables more complex and detailed designs and is provided in variants of blocks, lines and microtext which are used to make up complex designs distinct to each denomination.

Easy integration

GEMINI™ is applied in the lithographic printing stages, allowing it to easily integrate with other security features in the overall banknote design. It can be used with polymer and paper substrate.

Variety of effects

Four variants of GEMINI™ are available. The original GEMINI™ appears as a single shape or image in a single colour, with the two UV colours registered perfectly over that image. Newer, 'Enhanced GEMINI™' features include

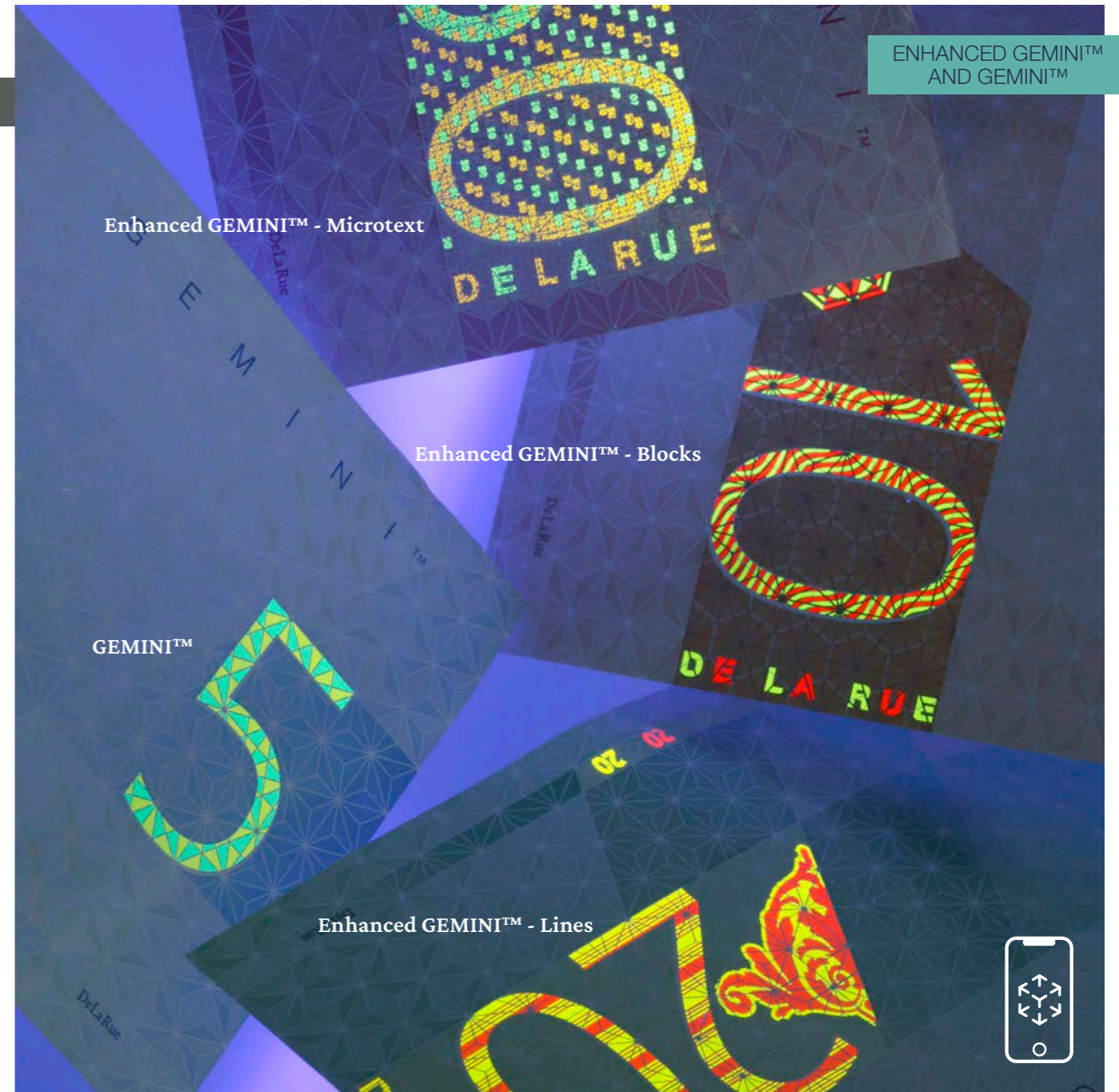
"GEMINI™ Blocks", "GEMINI™ Lines" and "GEMINI™ Microtext" are variants which use distinct patterns and fine detailing to compose the UV variants of the feature.

