



## Experience of the polymer banknote technology in Vietnam

**T**he first Guardian® polymer circulating notes were introduced in Vietnam in December 2003 and since then another three denominations have been converted to polymer.

IPCA spoke with Mr Nguyen Chi Thanh, Director at the Vault and Issue Department, State Bank of Vietnam.

**IPCA:** What were the key drivers for the decision of the State Bank of Vietnam to adopt the polymer banknote technology?

**Mr Thanh:** During the period 1997-2000, banknote counterfeiting was considered as a big and complicated problem in Vietnam. Relevant authorities believed that most of the counterfeit banknotes were produced overseas and transferred to Vietnam. Counterfeit banknotes, sometimes, appeared widely and became a serious concern in the society, which in turn, ruined confidence of the public in the national currency. In order to prevent and eliminate this problem, the State Bank of Vietnam developed a project that has allowed the issuance of several new banknote designs to replace the existing designs which were the most counterfeited in circulation.

In September 2000, the VND100,000 paper banknotes were introduced to the public with improvements in some security features such as security thread, OVI feature, etc. This denomination was first counterfeited in May 2001 and it had been simulated rather perfectly. This fact proved that another

solution must be taken and the polymer banknote technology was chosen as one option among others for consideration.

After a long process of studying, testing and applying the new technology, we came to a conclusion that further improvements in security features on future paper banknotes (which might cost double the paper banknotes in circulation at that time) would not be sufficient to repel the counterfeiting. It will be more difficult to counterfeit a banknote printed on polymer substrate and it will be easier for the public to authenticate the polymer banknote. In addition, polymer banknotes are cleaner, with durability 3 to 4 times greater than paper banknotes, which in turn results in long-term benefits. These are the main reasons for the decision of the State Bank of Vietnam to adopt the polymer technology.

**IPCA:** What are the benefits of the polymer banknotes for the community?

**Mr Thanh:** Since late 2003 to date, the State Bank of Vietnam has issued the following denominations on polymer - VND50,000, VND500,000 (December 2003), VND100,000 (September 2004) and VND20,000 (May 2006). The new polymer banknotes are well accepted by the public. After nearly 3 years in circulation,



**Mr Nguyen Chi Thanh, Director at the Vault and Issue Department, State Bank of Vietnam**

in public opinions, the polymer banknote is cleaner, more secure and more durable than the paper banknote. It should be emphasised that the number of counterfeits detected through the banking system has reduced dramatically. Counterfeits of a polymer banknote are easier to identify even without any inspection devices. In addition, according to the reports of the banks, no polymer banknotes damaged or deformed under normal circulation and storage conditions have been found so far (most of the distortion in polymer banknotes is due to exposure of the notes to a very high heat because consumers,

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at the beginning, were not familiar with the new banknote material).

**IPCA:** What have been the other benefits of the polymer banknotes in Vietnam?

**Mr Thanh:** Thanks to the great support of our partners, especially Securrency Pty Ltd, we gradually managed the technique and technology and are able to successfully produce the polymer banknotes in our premises, ensure the quality of our products at approved prime cost by good control of the spoilage rate and reorganisation of production lines. Recently, we have been independently doing the origination and plate making for polymer banknotes and we strongly believe with the knowledge and experience that we have learnt, we will achieve success in the new challenge we have got in printing polymer banknotes.

As previously mentioned, polymer banknotes have great advantages compared to paper banknotes, they are cleaner, more secure and more durable. Therefore, the usage of polymer banknotes, in the long term, will help to improve the quality of the notes in circulation, to make significant savings in production and issuance. Moreover, polymer banknotes are robust and will help to improve productivity and efficiency of note counting, quality sorting and processing through the banking system and of the whole society, especially given that Vietnam is using a great deal of cash and being placed in high humidity environments.

Besides, polymer banknote issuance has offered an opportunity for the State Bank of Vietnam to restructure their currency operations so as to enhance the operational

efficiency of the issuer and improve the quality of the services provided by the banking system. Now, we along with PolyTeQ and related parties have developed a project on this subject. This is also a part of the modernisation strategy of the State Bank of Vietnam to step up its integration into the world.

**IPCA:** In view of your experience, what would be your recommendation to other Central Banks considering the polymer note technology?

**Mr Thanh:** We believe that the polymer technology and the benefits of polymer banknotes have been proved not only in Vietnam but also in other countries that have used polymer banknotes. Therefore, any countries that adopt this technology will enjoy similar benefits from polymer banknotes.

# State Bank of Vietnam issues 20,000 Dong polymer banknote

**O**n 17 May 2006, the State Bank of Vietnam issued VND20,000 on polymer. This is the fourth denomination the State Bank has printed on polymer substrate, after VND50,000, 500,000 (2003) and 100,000 issued in 2004.

According to the State Bank of Vietnam's Nguyen Quang Toan (Deputy Director of the Treasury Department), the issuance of polymer VND20,000 is aimed at improving the security,

quality and durability of notes in circulation. The aim to improve anti-counterfeiting and to make the notes cleaner and more durable will satisfy payment demands in the national economy and in addition, will also make a great contribution in saving issuance costs of banknotes in the long term.

The design of the polymer VND20,000 note is 136mm x 65mm in size and the dominant colour remains dark blue. Vietnam's first President Ho Chi Minh is featured on the front of the note and Cau Pagoda, in the historic

town of Hoi An, Quang Nam Province, is on the back.

The security features incorporated in the polymer VND20,000 banknote include the clear window, emboss in window with numerals "20000", shadow image of portrait President Ho Chi Minh, shadow image of a daisy, security thread and gold iridescent stripe.

The current paper VND20,000 banknote will remain legal tender, however the central bank will gradually remove it from circulation.



Vietnam's new VND20,000 polymer banknote



# Polymer Centre of Excellence for secure substrate and printing technology



Conceptual drawing of the new Securrency facility which will be completed in 2006

**W**ith the rapidly growing interest in secure polymer technology, IPCA has prepared a profile of the three co-located organisations involved in its development and production.

The technology is recognised as an Australian icon in the combat against counterfeiting and was developed by the Reserve Bank of Australia (RBA) in conjunction with expertise from Note Printing Australia and Australia's peak scientific organisation, CSIRO. The facilities in Craigieburn were the test bed for the technology and spawned the birth of Securrency as the global substrate supplier and Innovia Films as the specialty film supplier.

The benefits of having the three organisations in close proximity are significant - high security premises, high levels of interaction on R&D developments, excellent logistics and response times. Yet each have their own unique profiles described here.

## Innovia Films

Innovia Films uses a proprietary "bubble process" to produce specialty Biaxially Oriented Polypropylene (BOPP) which is the base material used successfully for polymer banknotes in a full range of climatic and circulating conditions.

The "bubble process" is the first stage of the polymerisation of the banknote substrate, Guardian®. It is a showpiece of engineering excellence and the result of over 30 years of engineering innovation which continues today. It is highly automated with a sophisticated level of control ensuring high quality is maintained. The bubble process imparts unique properties ideal for banknote manufacture and performance including flatness, stiffness and dimensional stability. This process is very clean

and highly efficient. Waste from the process is very minor and is fully recycled.

This process exists only at three sites globally; these are Melbourne, Australia, Wigton, United Kingdom and Merelbeke in Belgium.

The Melbourne site is nested amongst Note Printing Australia Ltd and Securrency Pty Ltd.

This location has resulted in an extremely short, efficient and responsive supply chain, from polymer film through to finished banknote.

## Securrency Pty Ltd

Securrency Pty Ltd is a joint venture between the Reserve Bank of Australia (RBA) and Innovia Films. Securrency's core business is the production of Guardian® polymer substrate for banknotes. This is supported by a vigorous R&D program, focused on leading-edge innovative and overt security features which can also be used in new generation substrates for security documents and secure cards.

Securrency is the only supplier in the world which has extensive experience with polymer banknote technology. The proven benefits of Guardian® are superior security, cleanliness, functionality, machine processability, cost-effectiveness and recyclability. These facts have been proven over the last decade with polymer banknotes now having been issued in 23 countries and global interest is growing rapidly.



Innovia Films unique and proprietary "bubble process" produces high performance polymer for banknotes

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Securrency exports 95% of its product and due to this high global demand, a new manufacturing plant is to be commissioned in 2006 with consideration to establishing another plant overseas to meet further demand.

Through the technical expertise of PolyTeQ® Services, the technology transfer program to issuers and printers has been highly successful.

Securrency also specialises in other high security substrates:

- Sentinel® substrate for secure documents including land title certificates, academic transcripts and identification documents; and
- SENTRII® substrate for cards with unique and complex security features.

Securrency is accredited with internationally-recognised credentials:

- ISO 9001:2000 Quality Management System;
- AS/NZS 4801:2001 Occupational Health & Safety Management Systems;
- ISO 14001:2004 Standard Environmental Management System.

## Note Printing Australia Ltd

Note Printing Australia (NPA) is a wholly owned subsidiary of the RBA and was corporatised in July 1998.

NPA produced the first polymer banknote for Australia in 1988 to celebrate Australia's bicentenary. Since the introduction of polymer banknotes there has been a marked reduction in the level of counterfeits and substantial benefits in the areas of security, quality, cleanliness and cost effectiveness.

The experience and knowledge gained from banknote production has allowed NPA to diversify into other security documents.

These include academic transcripts printed on Sentinel® polymer substrate which are produced for several major Australian universities. These new transcripts contain a number of tamper-evident and anti-counterfeit security features similar to polymer banknotes.

Australia is a leader in the development of biometric passport technology and in October 2005 became one of the first countries in the world to introduce an ePassport. This new ePassport, designed and manufactured at

NPA, has an embedded microchip in the centre page storing a digitised photograph and personal details that can be read electronically.

The ePassport won a gold medal in the category 'Innovation' at The 23rd National Print Awards.

NPA is equipped with a state of the art design, prepress and printing capability and also houses the National Note Processing Centre which it operates on behalf of the RBA.

NPA is accredited with the following standards:

- ISO 9001:2000 Quality Management System;
- AS/NZS 4801:2001 Occupational Health & Safety Management Systems.



NPA's ePassport – a gold medal winner in "Innovation"

# International events

Conference	Location	Date	Website
<b>2006</b>			
5th Asian High Security Printing Conference	Kuala Lumpur, Malaysia	September 12-14	<a href="http://www.cross-conferences.com">www.cross-conferences.com</a>
Annual meeting of the World Bank Group and IMF	Singapore	September 19-20	<a href="http://www.imf.org">www.imf.org</a>
African Banknote Printers Conference	Kinshasa, Democratic Republic of Congo	October 10-13	
ATMIA Sec 2006	London, UK	October 23-24	<a href="http://www.atmiaconferences.com">www.atmiaconferences.com</a>
Banknote Conference 2006	Washington, DC, USA	November 5-8	<a href="http://www.banknote2006.com">www.banknote2006.com</a>
Cartes 2006	Paris, France	November 7-9	<a href="http://www.cartes.com">www.cartes.com</a>
Currency Conference	Bangkok, Thailand	May 6-9	<a href="http://www.currencyconference.com">www.currencyconference.com</a>



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