Recognisable and popular

GEMINI™ variants have been chosen to appear on over 150 different denominations of all values. It can be easily retrofitted onto existing designs when updating a series. It is De La Rue's most popular print feature.



“GEMINI™ variants have been chosen to appear on over 150 different denominations”



Enhanced GEMINI™ - Microtext

Enhanced GEMINI™ - Blocks

Enhanced GEMINI™ - Lines

MAGFORM™

Specifications

Multi-layered security

MAGFORM™ is a sophisticated public recognition and machine readable security feature which complements the inherent security of the PUREIMAGE™, KINETIC STARCHROME® and IGNITE™ threads.

It uses magnetics and demetallisation to visibly integrate into the banknote design, whilst remaining a machine readable feature. MAGFORM™ complements threads with the surface feature providing public security on the exposed side and MAGFORM™ securing the embedded side.

Using MAGFORM™ provides a simple route to machine readability and strong public recognition in a single feature.

Readable

MAGFORM™ can be combined with CLEARTEXT™ demetallised feature, which appears in when viewed in transmission. The transformation of bold and dark MAGFORM™ characters to a light and bright set of lettering creates an easily understood security feature.

MAGFORM™ permits a larger size of CLEARTEXT™ than is possible with traditional magnetic threads, increasing recognition and engagement and reducing design restrictions.

Secure

Level 1 - Public recognition

When viewed in reflection, MAGFORM™ adds bold, dark characters that are visible on the opposite side of the paper. When viewed in transmission, the bold, dark MAGFORM™ legend disappears to reveal any demetallised feature such as CLEARTEXT™.

Level 2a - Teller recognition

The transformation of the bold, dark MAGFORM™ characters to the intricate CLEARTEXT™ gives tellers an easily understood security feature.

Level 2b - Machine Recognition

Magnetic detectors on banknote sorting machines will recognise and authenticate the thread.

Forensic security

As a unique magnetic material that is not commercially available, MAGFORM™ delivers authentication with a distinctive signal in a simple thread based format.



MAGFORM™



ENIGMA™

Specifications

Covert and highly secure

ENIGMA™ is a 3rd generation covert, machine-readable taggant reserved exclusively for central bank use. It serves as the last line of defence in the event of a serious counterfeit attack.

A truly covert feature; ENIGMA™ is the only banknote feature available for paper banknotes that serves exclusively as a Level 3 feature.

ENIGMA™ is available as a taggant for secure and discrete incorporation

into paper, engineered for unique compatibility with a specific sensor which is sorter agnostic and can be used with a number of high speed sorters.

ENIGMA™ is embedded into the substrate of the banknote itself. This ensures the feature – and therefore the security of the banknote – is extremely durable for the lifetime of the note. The detection properties of the ENIGMA™ material are stable and do not deteriorate over time.

De La Rue's ENIGMA™ is the most secure Level 3 feature available today. Trusted by the world's leading economies – including a number of G7 countries – and currently circulating in over fifty denominations worldwide, ENIGMA™ is a third-generation covert feature that's available exclusively to central banks.

“Evaluation by two G7 central banks failed to reverse engineer this feature”



ENHANCED GEMINI™



TACTILE EMBOSS



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